LESSON PLAN

PART I
COVER SHEET

LESSON TITLE: Radiation Hazards and Protective Actions

TRAINING METHOD: Lecture

ORGANIZATIONAL PATTERN: Topical

REFERENCES: AFI 32-4001, Disaster Preparedness Planning and Operations
AFMAN 32-4005, Personnel Protection and Attack Actions
AFPAM 36-2241, Volume I
The Effects of Nuclear Weapons (DOD and DOE 1977)
CDC 3E951, Readiness Journeyman Career Development Courses
Nuclear Weapon Accident Response Procedures (NARP)
Policy Guidance from HQ AFMOA/SGP "Precautions in Depleted Uranium Contamination" Dated 6 June 1995

AIDS AND HANDOUTS: PIN 710493, "DEPLETED URANIUM, HAZARD AWARENESS"

HELPFUL WORLD WIDE WEB SITES: SPECIAL NOTE: This website is current as of the date of publication. The author felt this website would be useful for instructors in the field to use in understanding new ways of presenting radiation. The United States Air Force does not indorse nor promote this website.

Http://www.sph.umich.edu/group/eih/UMSCHPS/cover.htm
Http://www.ratical.com/radiation/NRBE/NRadBioEffectsP.html

LESSON OBJECTIVE: Given a lecture on radiation, and protective actions, the student must demonstrate they have mastered the samples of behavior listed below by correctly answering the questions in part three of this RTP.

SAMPLES OF BEHAVIOR:

1. Identify the hazards associated with exposure to radiation.

2. Describe the sources of radioactive material that Air Force personnel may encounter in military operations.

3. Describe the individual protective actions necessary when dealing with radiation.

Supersedes RTP C7, dated 1 September 1996 Certified by: HQ AFCESA/CEX (Lt Col John Robertson)
OPR: HQ AFCESA/CEXR (TSgt Ron Childs) Pages: 36/Distribution: F

SUGGESTED COURSE(S) OF INSTRUCTION: NBC Defense Training
Base Emergency Preparedness Orientation
Disaster Preparedness Support Team
Shelter Management (Nuclear Threat)

STRATEGY: This lesson plan is designed to provide information on what radiation is, the types, hazards, and protective actions. The wartime aspect of protection, survival, and decontamination are listed in the related lesson plans. Stress the distance limits of the particular hazard and the principles of time, distance and shielding for protection from alpha, beta, and gamma radiation. The Depleted Uranium (DU) information contained in this RTP is the result of findings obtained by a board investigating issues associated with Gulf War Illness. It was found that service members are generally unaware of the hazards associated with DU, especially with respect to the precautions to be taken with battle damaged equipment. The test items are not for the Base Emergency Preparedness Orientation.

This Readiness Training Package was revised and edited by TSgt Ron Childs with the help of TSgt Troy Oden and Captain John Morgan.

LESSON OUTLINE:

MAIN POINT 1. UNDERSTANDING RADIATION

a. Definition of Radiation
b. Ionization
c. Radioactive Decay
d. Half Life
e. Effective Half Live
f. Radiation Damages Living Tissue

MAIN POINT 2. TYPES OF RADIATION

a. Alpha
b. Beta
c. Gamma & X-Ray

MAIN POINT 3. UNITS OF MEASUREMENT

a. Alpha Unit of Measurement
b. Gamma Unit of Measurement
c. RAD & REM

MAIN POINT 4. SOURCES OF RADIATION

a. Peacetime
b. Wartime

MAIN POINT 5. PROTECTIVE ACTIONS

a. Particulate Hazards
b. Rays

PART II
TEACHING PLAN
INTRODUCTION

ATTENTION:

Military men and women were exposed to radioactive hazards in the form of Depleted Uranium during the gulf war, and didn't even realize it. Had they been properly trained and made aware of the hazard, they could have taken simple steps to minimize their exposure to radiation.

MOTIVATION:

To protect yourself, you must be aware of the different types of radiation that are released and the protective actions you can take to limit their effects on your body.

OVERVIEW:

During this lesson we will cover:

-Understanding Radiation
-Types of Radiation
-Units of Measurement
-Sources of Radiation
-Protective Measures

TRANSITION:

Let's begin by looking at what Radiation is:

BODY

MAIN POINT 1. UNDERSTANDING RADIATION

Our world is radioactive and has been since it was created. Over 60 radioactive elements called radionuclides can be found in nature.

Radionuclides are found in air, water and soil, and additionally in us, being that we are products of our environment. Every day, we ingest/inhale nuclides in the air we breathe, in the food we eat and the water we drink. Radioactivity can be found in the rocks and soil that make up our planet, in the water and oceans, and even in our building materials and homes. The natural radioactivity that is found everywhere on earth is commonly referred to as “Background Radiation”.

a. DEFINITION OF RADIATION

Radiation is energy traveling in the form of particles or waves in bundles of energy called photons. Some everyday examples are microwaves used to cook food, radio waves for radio and television, light, and x-rays used in medicine.

Radioactivity is a natural and spontaneous process by which the unstable atoms of an element emit or radiate excess energy in the form of particles or waves. These emissions are collectively called ionizing radiation. Depending on how the nucleus loses this excess energy either a lower energy atom of the same form will result, or a completely different nucleus and atom can be formed.

b. IONIZATION

Ionization is the process of forming ions. An ion is an electrically charged particle. When radiation stikes an atom in its path, electrons may be removed from the atom. The result of this "ionization' is the formation of electrically charged particles. Radiation can be of such high energy that when it interacts with other materials, it can remove electrons from the atoms in the material. This effect (ionization) is the reason why ionizing radiation is hazardous to our health, and provides the means by which radiation can be detected.

INSTRUCTORS NOTE: Attachment 1 can be used to help illustrate the ionization process.

c. RADIOACTIVE DECAY

Radioactive decay is the decrease in activity of any radioactive material with the passage of time. This is due to the spontaneous emission from the atomic nuclei of either alpha or beta particles, sometimes accompanied by gamma radiation. As a result of this process the radioactive source, or isotope, can be converted (decay) into an isotope of a different element. For example, an element resulting from uranium decay is lead.

d. **HALF-LIFE**

Half-life is the time required for the quantity of a radioactive material to be reduced to one-half its original value. The half-lives have been found to range from a small fraction of a second to thousands of years.

