



# Safety Culture At the University of Virginia Policy Statement

It is an expectation of the Commonwealth of Virginia's Radioactive Materials Program and the U.S. Nuclear Regulatory Commission that:

**Individuals and organizations utilizing radioactive material establish and maintain a positive safety culture commensurate with the safety and security significance of their activities and the nature and complexity of their organizations and functions.**

*"The University of Virginia regards its moral, legal and economic responsibility for providing a safe and secure working environment for its students, faculty and staff to be a high priority. All University activities shall be conducted using reasonable precautions to protect faculty, staff, students, the public, and the environment so as to minimize dangers to life, safety and property." \**

\* From the EHS website-- This policy was developed by a consensus of HS administrators and approved by the Vice Presidential Planning Group 2/14/1984.

A Culture of Safety establishes effective processes for problem identification and resolution. These processes are essential to ensuring the safe use of radioactive material and operation of facilities. It contains attributes of the work environment that encourage individuals to look for and articulate safety concerns and effectively and efficiently address and resolve the concerns raised.

**"Safety Culture is defined as the core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals to ensure protection of people and the environment." Certain personal and organizational traits are present in a positive safety culture. A trait is a pattern of thinking, feeling, and behaving that emphasizes safety.**

**NOTE:** Policy statements are not regulations or requirements. The safety culture policy statement is an expectation; it does not contain requirements that must be implemented. So, in this regard Licensees have the primary responsibility for safety culture at their facilities. Licensees are to do what they deem appropriate for the scope of their program. Safety culture must be tailored to the organization. It is up to the organization to determine how to apply the policy statement.

The University strives to ensure that the following TRAITS of a Positive Safety Culture are implemented:

**1. Leadership Safety Values and Actions: Leaders demonstrate a commitment to safety in their decisions and behaviors.**

For programs of large size and broad scope, State and NRC regulations require the establishment of an administrative structure to supervise the possession and use of radiation sources within the University.

This structure is independent of other administrative organizations within the University. A component of this structure, the Radiation Safety Committee (RSC), is charged with ensuring that licensed material will be used safely and in accordance with applicable regulations and licenses. The Radiation Safety Officer is a member of the Radiation Safety Committee and reports directly to the Vice President for Research.

The University of Virginia's RSC members are appointed by the President of the University. The Committee is comprised of representatives of departments and divisions of the University that use or have management oversight of the use of radioactive material and radiation producing equipment. The Committee meets at least once each calendar quarter to review issues of importance to radiation safety.

The RSC delegates the operational control over radioactive material and radiation producing equipment (RPE) to the Radiation Safety Officer (RSO) and the Environmental Health and Safety Office. All issues regarding radiation safety are handled within this office and organizational structure.

The University maintains a Radiation Safety Program. The radiation safety program is managed by the Radiation Safety Officer who is a program manager in the Environmental Health & Safety Office. The University Radiation Safety Officer (RSO) has overall responsibility for ensuring that radioactive material is used safely at the University. The Environmental Health and Safety Office is responsible for the implementation of a radiation safety program at the University of Virginia. One of the goals of the radiation safety program is to provide for the safety of the user and the environment.

Other EHS programs include Chemical Safety, Biosafety, Fire Safety, Occupational Safety, Asbestos & Lead Safety, Ergonomics, Industrial Hygiene, Hazardous Waste Management.

The radiation safety program's primary objectives are to protect personnel and the general public from unwarranted radiation exposure, protect the environment by minimizing release of radioactive material in effluents, and ensure compliance with all applicable State and Federal regulations and to monitor and advise in the safe use of radioactive materials and radiation producing equipment at the University of Virginia. The radiation safety program is responsible for virtually all operational aspects of radiation safety at the University of Virginia. These responsibilities include:

- training personnel in the safe use of radioactive material
- administering the personnel and environmental dosimetry program
- procurement of all radioactive material
- shipment and receipt of all radioactive material for the University
- collecting, packaging, and disposing of all radioactive waste
- performing routine laboratory inspections
- commissioning and decommissioning of all radioactive material use areas
- emergency response

The Vice President for Research meets regularly with the Radiation Safety Officer (Director of Environmental Health & Safety)

Principal Investigators for Radioactive Material Use are considered leaders in their respective laboratories. They are expected to ensure that radioactive materials are used safely under their authorization and supervision.

