TRAINING & QUALIFICATIONS PROGRAM OFFICE

BROOKHAVEN NATIONAL LABORATORY

GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT)

STUDY GUIDE

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Introduction

Brookhaven National Laboratory, in conjunction with the Department of Energy, is firmly committed to having a radiological control program of the highest quality. This program, as outlined in the BNL Radiological Control Manual, requires all individuals, as well as their supervisors and managers, to be involved in the planning, scheduling, and conduct of radiological work. This directive also requires that adequate radiological safety shall not be compromised to achieve production or research objectives.

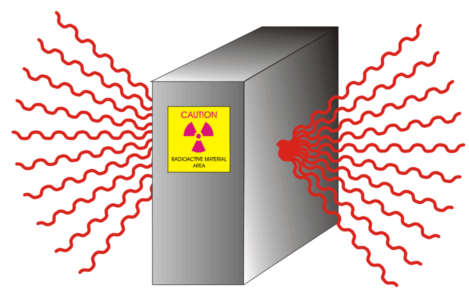
To accomplish this goal, all personnel who may encounter radiation or radioactive materials while performing their job must be informed of the potential effects, as well as the policies and procedures in place to minimize risk to the worker.

General Employee Radiological Training (GERT) provides the core level knowledge needed to safely enter unescorted and work within certain radiologically controlled areas at Brookhaven National Laboratory. For the purposes of this course, radiologically controlled areas include **Controlled Areas**, **Controlled Areas TLD Required**, and **Radioactive Material Areas** within **Controlled Areas**. While attending this course, participants are introduced to fundamental radiation protection concepts, types and sources of radiation, and risks associated with receiving low-level occupational exposure. In addition, the course applies the fundamental radiation protection knowledge and philosophy of maintaining radiation dose **As Low As Reasonably Achievable** (ALARA).

Identify (two) sources of ionizing radiation energy at Brookhaven National Lab

Radioactive Material

Any material containing radioactive atoms is called either **radioactive material** or a **radioactive source**. These sources can be readily identified because of the radiation energy being emitted. BNL manages a large variety of radioactive materials that may contribute to occupational dose.



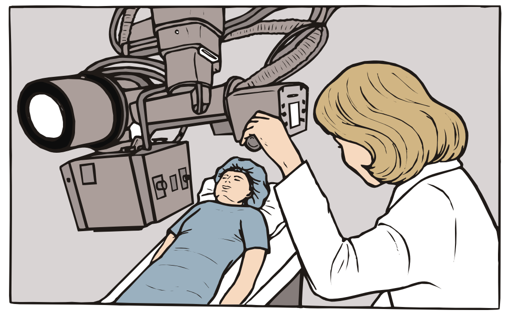
BNL's radioactive material are radioactive sources used in research and instrument calibration, radioactive waste generated through operations of the facility or activated materials that were made radioactive by bombardment with neutrons, protons or other nuclear radiation.

Radiation sources are either dispersible radioactive materials used in research (that is, they can be spread from the container) or are sealed (not able to be dispersed) and are used for instrument calibration.

Wave or ray penetrating radiation emitted from radioactive materials is called **gamma radiation**. Particle type radiation from these materials is called **alpha** or **beta radiation**. Alpha radiation is a positively charged particle emitted by certain radioactive materials. Alpha particles can be stopped by a sheet of paper. Beta particles are either positively charged particles (called positrons) or negatively charged particles (called electrons) that are emitted from an atom during radioactive decay. A Beta particle can be stopped by an inch of wood or a thin sheet of aluminum.

Keep in mind that sources of radioactive materials are not necessarily confined to nuclear power plants and research facilities, such as BNL. Radioactive sources can also be found in medical diagnostics, weapons production, and radiography.

Radiation Generating Devices



Radiation generating devices are machines that typically do not contain radioactive materials or sources but create fields of wave-type radiation when operated. When the machine is de-energized, there is no radiation field.

Wave or Ray penetrating radiation emitted from radiation generating devices is called **X-radiation**, or **X-rays.** Types of radiation generating devices at BNL include:

- Diagnostic X-ray machines used at the Occupational Medicine Clinic
- Therapeutic X-ray machines used at the Radiation Therapy Facility
- Analytic X-ray machines used for research of atomic structure

Radiation produced by these machines penetrates materials, but does ***not*** make them radioactive.