EXAMPLE: The major biological hazard from fallout is from the long-lived isotopes such as Strontium-90, a beta emitter. Strontium-90 has a half –life of approximately 27.7 years.

INSTRUCTOR NOTE: Attachment 2 can be used to help illustrate half-life process.

e. EFFECTIVE HALF-LIFE

There is also a term called "*effective half-life*". Essentially, the effective half-life is the time in which the quantity of radioactive material in the body will decrease to half of its value due to radiological decay and biological elimination.

f. RADIATION DAMAGES LIVING TISSUE

Radiation is hazardous to living tissue. Our bodies are made of millions of cells. When some of these cells are exposed to radiation, they can be seriously damaged or destroyed, which may result in sickness or death.

TRANSITION:

Now that we understand the basics of radiation lets look at the various types.

MAIN POINT 2. TYPES OF RADIATION

Although more types of radiation exist than we cover during this lecture, the four main types of radiation that we could incur during typical military operations are, alpha, beta, gamma, and x-ray. Understanding the basic principles of these types of radiation, their characteristics, and ways to protect yourself is essential to staying alive.

a. ALPHA

Alpha radiation is the heaviest and most highly charged type of radiation. As a result, alpha particles very quickly give up their energy to any medium through which they pass, rapidly coming to equilibrium with and disappearing in the medium. An alpha particle is identical to the nucleus of a helium atom, which consists of two protons and two neutrons.

Alpha particles travel only a few inches in the air before they collide with air molecules, acquire electrons, and become helium atoms. A piece of paper or clothing can provide protection against alpha particles. However, if ingested or inhaled, alpha particles can cause serious internal damage.

b. BETA

Beta particles are energetic electrons emitted from the nucleus of many natural and man-made radioactive materials. Being much lighter than alpha particles, beta particles are much more penetrating.

Beta particles have a very small mass and move much faster and farther than alpha particles, traveling nearly two feet through the air. They can pass through paper and penetrate as far as one-tenth of an inch into the skin. However, a thin sheet of metal like aluminum foil stops beta. Also, although the beta particle travels a fair distance, its path is not straight. Consequently, the measured distance from its source is about 12–18 inches. External exposure to beta particles can burn the surface of the skin, but they are stopped before they reach internal organs. If ingested or inhaled, beta particles can also cause serious internal damage similar to alpha particles. Heavy clothing and gloves protect the skin from beta burns.

c. GAMMA AND X-RAY

Gamma and x-rays are a form of electromagnetic radiation and as such, are the most penetrating of the four types of radiation and easiest to detect. Once emitted, gamma rays differ from x-rays only in their energies. They will have the same basic characteristics and protective actions, but generally speaking x-rays are less penetrating and harder to detect.

1) GAMMA AND X-RAYS TRAVEL GREAT DISTANCES

Gamma rays travel great distances through the air and pass through many materials, including body tissues. Only very dense shielding such as lead or concrete decreases their strength. Both internal and external exposure to gamma rays can be extremely hazardous.

2) THEY CAN NEITHER BE SEEN NOR FELT

Gamma and X-rays can neither be seen nor felt by human beings, except at very high intensities which may cause a tingling sensation, gamma rays produce harmful effects even at a distance from their source. Additionally, high doses of gamma radiation can lead to radiation sickness and/or death.

3) GAMMA RADIATION OFTEN ACCOMPANIES ALPHA OR BETA PARTICLES

Gamma radiation often accompanies beta particles, because a nucleus emitting those particles may be left in an excited (higher-energy) state.

MAIN POINT 3. UNITS OF MEASUREMENT FOR RADIATION

We can *measure* alpha and gamma radiation with our field radiation detection meters, commonly referred to as RADIACS (Radiation Detection, Indication, and Computation); however, using most RADIACS in the Air Force inventory, we are limited to only *detect* the presence of beta and x radiation. The current instruments give indication and intensities, but are not calibrated for measuring beta and x-radiation.

a. ALPHA UNIT OF MEASUREMENT

The unit of alpha measurement generally used when discussing intensities of alpha radiation is counts per minute (CPM). CPM is a representation of the number of times an alpha emitter gives off an alpha particle (two protons and two neutrons).

Since many RADIAC's used to measure Alpha Radiation also detect X-Rays, often times the term counts per minutes is used to express the presence of x-rays.

b. GAMMA UNIT OF MEASURMENT

The unit of measurement for gamma radiation is the centigray (cGy). The term centigray is a relatively new term. Air Force instruments measure gamma radiation in "roentgens." One centigray is equal to one roentgen. Two important concepts related to gamma radiation are roentgens per hour (R/HR) and roentgens (R). The term R/HR refers to a given *dose rate* of gamma radiation while R refers to an accumulative *dose* of gamma radiation over a period of time. The speedometer and odometer on a car is analogous to these two concepts.

INSTRUCTORS NOTE: Attachment 3 can be used to help illustrate dose and dose rate.

c. **RAD & REM**

There are two terms that relate to the amount of damage radiation causes to humans: Radiation Absorbed Dose (RAD) and roentgen equivalent man (REM). The RAD measures the amount of radiation absorbed by a gram of material such as body tissue. The REM is a unit that measures the biological damage caused by various kinds of radiation. The REM considers that the biological effects of alpha, beta, and gamma radiation on tissue are not the same. To determine REM dose, technicians use a correction factor to adjust the biological damage that results from a particular form of radiation. It just so happens that one REM is equal to an accumulative dose of one roentgen. During wartime operations, we are primarily concerned with gamma radiation, because exposure to alpha and beta radiation is reduced by protective clothing.

When you see the term REM, remember, it's a unit of measurement with the same meaning as an accumulative dose of gamma radiation (roentgen).