All radioactive material users are trained, SOPs are expected to be implemented and adhered to and problems reported to EHS.

Working relationships are maintained with University Police, Executive VP and Director of Emergency Preparedness in matters of safety and security.

Management has established incentives and sanctions to re-inforce desired positive radiation safety behaviors by continual clear, communication of expectations.

Resources are effectively allocated by management to address safety and schedule. Protecting workers, the public, and the environment are the top priorities whenever work activities are planned and performed.

## **2. Problem Identification and Resolution: Issues potentially impacting safety are promptly identified, fully evaluated, and promptly addressed and corrected commensurate with their significance.**

- EHS assists individuals, departments and committees to achieve compliance with University, local, state and federal policies and regulations, as efficiently as possible.
- EHS serves as the University's liaison with external regulatory agencies.
- EHS monitors University compliance through audit, program development, education, accident investigation, and consultation.
- Routine audits are performed in all radioactive material use areas. Follow-up surveys are performed to ensure that problems are corrected.
- EHS communicates with other institutions and regulatory agencies regarding issues identified as safety issues at other institutions. Self-evaluation is conducted to determine if these could be potential safety issues at UVA.
- The University has established a Reporting Policy (SEC UVa Policy ID: SEC-031 Required Reporting of "Events" Involving Radiation Exposure or Radioactive Material) which requires prompt reporting of safety significant events.
- EHS communicates with local law enforcement agencies to alert authorities to unusual behavior or incidents involving hazardous materials which could indicate a larger potential security threat.
- EHS maintains emergency response capabilities to promptly respond to and address emergencies and safety concerns.

### **3. Personal Accountability; All individuals take personal responsibility for safety.**

A Radiation Safety Guide for all radioactive material users is maintained by the Radiation Safety Program. All radioactive material users are provided with training that familiarizes the user with the information in the Guide. The Radiation Safety Guide describes the radiation protection practices, procedures and policies applicable to the safe use of radioactive material at the University of Virginia (UVa).

*Excerpt from the Radiation Safety Guide:*

“The improper or unsafe use of radiation emitting sources or equipment has the potential to create a health hazard for not only the user but the general public in the environment surrounding the area of use. The licenses that are issued to UVA by the Nuclear Regulatory Commission and the State of Virginia specify what material may be used and how it must be handled. If you work with radioactive material you must abide by the safe work practices that are taught during training or are described in the Guide and other policies that are issued by the Environmental Health & Safety Office (EHS).”

“**Radiation Safety is the responsibility of all users.** Radiation safety policies are established for everyone’s benefit and require everyone’s support. All personnel using radiation sources are expected to become familiar with UVA radiation safety policies and procedures and to conduct their operations in accordance with them.”

We encourage and mentor the development of a robust safety culture, rather than to attempt to impose and enforce specific behaviors appropriate to radiation safety culture.

- EHS employees are expected to perform their jobs safely, help others perform their jobs safely, keep up with all regulatory requirements and develop programs that keep the university in compliance.
- During routine audits, working conditions are reviewed and workers are reminded of their responsibility to report unsafe work practices.
- Workers take responsibility for maintaining required certifications, medical evaluations and ensuring their safety training is up to date.
- Individuals are encouraged to contact EHS regarding spills, improperly operating equipment, the need for additional training, or other safety concerns. EHS strives to maintain an attitude and environment of trust that encourages individuals to contact the office with concerns, no matter how large or small.
- Each PI is required to develop and submit a security plan for their individual laboratory space.

### **4. Work Processes: The process of planning and controlling work activities is implemented so that safety is maintained.**

- Processes and procedures are standardized, implemented, maintained, and communicated.
- Personnel, equipment, tools, procedures, and other resources needed to ensure safety and security are made available.