There are much larger radiation producing machines such as the RHIC, (Relativistic Heavy Ion Collider) ATR, (Alternating Gradient Synchrotron to the Relativistic Heavy Ion Collider) AGS, and the LINAC, (Brookhaven Linear Accelerator). When operating, these machines produce a variety of high-energy radiation that has adequate strength to create radioactive material.

Personnel assigned to operate these devices must be trained in their safe operation before allowing them to use the machine as part of their job.

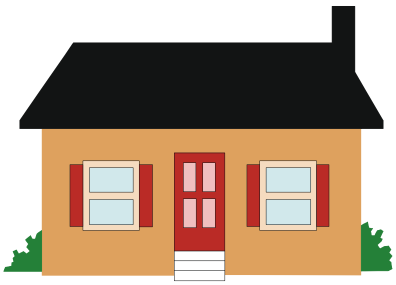
Identify sources of occupational and non-occupational radiation dose

Exposure to radiation is generally discussed in two broad categories, radiation doses to the general public (non-occupational) and radiation dose received while performing work at your place of employment (occupational).

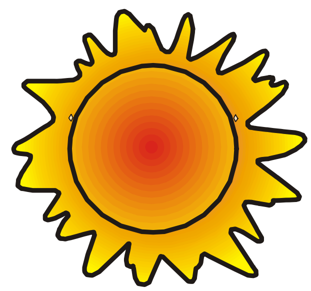
Sources of non-occupational radiation dose

Within the category of non-occupational radiation dose, sources of radiation can be further divided into natural background or man-made.

Man has been exposed to natural background sources of radiation throughout his history. The major natural background sources include:



Radon gas; comes from the radioactive decay of uranium which is naturally present in the soil. The radon gas can migrate through the soil and into the air. The decay products of radon attach to dust particles and may be inhaled. The decay products of radon will then deliver a dose to the tissue of the lungs. On Long Island, the dose from radon is much lower than the national average because there is very little uranium/thorium in the soil. The average effective dose equivalent from radon in the United States is **230 mrem/year**.

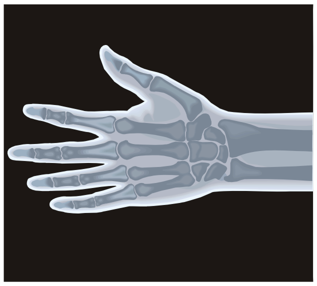


Cosmic radiation; which comes from outer space and our own sun. The earth's atmosphere and magnetic field affects the levels of cosmic radiation which reaches the surface, so your dose from cosmic radiation is determined by where you live. For example, the dose rate on Long Island (at sea level) is about 24 mrem/ year, while the dose rate in Denver, Colorado is 50 mrem/year. The average dose from cosmic radiation in the U.S. is **30 mrem/year**.

Terrestrial sources; exist because a number of materials have remained radioactive since the formation of the earth. These natural radioactive materials are found in the ground, rocks and building materials. Some of the contributors to terrestrial sources are the natural radioactive elements radium, uranium and thorium. In fact, there are some areas in Brazil and India where the natural background radiation levels reach 3,000 mrem/year. The average dose from terrestrial sources in the United States is **30 mrem/year**.

Internal source; our bodies contain various, naturally occurring radioactive elements, and potassium (^{40}K) is one of the major contributors to your internal dose. The average dose from internal sources in the United States is about **30 mrem/year**.

The major man-made sources that contribute to the radiation dose to the general public include:



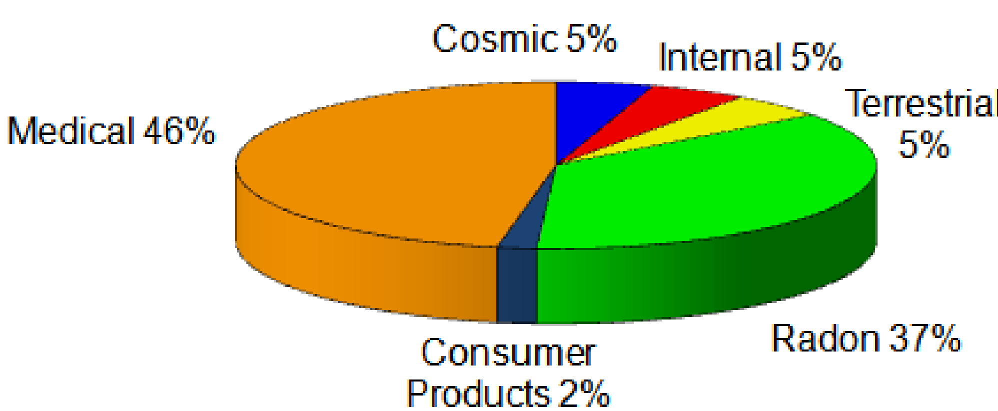
Medical/dental sources; this includes diagnostic (such as chest or dental x-ray) and therapeutic uses of radiation (such as radiation therapy for tumors). Because medical and dental doses are so individualized, your dose may vary from a few millirem to several thousand mrem. The average dose from medical and dental sources in the United States is about **285 mrem/year**.