MAIN POINT 4. SOURCES OF RADIATION

a. PEACETIME

The main sources of radiation during peacetime operations is either from a nuclear weapons accident, a crash of an aircraft built with depleted uranium or a hazardous materials (HAZMAT) incident involving radioactive sources.

1) NUCLEAR WEAPONS ACCIDENT

At a nuclear weapons accident, the greatest hazard will be if you have a nuclear detonation. As you will see in a few minutes when we go over the effects of nuclear warfare, a nuclear detonation causes a tremendous amount of damage to everything in the vicinity of the weapon. Due to extensive weapons safety procedures the chances of having a nuclear detonation are one in a million, so your primary radiation hazard will be from either the solid or broken up weapons grade radioactive material. Weapons grade radioactive material is a gamma emitter at close proximity, but primarily an alpha hazard when broken up into smaller pieces.

Unless your in close proximity to a large piece of the weapons radioactive material the primary health hazard will be if the radioactive material is broken up into small pieces, becoming a particulate hazard in the form of small debris and dust, which could be inhaled or ingested.

2) AIRCRAFT ACCIDENT

Although the chance of encountering radioactive material at an Aircraft Accident is small, you must be aware that some aircraft are manufactured using depleted uranium. The Air Force primarily uses DU in aircraft counterbalances (C-5, C-141, etc.) and in 30 mm API (Armor Piercing/ Incendiary) GAU-8 munitions.

3) HAZMAT

Whether it's through the air or over our roads and railways, hazardous materials move across our nation everyday. More and more our nation finds uses for radioactive materials. We are using them in the healthcare profession and in many industrial and military applications. We must constantly be aware that radioactive materials are places we would could have never imagined ten years ago.

b. WARTIME

The main source of radiation during wartime military operations is from the use of nuclear weapons or the use of depleted uranium in our ammunition. Of course all peacetime incidents could occur during wartime.

1) NUCLEAR WARFARE

A nuclear detonation produces a blast wave, extreme heat (thermal radiation), and nuclear radiation. The blast wave produces tremendous pressure and high winds, resulting in severe damage.

Thermal radiation, which comes from the fireball of the explosion, produces a blinding light followed by extremely high temperatures. The nuclear radiation released from a detonation can damage or destroy living cells.

a) FALLOUT

Fallout from the explosion causes most of the nuclear radiation casualties. When a weapon detonates, the explosion draws up surface materials, such as soil and debris, into the radioactive (mushroom) cloud. Some of the materials vaporize, and others melt into debris. The radioactive elements mix with the soil and debris, which return to the earth as radioactive fallout. Fallout radiation consists primarily of gamma radiation and beta particles.

b) GAMMA RADIATION AND BETA PARTICLES ARE THE MOST HARMEFUL

Gamma radiation and beta particles are the most harmful types of radiation associated with a nuclear detonation. Gamma radiation is present during the nuclear burst and is the major hazard from radioactive fallout. Remember that Gamma radiation is pure energy, and like an X-ray, can penetrate everything to some extent.

2) USE OF DEPLETED URANIUM IN WEAPONS

Depleted Uranium (DU) is an extremely dense metal that has a multitude of military uses from being used as protective shielding in armored vehicles to munitions designed to penetrate heavy armor.

The Air Force primarily uses DU in aircraft counterbalances (C-5, C-141, etc.) and in 30 mm API (Armor Piercing/ Incendiary) GAU-8 munitions. Exposure to DU may occur anytime there is damage to a DU armor package or when an item (such as a vehicle) is hit with a DU munition.

DU presents a radiological hazard from both external and internal exposure. Externally, DU and its decay products emit beta and gamma/x-ray radiation which can serve as sources of external radiation for personnel. Internally, insoluble DU oxide can be inhaled and deposited into the lung where irradiation by alpha particles is the primary concern.

Soluble forms of DU can present a significant hazard. Like any heavy metal, DU ingested/ inhaled into the body, subsequently enters the blood stream, which could prove to be toxic to the kidney and other organs.

> Contact gamma dose rates from bare DU can be on the order of 15 mrem/hr, while skin contact dose rate due to beta radiation from bare DU is approximately 238 mrem/hr.

INTERIM TRANSITION

Now that you know the types of radiation and where the hazards come from lets look at how we protect ourselves from radiation.

MAIN POINT 5. PROTECTIVE ACTIONS

When protecting ourselves from radioactive hazards or materials we should be concerned about hazards from both particles and rays that emit from radioactive material. Many situations we encounter in the military will present us with radioactive materials that give off more than one type of radiation. For instance if there is a nuclear detonation that creates radioactive fallout. You will encounter debris that contains a particulate hazard in the form of beta radiation, and a ray hazard in the form of gamma radiation. You must be prepared to protect yourself.

Required procedures and equipment will vary depending on the type of work to be accomplished. For example, far less stringent safety procedures would be required when doing an initial survey of a contaminated vehicle than would be required if the vehicle were to be decontaminated.

a. PARTICULATE HAZARDS

As discussed previously, Alpha and Beta radiation in the form of particles can enter the body through your eyes, nose, mouth, and open cuts or wounds. The ingestion of particulate radiation in any form is the primary hazard of concern. You must take precautions to minimize the risk of ingestion or inhalation. This often times requires appropriate personnel protective equipment (i.e., clothing, detection, equipment, etc.) and procedures. You must take precautions to ensure these hazards do not enter or stay on your body.