- When new procedures or processes are proposed, safety staff will meet with the researcher to review the proposed procedure, examine potential safety hazards associated with the use and propose changes necessary to facilities or processes and any necessary special handling equipment before the procedure may be conducted. Training for the new procedure is provided to workers and dry runs are employed to test procedures prior to utilizing the radioactive material in the procedure.
- Audits are performed to ensure SOPs are utilized and implemented.
- Radioactive material acquisition and disposition is centrally controlled to ensure radioactive materials are utilized safely by authorized individuals and properly disposed of.
- Other departments such as Facilities Management are utilized to coordinate activities requiring special equipment or modification of equipment necessary for safe use, containment or movement of radioactive material.
- Bioassay programs are implemented where ingestion or inhalation is a potential hazard.
- A Laboratory Commissioning and Decommissioning program is maintained to ensure that facilities are correctly prepared to handle radioactive material and then completely decontaminated once use ceases.
- An ALARA program is in place to maintain doses **As Low As Reasonably Achievable**. Doses exceeding the ALARA levels are investigated and efforts are made to reduce exposures where possible.

## **5. Continuous Learning: Opportunities to learn about ways to ensure safety are sought and implemented.**

- Safety staff members communicate with other institutions through list servers and publications and share “lessons learned” with other staff members and workers.
- The University offers all staff educational benefits which may be used for professional or personal enrichment. Staff are encouraged to take advantage of this benefit and to attend training courses
- Professional journals are circulated to and shared with radiation safety staff.
- Weekly radiation safety staff meetings are conducted to share information, alert other staff members to safety issues and provide training or refresher training on select topics.
- The Internet is used to research information on current safety issues.
- EHS provides in-house training for use of safety equipment, safe handling of hazmat, etc.
- The Radiation Safety group collaborates with other safety groups within EHS to address radiation safety issues involving secondary hazards.
- Utilize the Medical Center Net Learning online training system to complete safety training relevant to use of radioactive materials in the patient care environment.
- Provide opportunity for staff to complete required refresher training and certifications, e.g. Hazwoper, DOT, etc.)

**6. Environment for Raising Concerns: A safety conscious work environment is maintained where personnel feel free to raise safety concerns without fear of retaliation, intimidation, harassment, or discrimination.**

The University maintains a reporting policy: UVa Policy ID: SEC-031 [Required Reporting of "Events" Involving Radiation Exposure or Radioactive Material](#)

In addition, the following are expectations for all radiation workers:

- It is everyone's responsibility to promptly raise concerns and retaliation for doing so will not be tolerated.
- Employees are allowed and encouraged to use work hours to report concerns.
- There should be clear communication of the concern and confirmation of understanding with the person receiving the concern.
- Every employee should demonstrate respect for others who identify concerns.
- Avoid actions against personnel who self-report errors – consider discussing self-identification and prompt, effective corrective actions as mitigating circumstances.
- Management behavior should foster employee confidence in raising concerns.
- Follow-up should be conducted to ensure the concern is adequately addressed.
- Evaluation and resolution is completed in a timely manner.
- There are sanctions for retaliation by supervisors, managers, or peers.

Information on the various avenues available for raising concerns (including an alternative process to Line Management) and the Rights of employees to raise concerns externally may be found at the following locations:

Virginia State "Notice to Employees" is posted in all radioactive material work areas.

UVA Policy: Preventing and Addressing Discrimination and Harassment, Date: 04/08/08, Policy ID: HRM-009 Status: Final

UVA Policy: Preventing and Addressing Retaliation Date: 05/27/08 Policy ID: HRM-010 Status: Final

The Commonwealth of Virginia's Whistle Blower Protection Act (WBPA) was established in 2009 and amended in 2014. Information on the WBPA may be found at <https://osig.virginia.gov/program-areas/citizen-services/whistle-blower-fund/>

University of Virginia FEAP (Faculty and Employee Assistance Program)  
<http://www.healthsystem.virginia.edu/pub/feap/home.html>

University of Virginia Ombudsman <http://www.virginia.edu/ombudsman/>

## **7. Effective Safety Communication: Communications maintain a focus on safety.**

Environmental Health & Safety (EHS) is a resource that is available to every member of the University community to help make the living, working, and learning environment safe, by promoting prudent work practices through effective education and consultation.