Consumer products; some consumer products contain small amounts of radioactive material. Examples include certain ceramic dishes (usually with an orange glaze), some luminous dial watches, and some smoke detectors. These consumer products account for a very minor contribution to the background dose. The average dose from consumer products in the United States is about **10 mrem/year**.

Other; this category includes radiation doses from fallout caused by bomb testing and accidents such as Chernobyl. The average dose from other sources in the United States is about **5 mrem/year**.

Overall, the average radiation dose to a member of the general population in the United States, from natural background and artificial sources, is about **620 mrem/year**. On Long Island, this average dose is significantly lower because of the low levels of radon.

U.S. AVERAGE ANNUAL BACKGROUND RADIATION SOURCES



Sources of occupational radiation dose

The other broad category of radiation sources is occupational. Occupational dose is that which is received while working at your job. This includes any dose from previous employers or the military. Occupational dose does not include doses received from background radiation, medical treatment or therapy.

Identify the primary risk associated with receiving ionizing radiation dose

We know that receiving very large doses of ionizing radiation somewhere between 50,000 and 100,000 millirem in a short period of time may cause some people to experience nausea, vomiting, and diarrhea, which are all primary symptoms of radiation sickness. People receiving doses exceeding 100,000 millirem will experience more severe sickness and some people may even die from the exposure. Surviving a radiation dose above 1,000,000 millirem is very unlikely (although survival is more likely with medical intervention).

Through scientific research, ionizing radiation dose has been identified as a potential cause of cancer in humans. Based primarily on studies made of the survivors of the atomic bomb blasts in Hiroshima and Nagasaki, estimates indicate that of the 91,230 survivors, 6,270 of them have died from cancer. If we research cancer-related deaths in a similar sized population of people not exposed to an atomic bomb blast, we would expect only 6,039 cases. In other words, the radiation received by the atomic bomb blast may have contributed to an additional 231 cancer related deaths.

The National Academy of Sciences, National Council on Radiation Protection and Measurement, and the International Commission on Radiation Protection estimate the average risk (to an adult) of fatal cancer from radiation in his/her lifetime is **4 in 10,000** per 1,000 millirem of radiation dose. In other words, an additional 4 deaths may occur due to radiation-induced cancers in a group of 10,000 people, if each of them receives a 1,000 millirem dose.

Compare risks of receiving ionizing radiation dose to risks encountered in everyday life

To put the risk of radiation-induced cancer into perspective, let's compare it with the risk you and I face of dying from cancer in everyday life.

As a member of the general population in the United States you have roughly a 20% chance of dying from cancer from all causes combined. In other words, each of us has a one in five chance of dying from a cancer-related illness.

By receiving an additional 1,000-millirem radiation dose from an occupational source, an individual's risk of developing a fatal cancer would increase from 20% to 20.04%. This increased risk is the same risk we face daily of being murdered on the street, and well below the risk of dying from an accidental death, such as a car accident or falling off a cliff.

Although the risk is very low, we continuously strive to reduce the potential for any radiation-induced injury. Brookhaven National Laboratory's radiation safety policies require us to justify the need to receive any occupational radiation dose and ensure that the benefit outweighs the risk. This "no-threshold" concept is the basis for our **ALARA** (As Low As Reasonably Achievable) policy.