1) RULES

Irrespective, a couple of common sense rules always apply when dealing with radioactive material. They are as follows:

a) AVOID CONTAMINATED AREAS

In general, when radioactive contamination is present, the area should be evacuated or cordoned off and avoided. If it is necessary to work in a contaminated environment you must wear protective equipment. Also health monitoring or exposure control operations will be required.

b) ENSURE PROTECTIVE EQUIPMENT IS OPERATIONAL

Ensure your protective equipment is operational and appropriate for the task to be accomplished.

c) CONTROL CONTAMINATION SPREAD

Establish appropriate controls (i.e., contamination control station, radiological monitors, air sampling) to minimize the spread of any contamination. Don't eat, drink, or smoke in a potentially contaminated area.

d) COVER EXPOSED SKIN

Rolling down your sleeves and covering any exposed skin areas. This provides protection from alpha and beta radiation in the form of particles. You should pay particular attention to protecting open cuts or wounds. Cover your mouth with an uncontaminated cloth, surgical mask, or protective mask if available.

e) AVOID DISTURBING CONTAMINATION

Avoid doing things that may stir up contamination such as shuffling your feet or sweeping. If indoors, turnoff ventilation systems and close all doors and windows. Alpha particles are hard to detect. Therefore, don't smoke, eat, or drink eat anything until the area is determined clean of alpha contamination.

f) BETA RADIATION HAS GREATER PENETRATING POWER

Beta radiation penetrates from a few millimeters to one centimeter beneath the surface of the skin. Beta particles are harmful if ingested or if they contact your skin. Beta burns occur when skin is exposed to beta particles for even a short time.

g) CLEANSE EXPOSED AREAS ASAP

Limit external hazards by wiping or washing exposed areas as soon as possible.

h) INCREASE SHIELDING

Increase the shielding between yourself and the beta source by finding shelter. For example, if you are indoors, move to an inner room. If outdoors, get indoors or completely evacuate the area.

2) CONTAMINATION AVOIDANCE

Contamination avoidance plays a critical role in protecting yourself form the effects of radiation, contamination control is simply a set of rules that includes actions taken before an attack to protect resources from contamination, and all of those actions taken after an attack to mark and avoid contamination. These measures reduce the amount and spread of contamination.

a) COVER EQUIPMENT

Cover equipment with plastic sheets or tarpaulins to minimize fallout contamination. Park vehicles in hangars or garages or under covered areas. Keep all doors, windows, and canopies closed to keep out fallout.

b) TAKE SHELTER

You should take shelter before fallout arrives. Any overhead cover is better than nothing. A vehicle, culvert, poncho, or any other expedient cover may be your only available shielding if you are out in the open when fallout arrives.

> ***INSTRUCTORS NOTE:*** In general, 150 lbs of material provides good protection against gamma radiation. This is approximately 18" of earth, 12" of concrete or 4" of steel.

If your mission permits, avoid handling objects you suspect are contaminated.

If your mission does not require you to enter a contaminated area, stay out.

b. RAYS

As was stated earlier Gamma and X- radiation can seriously damage or destroy cell tissue. Rays can penetrate to an extreme depth in tissue and up to several inches in lead.

Protect yourself from gamma radiation by practicing three basic principles: time, distance, and shielding.

1) Time

Limit the **time** you are exposed to the radioactive source. Reduce any exposure by performing all necessary duties as quickly and thoroughly as possible.

INSTUCTOR NOTE:

7/10 Rule

In a wartime environment, where a nuclear device has been detonated, after radioactive intensity peaks, the intensity diminishes to a tenth of its original intensity every multiple of seven hours. For example, seven hours after an original intensity of 1000cGy/hr, which is the unit of radiation measurement per hour, the level will be approximately 100cGy/hr or 1/10 of the original intensity. Taking this one step further, the level will drop to 10 cGy/hr 49 hours or 7x7 hours after reaching 100cGy/hr. ***NOTE:*** In general, two weeks after a nuclear detonation, radiation levels will have greatly reduced.

2) DISTANCE

Evacuate from the contaminated area immediately. If you can't evacuate, try to increase the distance between you and the radioactive source.

3) SHIELDING

Choose shelter that puts the most mass between you and the radioactive source. A pound of feathers and a pound of brick weigh the same, but the brick is denser and obviously gives better shielding. For example, to stop as much gamma radiation as 12 inches of concrete does, you would need 18 inches of earth.

CONCLUSION

SUMMARY: During this lesson we have covered how radiation works and effects different elements. Next we discussed some terms in identifying radiation, various types of radiation and terms used to identify units of measurement. And at the end we looked at where you might encounter hazardous radiation in military operations and how to protect yourself.

REMOTIVATION: No one doubts the damage that nuclear radiation can cause to living tissue. However, an understanding of these effects can help us to properly guard ourselves and increase our chances of survival in a contaminated environment.

CLOSURE: This concludes our lesson on alpha, beta, and gamma radiation hazards and protective actions.

TRANSITION: (Develop locally to transition to the next topic.)

PART III
EVALUATION
STUDENT PERFORMANCE STANDARDS

1. LESSON OBJECTIVE: Identify the hazard associated with exposure to radiation.

QUESTION: MULTIPLE CHOICE

Radiation can be of such high energy that when it interacts with materials, it can remove electrons from the atoms in the material. This effect is called ________ , and it is the reason why radiation is hazardous to our health.

a. Osmosis
b. Radioactive Depletion
c. Ionization
d. Depleted Uranium

Key: c. Ionization

Reference: Main Point 1

2. LESSON OBJECTIVE: Describe the sources of radioactive material that Air Force personnel may encounter in military operations.

QUESTION: MULTIPLE CHOICE

Radioactive material will be present in which of the following situations.

a. Following a Nuclear Detonation.
b. At an aircraft accident involving a C-141.
c. A terrorist incident involving a pipe bomb containing Depleted Uranium.
d. All of the above

Key: d All of the above

Reference: Main Point 4

3. LESSON OBJECTIVE: Describe the individual protective action necessary when dealing with radiation.

QUESTION: (Matching)

Match minimum levels of protection to each hazard listed below.

1. Nuclear Fallout conditions.	________	a. Prevent burns by wearing heavy material such as a field jacket and protect respiratory tract.
2. Alpha contamination.	________	b. Limit exposure time and use maximum shielding and distance
3. Beta contamination	________	c. Protect open wounds and respiratory tract.

Key:
1. b
2. c
3. a

Reference: Main Points 5

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4. LESSON OBJECTIVE: Describe the individual protective action necessary when dealing with radiation.