UVa Policies applicable to Radiation Safety

- UVa Policy ID: VPRS-001 [Prohibition of Food and Drink in Research Laboratories](#)
- UVa Policy ID: SEC-010 [Radiation Protection during Pregnancy](#)
- UVa Policy ID: SEC-009 [Utilization of Radioactive Materials](#)

Opportunities for Safety Communication are taken advantage of continually through the following activities; Radioactive waste pickup, Quarterly laboratory audits, In person in-services and training, Universal door signs Labeling and posting of equipment, laboratory commissioning and decommissioning, Delivery and collection of dosimeters and monthly EHS communication meetings.

- During all visits to radioactive material use areas, staff is expected to observe and communicate safety issues with workers.
- Training programs are developed and tailored for specific groups
- The Radiation Safety Program maintains an active laboratory follow-up survey program to ensure problems are addressed in a timely manner
- The Medical Centre maintains a QR reporting system through Be Safe Events

## **8. Respectful Work Environment: Trust and respect permeate the organization.**

Individuals are encouraged to call our office with a problem, large or small. EHS listens to and respects all communication regarding safety concerns or safety issues. We will address concerns, avoiding taking action against the caller or citation for a violation.

EHS will always attempt to promptly address customer needs.

When conducting audits or dealing with laboratory problems, we will attempt to explain the problem and how to correct it without being punitive.

When radiation safety staff work in a team with other specialty staff (e.g. Y-90 microsphere delivery) they will foster an environment of mutual respect for each specialty's goal in order to accomplish the safe administration of radioactive material to the patient.

Regular radiation safety staff meetings are held that include the entire staff where staff feel empowered to raise safety issues, suggest and develop new procedures or modify existing ones.

We strive to maintain an open door policy that allows individuals to discuss issues with coworkers or management.

The University of Virginia demonstrates a Commitment to a Caring Community of Dignity and Respect through its Respect@UVA initiative.

## **9. Questioning Attitude: Individuals avoid complacency and continuously challenge existing conditions and activities in order to identify discrepancies that might result in error or inappropriate action.**

The Radiation Safety staff conducts weekly meetings. At these meetings, staff is encouraged to raise concerns and suggested or necessary changes to SOPs.

In all training sessions provided to users, the importance of constant vigilance is stressed.

Any discrepancies noted in procurement, inventory, waste, etc. is immediately addressed. Most programs require independent cross-check by another individual to identify discrepancies.

### **The University Health System promotes a Culture of Safety through its ‘Be Safe’ initiative.**

**Be Safe** is the systematic application of the scientific method to improve the safety of our patients and workforce through real-time problem solving. Its goal is to deliver care with no harm and ensure that our patients and employees are healthier than when they arrived at our door.

Be Safe is based on methods developed and proven to be effective by Alcoa’s former Chairman and CEO Paul O’Neill. Rather than a strict set of “rules” to follow, O’Neill believed in a broader strategy of “creating habitual excellence” by teaching employees to *see* and solve problems through direct observation – a technique that everyone can use to understand work and help identify problems.

Here at UVA, Be Safe aims to create a standardized system where everyone in the organization consistently identifies barriers to care and implements system-wide solutions as close to real time as possible. If a problem can’t be solved, a “help chain” will be activated. Each unit will have its own designated help chain consisting of a registered nurse manager, medical director and an improvement expert or clinical nurse specialist who will come together quickly to solve problems in real time. This model of unit-based leadership recognizes that problems are best solved by front-line caregivers – the people actually doing the work – and aims to give units the tools they need to solve problems as they arise rather than having to wait.

UVA’s executive vice president for health affairs sees Be Safe as an opportunity for doing well by doing good. In his words, “Not focusing on the product, but focusing on the people.”

**Be Safe initiative** – Focused on creating an environment of unmatched patient and team member safety. It trains and empowers front-line staff to identify – or call out – safety issues. This triggers a systematic, real-time problem-solving process that quickly involves leadership support and other organizational resources, as needed.