Describe how to reduce your exposure by applying the ALARA concepts of using time, distance and shielding to reduce radiation dose

Minimize Time *of Exposure to Radiation*

The main goal of the ALARA program is to reduce the radiation doses to a level that is As Low As Reasonably Achievable. Reducing the amount of time in a radiation area or field lowers the dose you receive. One of the keys in minimizing your time in a radiation area is to pre-plan the job or experiment. This may include:

1. Using mock-ups to prove equipment or procedures, or to gain proficiency at the task to be done.
2. Taking the best route to the job site. The shortest route may not be the best. Know the locations of higher and lower radiation level areas.
3. Never loitering in an area controlled for radiological purposes.
4. Working efficiently and quickly. Eliminating rework by doing the job right the first time.
5. Performing preparatory work and parts assembly outside the area.

Increasing Distance *from the Radiation Source*

Use the protection offered by distance from the source of radiation whenever possible. For many sources, radiation levels decrease rapidly as distance increases. For example, if the distance from a point source is doubled, the radiation level is only one-quarter as strong. Therefore, if a point source measures 360 mrem from a distance of one foot, it will measure only 90 mrem from two feet away. From three feet away, the radiation level would drop to only 40 mrem.

Some methods to increase the distance from the radiation source include:

1. During work delays, moving to lower dose rate areas.
2. Using long handled tools, mechanical arms, and robotics to avoid higher dose rate areas.
3. Knowing the radiological conditions of the area you are entering.
4. If possible, moving the item being worked on away from the source of radiation, or moving the source of radiation away from the work area.
5. Using mirrors or closed circuit TV to monitor the job site.

***Use Shielding** to Lower the Dose Rate*

Shielding reduces the amount of radiation dose to the worker. Some suggestions:

- Select the proper materials to shield a worker from the different types of radiation.
- Take advantage of permanent shielding, such as equipment or existing structures.
- Position yourself so that shielding is between you and the source.
- Wear safety glasses/goggles to protect the eyes from beta radiation.
- When applicable, install temporary shielding when required by procedure or the Radiological Work Permit (RWP).

Temporary shielding is required to be marked or labeled with the statement: "**Temporary Shielding - Do Not Remove Without Permission**."

Interlocks

In addition to individual workers using time, distance and shielding, Brookhaven National Laboratory embraces the ALARA concept with its design and use of engineering solutions such as interlock systems. Some of the basic interlock systems include interlocks that prevent access, turn off the source of radiation, and shield the source of radiation.

Identify the annual occupational radiation dose that a GERT trained worker may receive

The information contained within this training study guide is commensurate with the radiological risks involved in the limited tasks that you are authorized to perform. You, as a GERT trained worker, may only access areas posted as **Controlled Areas, Controlled Areas TLD Required** or **Radioactive Material Areas within Controlled Areas,** and are allowed to handle only limited quantities of radioactive materials. For this reason, you are unlikely to receive any significant radiation dose while performing your duties.

Individuals trained to the GERT level who are not issued personal dosimetry (a device used to measure radiation dose) are not expected to receive in excess of 100 mrem in a year. This is controlled by radiological postings that specify the need for personal dosimetry. Any area exceeding 50 microrem/hr with the potential of the occupational worker to receive in excess of 100 mrem in a year will be posted with personal dosimetry required for entry. A microrem is the dose equivalent term that equals 1/1000 mrem and is abbreviated **μrem** .

If a GERT trained person does not enter any area requiring personal dosimetry, that individual will likely spend the entire year (2,000 hours) in areas with less than 50 μrem/hr or in areas where the annual dose will be less than 100 mrem.

$$<50\ \mu\text{rem/hr} \times 2000\ \text{hours} = <100\ \text{mrem}$$

GERT trained individuals utilizing personal dosimetry may encounter radiation dose rates in excess of 50 μrem/hr. Because of this, there is a small potential for cumulative radiation doses to exceed 100 mrem in a year. Monthly dosimetry readings will be used to track the individual's cumulative dose to ensure his/her annual dose is maintained ALARA.
Annual effective whole body dose limits and Administrative Control Levels (ACLs) for Radiation Workers have been established for routine conditions. ACLs ensure that employees do not exceed established limits.

DOE Limit Whole Body Limit	5000 mrem
DOE Administrative Control Level	2000 mrem
BNL Administrative Control Level	1250 mrem

Describe BNL's policy regarding a woman's right to reduce her exposure in order to minimize potential adverse effects associated with prenatal radiation dose

Because the embryo/fetus is more susceptible to injury from radiation (compared to mature, developed cells), DOE and BNL have a policy which permits the worker to declare that she is pregnant or intends to start a biological family and have the dose received by she and her developing fetus restricted. The undeclared pregnant worker has no dose restrictions.