QUESTION: (Multiple Choice)

What three basic principles are used to protect yourself against radiation?

a. Time, decontamination, and shielding
b. Time, dosimeters, and shielding
c. Time, distance, and shielding
d. Time, decay, and shielding

Key: c

Reference: Main Point 5

PART IV
RELATED MATERIALS

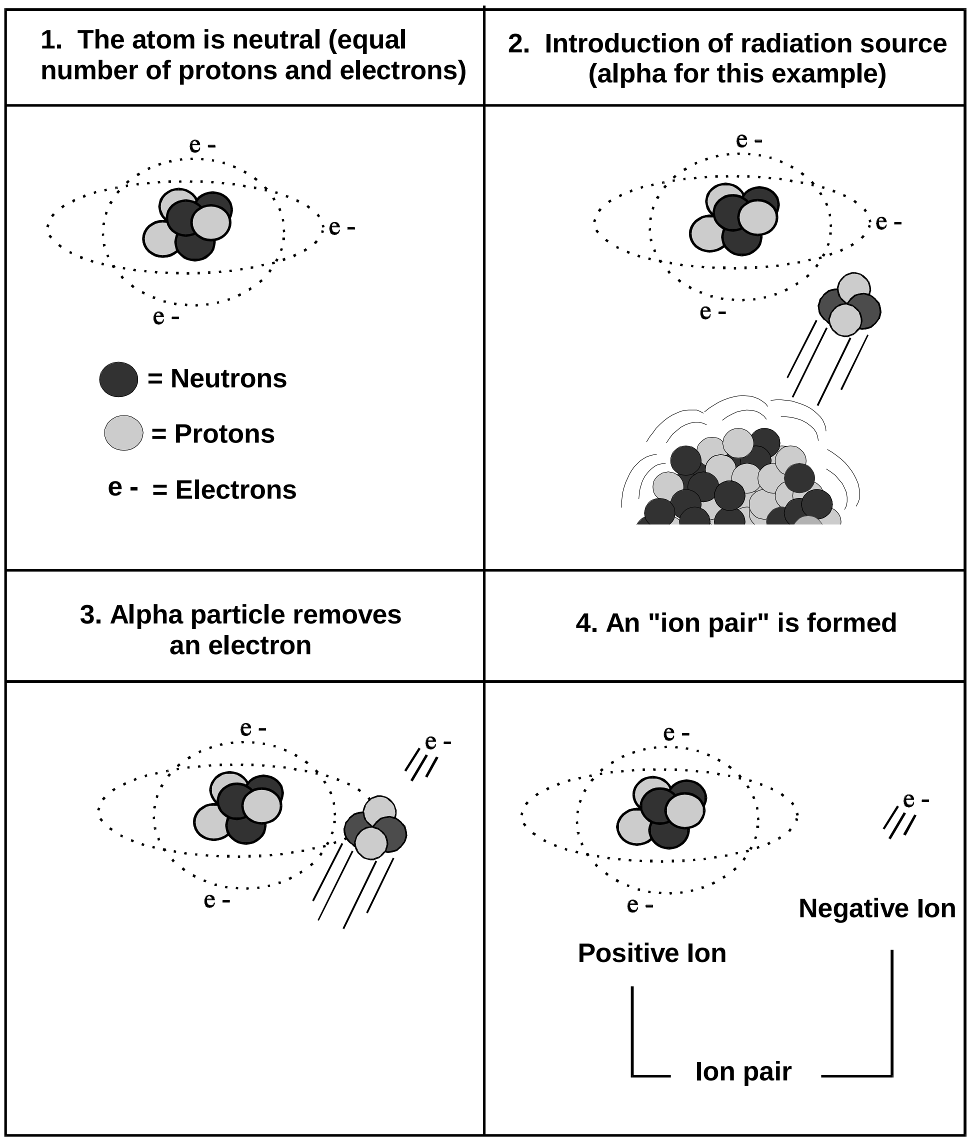
ATTACHMENTS

Attachment 1. Illustration of Ionization
Attachment 2. Sample Chart Depicting the Half-Life of Radioactive Material
Attachment 3. Illustration of Dose/Dose Rate Analogy
Attachment 4. Illustration of Radiation Penetrating Distances
Attachment 5. Illustration of Various Types of Radiation's Penetration Power
Attachment 6. Illustration of the Electromagnetic Spectrum