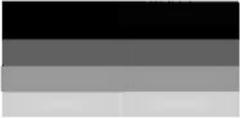
Be Safe is the initiative of Executive Vice President for Health Affairs **Richard P. Shannon, MD**. Dr. Shannon believes that, in addition to improving the wellbeing of patients and team members, Be Safe will help UVA Health System develop the skills, discipline and confidence to become habitually excellent in all that we do. Habitual excellence, he says, is key to becoming a top-decile academic medical center, a goal set forth in our clinical strategic plan.

**Conditions that could potentially signal a weak safety culture include:**

- A management team that stresses productivity over safety.
- A maintenance department that allows backlogs to add up.
- Supervisors who do not provide adequate oversight of safety-significant actions.
- Employees who proceed even when uncertain and do not raise concerns.



HEALTH  
PHYSICS  
SOCIETY



## RADIATION SAFETY CULTURE

### POSITION STATEMENT OF THE HEALTH PHYSICS SOCIETY\*

Adopted: February 2012

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The position of the Health Physics Society is that users of radiation and radioactive material should establish a collective commitment by their managers and employees to emphasize safety over competing goals to ensure protection of people and the environment. The precepts of this position are:

1. Individuals and organizations performing activities with radioactive materials and radiation-producing machines should establish and maintain a positive radiation safety culture commensurate with the safety and security significance of their actions and the nature and complexity of their organizations and functions.
2. The responsibility for establishing a radiation safety culture is a shared responsibility by management and workers. The active participation of both is essential for success.
3. Management should establish incentives and sanctions to reinforce desired positive radiation safety behaviors. Management communications of expectations must be continual and clear.
4. Federal, state, and local regulatory agencies cannot successfully regulate workplace culture. Their role should be to encourage and mentor the development of a robust safety culture, rather than to attempt to impose and enforce specific behaviors appropriate to radiation safety culture.
5. Resources should be effectively allocated by management to address safety and schedule. Protecting workers, the public, and the environment must be the top priorities whenever work activities are planned and performed.
6. The role of radiation protection professionals and their scientific and professional societies is to promote a positive radiation safety culture in the workplace.

The Health Physics Society adopts the definition of Nuclear Safety Culture established by the United States Nuclear Regulatory Commission (U.S. NRC) (NRC 2011) and expanded its applicability to non-NRC regulated sources of radiation such as machine-produced radiation and natural background sources of radiation. The Health Physics Society's definition of radiation safety culture: The Health Physics Society believes that certain individual and organizational traits are present in a positive radiation safety culture. A trait is a pattern of thinking, feeling, and behaving that emphasizes safety, particularly in goal conflict situations, e.g., production versus safety, schedule versus safety, and cost versus safety. There are several manifestations of these traits. In developing their definition, the U.S. NRC solicited inputs from licensees and scientific and professional organizations on which traits are most dominant or important in demonstrating the existence of a positive radiation safety culture. Although the matrix of nine traits shown below is a compilation of those inputs, these nine traits may not be all inclusive. Nevertheless, the matrix of nine traits below represents an excellent cross section of thought from industries and organizations having responsibilities for radiation safety (DOE 2011, NRC 2011).

<b>Leadership Safety Values and Actions</b>	<b>Problem Identification and Resolution</b>	<b>Personal Accountability</b>
Leaders demonstrate a commitment to safety in their decisions and behaviors.	Promptly and fully identify, evaluate, and correct safety issues commensurate with significance.	Take personal responsibility for safety.
<b>Work Processes</b>	<b>Continuous Learning</b>	<b>Environment for Raising Concerns</b>
Plan, implement, and control work activities so that safety is maintained.	Seek out opportunities to learn and implement ways to ensure safety.	Encourage raising safety concerns without fear of retaliation, intimidation, harassment, or discrimination.
<b>Effective Safety Communications</b>	<b>Respectful Work Environment</b>	<b>Questioning Attitude</b>
Maintain a focus on safety.	Permeate trust and respect through the organization.	Avoid complacency and continually challenge existing conditions to identify discrepancies that might result in inappropriate action.

*References*

U.S. Department of Energy. Integrated safety management system guide. DOE G 450.4-1C. Washington, DC: U.S. Department of Energy, Office of Health, Safety and Security; 2011.

U.S. Nuclear Regulatory Commission. Final safety culture statement. NRC-2010-0282. Federal Register 76:34773–34778; 2011.