Any woman working in areas where she could be exposed to radiation or radioactive materials has the option of voluntarily notifying her supervisor in writing that she desires to reduce her radiation dose to protect the embryo/fetus. Upon receipt of the written notification, she is classified as a "**declared pregnant worker**." Because of the woman's right to privacy, no action can be taken until the formal notification is received.

The policy of BNL is to offer the declared pregnant worker two options:

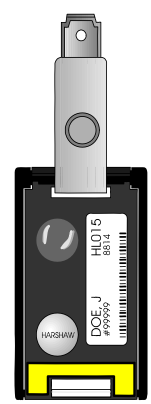
The first option is to identify a mutually agreeable assignment without loss of pay or promotional opportunity, such that further occupational radiation exposure is unlikely. This is frequently referred to as the **zero-dose option**.

The second option, referred to as the **low-dose option**, allows the declared pregnant worker to continue working in radiologically controlled areas with the DOE dose limit to the developing embryo or fetus of **500** mrem throughout the gestation period. For this class of declared pregnant worker, Brookhaven National Laboratory has established an administrative control level of **350** mrem throughout the gestation period to be received at a maximum rate of **40** millirem/month.

Whatever option the declared pregnant worker chooses, all benefits of her work (pay, promotions, etc.) will not be affected. Furthermore, a declared pregnant worker may revoke her declaration at any time during the pregnancy. At such time the normal radiation dose limits and Administrative Control Levels apply. The declared pregnant worker must undeclare their pregnancy in writing in order to return to normal occupational worker status. See the SBMS Subject Area Pregnancy, Declaration of for further details.

State the purpose of personal dosimetry

Whole Body Thermoluminescent Dosimeter Badge (TLD Badge)



In early 1996, Brookhaven National Laboratory began using the Thermoluminescent Dosimeter, called the TLD. The TLD is considered "State of the Art" in personnel dosimetry. This type of dosimeter is less sensitive to adverse physical and environmental effects and can be reused after processing. Keep in mind that the TLD offers *no protection* from radiation; it only *monitors* your exposure to beta, gamma, and neutron radiation. TLDs are exchanged on a monthly basis and processed on-site. This processing usually takes a few weeks, unless there is a need for a quicker turn around in an individual case.

There are many rules and requirements regarding the use of a TLD, since the TLD is the basis for the legal record of your occupational dose. These requirements include:

1. TLDs are worn when required by signs or postings, Radiological Work Permits, and when directed by Facility Support Representatives or Facility Support Technicians.

2. TLDs must be worn on the front of the torso, between the waist and the neck unless directed otherwise by the Facility Support Technician, the Facility Support Representative or their designee. The best location is the center of the chest with the color bar of the badge facing away from the body.

3. All TLD's shall be stored in low background areas and protected from adverse environments (excessive heat, moisture, etc.) when not in use. The TLD should be placed on the designated badge board at the close of business. If the TLD is taken home by mistake, return it the next working day.

4. TLDs at BNL are usually exchanged the first week of each month.

   a. If you leave BNL (employment is terminated or your guest appointment has expired), turn your TLD in to the Facility Support Representative and cancel your TLD service. It is also permissible to return your TLD directly to the Personnel Monitoring Group.

   b. If you will not be here for the monthly exchange (e.g., business trip or vacation), leave your TLD on the badge board and it will be exchanged with the others.

   c. If you are wearing your TLD during the monthly exchange, see your Facility Support Representative the next working day to exchange the badge.

   d. Personnel that fail to return a TLD may be restricted from continued radiological work.

5. TLDs issued at BNL should not be worn at another facility and dosimetry issued from another facility should not be worn at BNL. The concern is that your dose should be recorded only once for any time period monitored. If you have any questions or concerns, contact your Facility Support Representative.

6. Never wear another worker's TLD or allow someone else to wear your TLD. Because the TLD is issued to monitor an individual's monthly dose, either of these practices would invalidate the dose recorded on the TLD.

7. Persons successfully completing this training may be issued a TLD. Trained personnel receive a TLD with a blue or yellow band on the front of the badge. When TLDs are collected for monthly processing, the used badge is exchanged with a new badge. To aid in determining whether all TLDs have been exchanged, the new TLD will have a different colored band. If you should notice that your TLD has a different colored band than most others, contact your Facility Support Representative and have your badge exchanged.