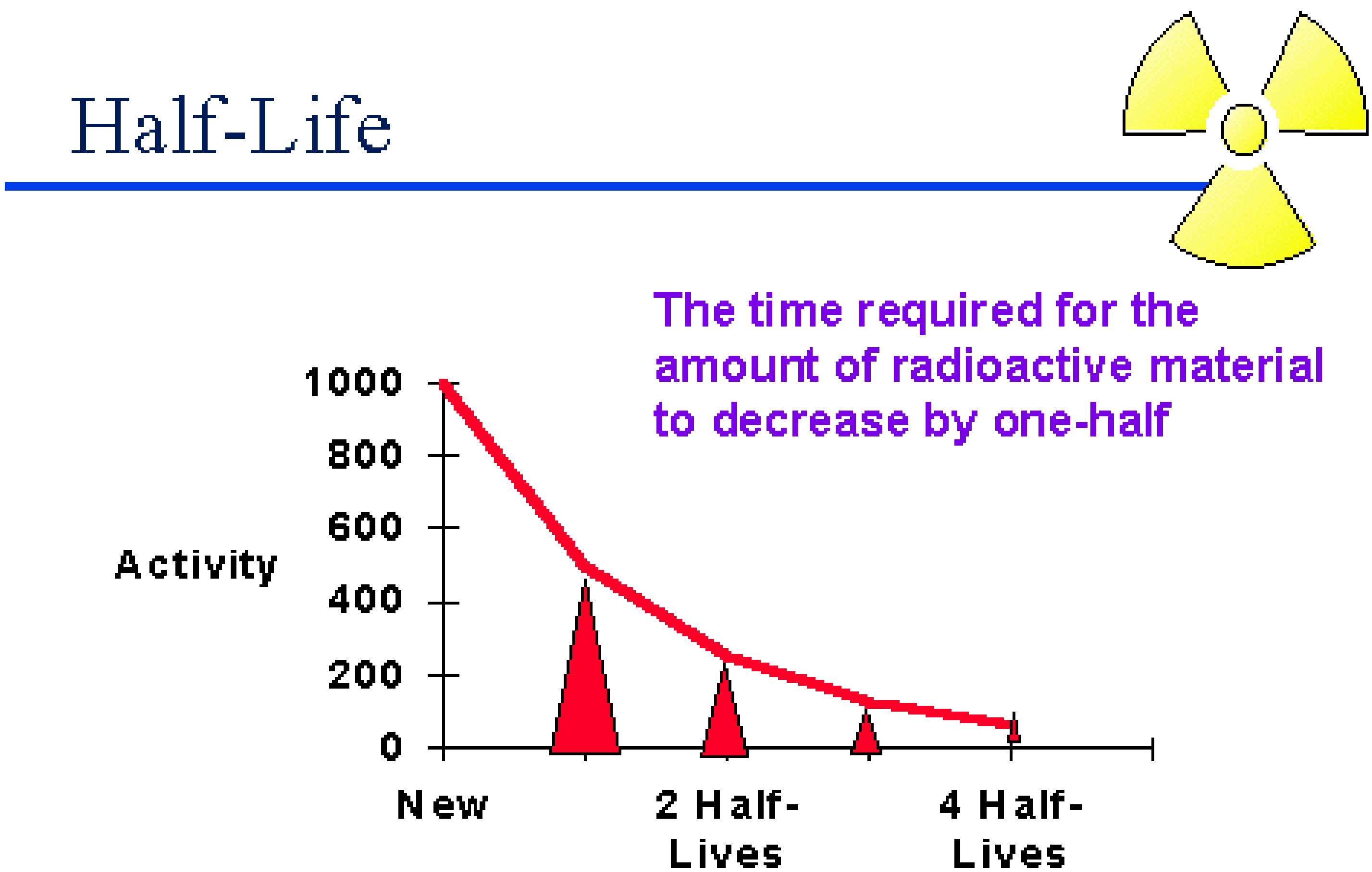
READINESS TRAINING PACKAGES

RTP C1-Nuclear Warfare Defense Actions
RTP F16 – Wartime Radioactive Fallout Decontamination
RTP H13 – Peacetime Accident Radiological Contamination Control

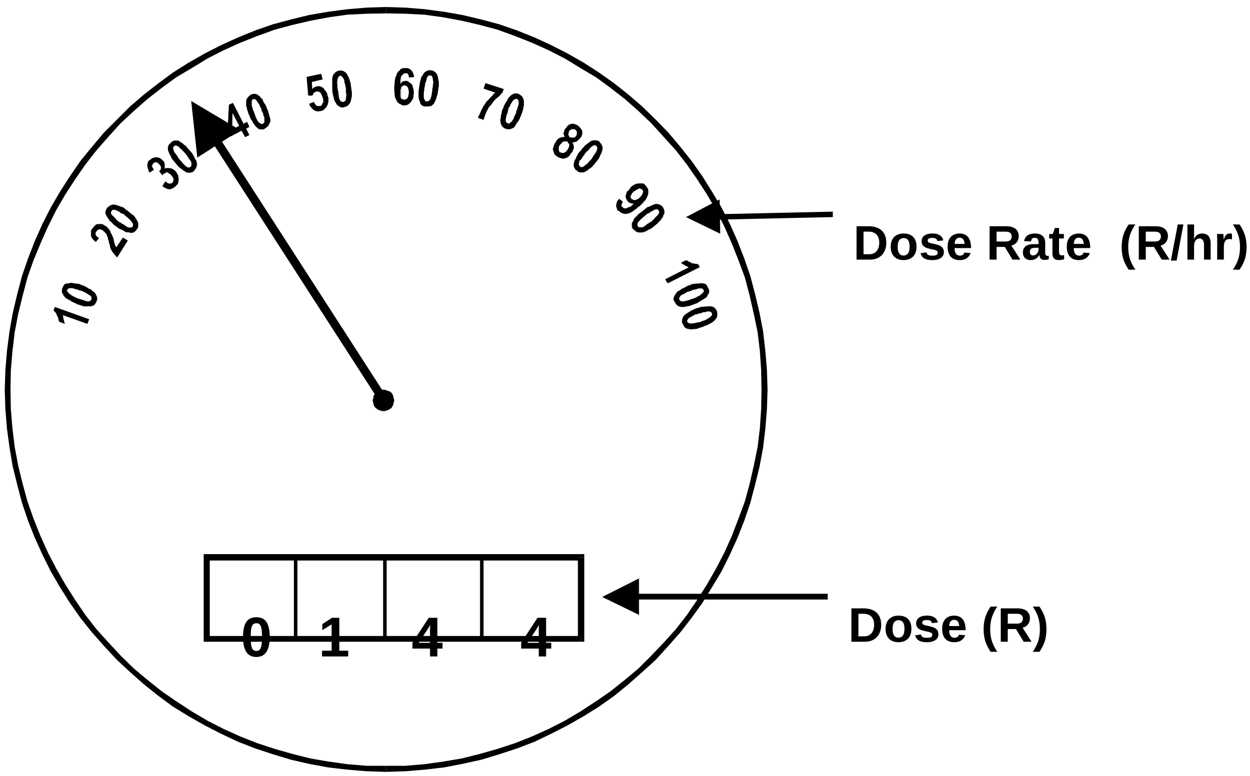
Attachment 1 - Illustration of Ionization



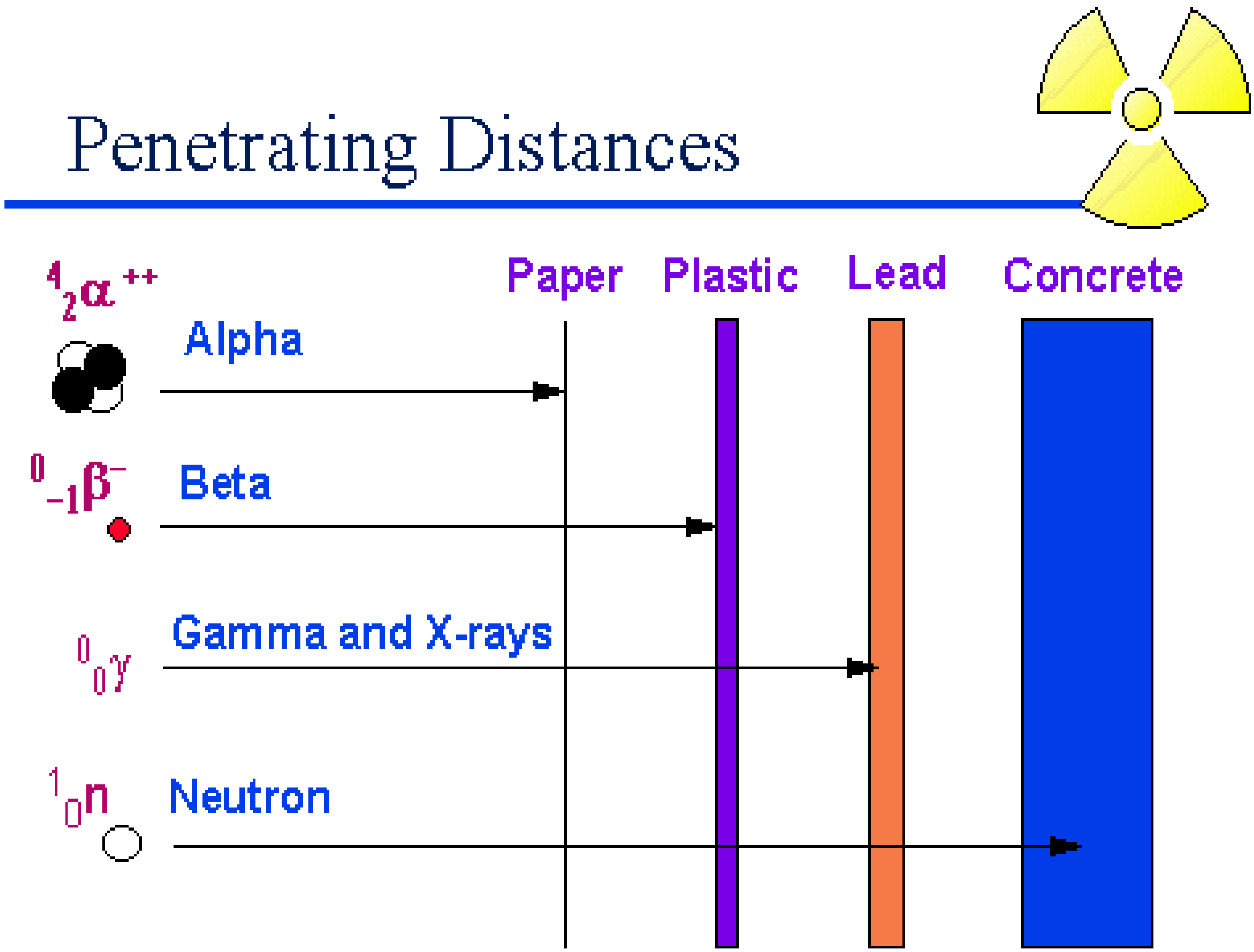
Attachment 2 – Sample Chart Depicting the Half-Life of Radioactive Material



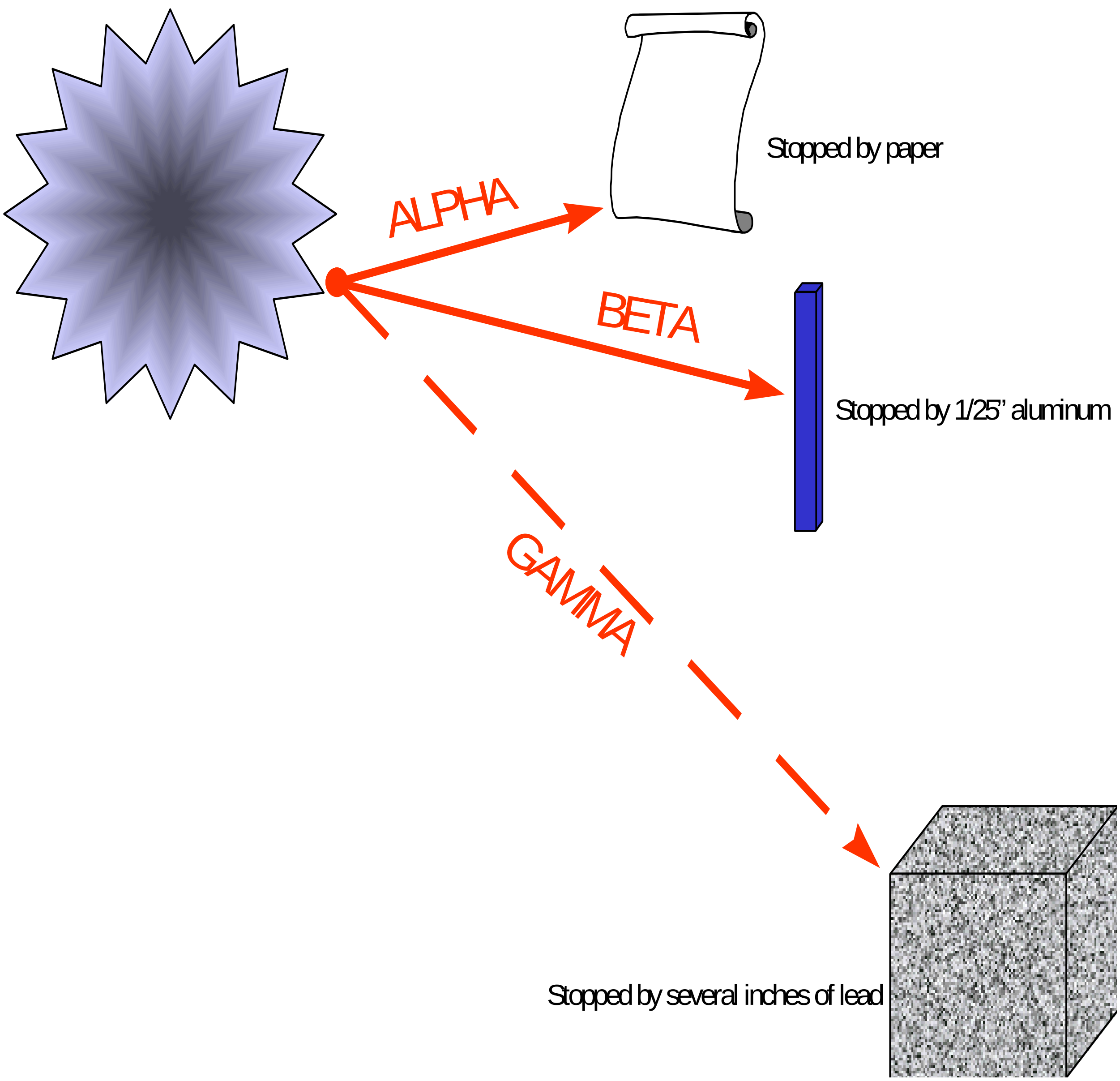
Attachment 3 - Illustration of Dose/Dose Rate Analogy