8. A red band on the front of the badge identifies visitor TLDs. Individuals wearing them require escort in radiologically controlled areas. If you encounter an unescorted visitor within a Controlled Area requiring dosimetry, immediately showthem out of the area. DO NOT PROVIDE ESCORT FOR THEM UNLESS YOU HAVE BEEN SPECIFICALLY ASSIGNED TO DO SO BY THE RADIOLOGICAL CONTROL DIVISION.

9. Never open or tamper with the TLD. If you suspect the TLD has been misused or damaged in any way, (such as having been put through the laundry cycle or been worn during a medical x-ray), you should notify your Facility Support Representative who will issue a new TLD badge.

10. The TLD label is not to be written on or defaced in any way. TLD users may affix a small label to the backside of the case with their name written on it.

11. Individuals working in areas controlled for radiological purposes should take specific actions if their TLD is lost, damaged, or contaminated. These actions include placing your work activities in a safe condition, immediately exiting the area. Notify your Facility Support Representative or Facilities Support Technician, as well as your supervisor, of the situation. A service charge is assessed for a lost TLD.

12. TLD results are your legal records of dose. Report any lost badge immediately. If you find a TLD, turn it in to your Facility Support Representative. If you lose your badge or fail to return it, an estimated dose is assigned to you based on your work activities and radiological conditions of your work sites. An investigation is required to determine your estimated dose, which costs BNL time and money and is less accurate than reading the actual TLD.

13. TLD service MUST be terminated for each individual when they no longer need the service. Upon termination the TLDs will be recycled into the BNL system and a final dose status “termination report” will be generated, saved on file and submitted to the individual for their personal records.

State the actions you should take if you have had a stress test or other medical test that may impact your occupational radiation dosimetry

A common test for evaluating the condition of the human heart is the Thallium Stress Test, which injects a radioactive dye into the bloodstream. For several days following the test, there remains enough radioactive material in the body to affect the radiation dose being recorded on your TLD. This could also occur if you have had radioactive “seeds” implanted for radiotherapy.

It is important that you notify your Facility Support Representative of any medical treatment or diagnostic procedures that you received which involved the use of radioactive materials being placed in your body such as radioactive Thallium or seeds. Your TLD will be confiscated until the Radiological Control Division determines that there will be no influence. Otherwise, your TLD report for that month would incorrectly indicate that you received an occupational dose instead of a nonoccupational medical dose.

Identify how to obtain personal dosimetry records and reports

Approximately 3,000 TLDs are processed each month. The Personnel Monitoring Group maintains the data collected from this processing.

The Personnel Monitoring Group compiles and distributes personalized dose reports annually to all affected BNL employees.

If you require a record of your exposure after terminating employment at BNL, you must provide the Personnel Monitoring Group with a written request. A report will be sent to you within 90 days.

You may, if desired, request more frequent reports or special reports by submitting a written request to the Personnel Monitoring Group. A written estimate of your exposure may also be requested from Personnel Monitoring Group at termination.

Identify the authorities granted to GERT trained individuals concerning access to radiologically controlled areas and control of radioactive materials

Postings are used to alert personnel of a potential or known radiological condition and to aid them in minimizing exposures and preventing the spread of contamination. Let's discuss the different on-site areas and whether you will be permitted to enter that area upon completion of this training (GERT).

Controlled Area

A Controlled Area is established to protect individuals from exposure to radiation and or radioactive materials. There are no significant radiation hazards in a Controlled Area. These areas usually surround other radiological areas that pose a risk and as such, require higher levels of control.

GERT training also allows you to handle low level, sealed radioactive sources. These are primarily small sources used for instrument response checks. You are **ONLY** allowed to access Radioactive Material Areas that are within Controlled Areas to obtain and store these radioactive sources.

Be alert while working in Controlled Areas. Read all radiological posting very carefully to ensure that you do not enter other posted areas unless trained and authorized or accompanied by a trained escort.

Identify the purpose and scope of the BNL policy regarding your responsibility and authority for stopping non-compliant radiological work

Stop Work for Radiological Activities

Radiological work is among the most important activities that we conduct at BNL. Management expectations for performing radiological work safely and fully compliant with regulations have been clearly stated by the Laboratory Director. The Director has empowered each and every individual who has received radiological safety training with the authority and responsibility to stop non-compliant or unsafe radiological work immediately. This policy is commonly known as the Radiological Stop Work Policy.