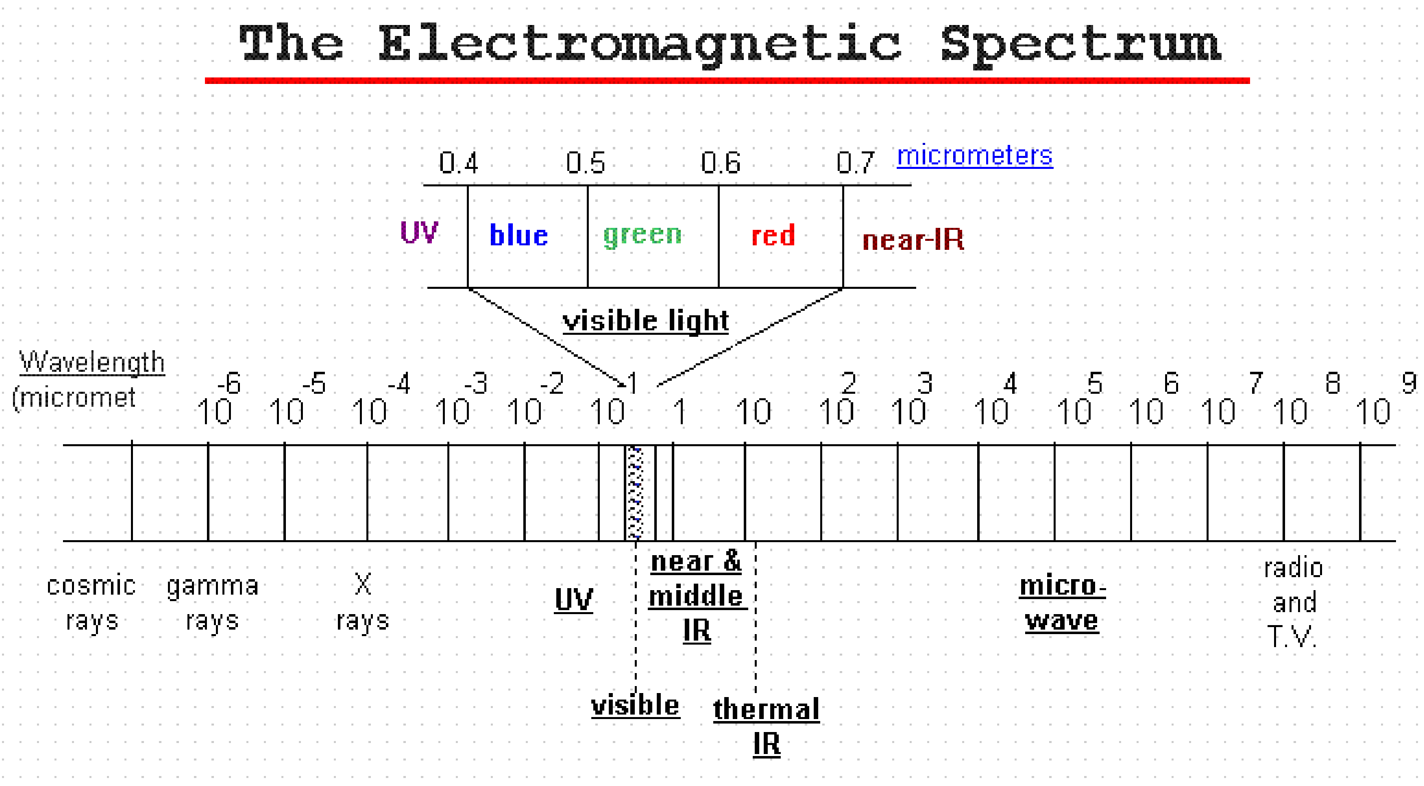
Attachment 4. Illustration of Radiation Penetrating Distances



Attachment 5. Illustration of Various Types of Radiation's Penetration Power



Attachment 6. Illustration of The Electromagnetic Spectrum



TRAINING PACKAGE COMMENT REPORT

RTP # __________________ **RTP DATE: _________________**

For an *immediate response* to your questions concerning subject matter in this Readiness Training Package (RTP), contact the Office of Primary Responsibility(OPR)TSgt *Ron Childs* of the Contingency Training Section at DSN 523-6458 between 0700-1600 (CT), Monday through Friday. Otherwise, write, fax, or E-mail the OPR to make comments, suggestions, or point out technical errors in the areas of: references, body information, performance standards, test questions, and attachments.

NOTE: Do not use the Suggestion Program to submit corrections for printing or typographical errors.

Comments:____
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