Who Can Issue a Radiological Stop Work Order?

Any employee, guest, or visitor that has received formal training in the contents of the procedure through the successful completion of GERT or RadWorker 1 training can issue a Radiological Stop Work Order.

If a Radiological Stop Work Order is issued to you, you MUST:

- Stop working on the affected activity as soon as and as safely as possible.
- Place the workspace in a safe condition.
- Report to your supervisor and explain why the Radiological Stop Work Order was issued at your job.

Work is not to resume until safety reviews are performed and your Department chairperson or equivalent line manager, and the Manager of the Radiological Controls Division, authorizes work to restart.

When should you stop radiological work?

If you don't feel that your own work is safe or if you are uncertain about BNL requirements, stop the work and discuss the issue with your supervisor or ESH Coordinator. If you believe the work of others is unsafe or not compliant, express your concern and advise them of the proper practice. If you believe that a serious deviation from BNL radiological requirements is occurring, immediately issue a Radiological Stop-Work Order. A serious deviation from a radiological requirement could lead to fines and penalties and result in a facility shutdown. If someone refuses to Stop-Work, you should immediately bring this to the attention of your Supervisor or ESH Coordinator.

Identify the purpose of BNL's Radiological Awareness Report program

Excellence in Radiological Controls is not merely having a good program; it also involves a continued desire to seek improvements throughout all levels of the program. To aid in continuing program improvement, Brookhaven National Laboratory has established the Radiological Awareness Program, commonly referred to as the RAR Program.

You, as a GERT trained worker play a vital role in the success of this program. The RAR program is dependent on information gathered from radiological control practices in the field. It is the role of the Radworker and GERT trained worker to provide this information.

This program is your avenue of communication between daily work activities and management concerning deficiencies in the administration of our Radiological Controls Program. In turn, with this information, management will be able to better identify program weaknesses and shortcomings, specify corrective actions and develop action plans for improvement.

If you have any questions regarding the RAR Program you may contact the RAR Coordinator at extension 4408.

To communicate your concerns or comments:

- Obtain RAR Form from the Environmental Safety and Health Coordinator or Facility Support Representative
- Submit the completed RAR form to your Supervisor

Your supervisor will submit to the RAR Coordinator

Identify the purpose and scope of the Price-Anderson Amendments Act (PAAA) relating to the potential impact of non-compliant radiological work

What is the Price-Anderson Amendments Act?

The Price-Anderson Amendments Act is a Congressional Act, designed to protect the health and safety of workers and the general public. The Act specifies that the Department of Energy (DOE) will insure its primary contractors (Brookhaven Science Associates) against liability arising from nuclear or radiological accidents or incidents resulting from activities performed within the scope of the BSA contract.

DOE has put nuclear and radiological safety requirements into federal regulations. These regulations are contained within a document called the Code of Federal Regulations. (10 CFR 835).

This Part of the Code of Federal Regulations applies to three (3) categories:

- Quality Assurance applied to all radiological activities
- Occupational Radiation Protection
- Procedural Rules and Enforcement Policies

To Whom Does This Apply?

PAAA applies to all DOE contractors such as Brookhaven Science Associates (BSA) as well as sub-contractors and suppliers to Brookhaven National Laboratory. This means that all employees, guests, contractors and outside suppliers are responsible to adhere to these regulations.

It is each and everyone's obligation and responsibility to identify, report and correct any known non-compliance issue. If these requirements are not met the primary contractor (BSA), sub-contractor, supplier and/or responsible individual may be liable to civil and/or criminal penalties and/or fines up to $150,000 / day.

There is also an Occurrence Reporting and Processing System (ORPS) on the SBMS that states that all staff is required to appropriately report abnormal events or conditions that they perceive may:

- Endanger the health and safety of staff or the public,
- Have an adverse effect on the environment,
- Seriously impact the operations and intended purpose of BNL facilities,
- Result in loss or damage of property, or
- Adversely affect national security or the security interest of DOE or BNL

The event or condition must be categorized within two (2) hours of discovery. Therefore it is very important to notify your supervisor as soon as practicable if you feel that a situation may require an ORPS report.