

# Oklahoma State University Policy and Procedures

<b>INSTITUTIONAL RADIATION SAFETY POLICY</b>	<b>4-0302 RESEARCH</b>  <b>December 2014</b>
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## **PURPOSE**

1.01 The purpose of this policy is to formalize Oklahoma State University's (hereinafter referred to as OSU or the University) obligation to ensure that activities involving any of OSU's "licensed or permitted materials or machines" (as defined below) are conducted safely and in accordance with applicable governmental regulations, laws, limits, and required guidelines. OSU accepts responsibility for ensuring that all activities involving the use of OSU licensed or permitted materials or machines, and the facilities used to conduct such work, are in compliance with all external regulations, laws, and guidelines, as well as applicable University policies.

1.02 The University acknowledges its responsibility to ensure, as much as possible, the safety of employees, students, the local populace, and the environment from activities that are capable of producing deleterious effects upon humans, animals, plants, or the environment. Therefore, OSU will work to ensure that its activities are consistent with these standards including but not limited to providing sufficient resources, staff, committees, programs, safeguards, and controls, as may be necessary.

1.03 The radiation safety program at the University is structured in accordance with the Code of Federal Regulations (CFR) 10 CFR 20, the state of Oklahoma Administrative Code (OAC) title 252, chapter 410, and requirements specified in the materials licenses and permits issued to the University as amended. The University assures its compliance with pertinent government regulations, laws, and required guidelines through a comprehensive management and compliance program administered by the University's Radiation Safety Office within the Office of University Research Compliance and overseen by a Radiation Safety Committee (RSC), when specific licenses and permits require such oversight.

1.04 This policy applies to OSU-Stillwater and OSU-Tulsa.

1.05 This policy covers all radiation producing materials and equipment except x-ray producing machines used strictly for diagnostic or therapeutic purposes and those specifically exempted from regulation.

## **POLICY STATEMENT**

2.01 This policy establishes responsibility for any use or activity involving OSU licensed or permitted materials or machines. Moreover, this policy establishes procedures to ensure that activities involving licensed or permitted materials or machines are conducted safely so as to protect employees, students, the public, and the environment, as well as the public service interests of the University.

2.02 Individuals intending to conduct any activities involving OSU licensed or permitted materials or machines through a University-sponsored, -funded, or -sanctioned activity must comply with all applicable government regulations, laws, and guidelines, as well as OSU policies.

## **DEFINITIONS**

3.01 **Radiation** (ionizing radiation) means alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. Radiation, as used herein, does not include non-ionizing radiation, such as radio- or microwaves, or visible, infrared, or ultraviolet light.

3.02 For the purpose of this policy, **licensed or permitted material or machines** means any source material, special nuclear material, or byproduct material received, possessed, used, transferred or disposed of under a general or specific license issued by the Nuclear Regulatory Commission (NRC) or the Oklahoma Department of Environmental Quality to the University. It also includes any machine or piece of equipment capable of producing ionizing radiation, either directly or incidentally (excluding electron microscopes and other equipment specifically excluded or exempted from regulation), that is received, possessed, used, transferred or disposed of under a general or specific permit issued by the Oklahoma Department of Environmental Quality to the University. Note that this definition does not include machines held by the University but operated under a permit issued by the Oklahoma Department of Health.

3.03 The **Radiation Safety Committee** (RSC) is an institutional committee created as required by the University's broad scope materials license to review the management of the radiation safety program and ensure compliance with applicable regulations for that license. Committee membership and responsibilities are detailed in the University's broad scope materials license. The committee chairperson and vice chairperson shall be members of the OSU faculty.

3.04 The **Radiation Safety Officer** (RSO) is the individual appointed by the University to oversee the radiation safety program and is responsible for the day-to-day management and mitigation of radiation safety risks. The RSO by definition is a member of the RSC and is the head of the University's radiation safety program.

3.05 The **Oklahoma Department of Environmental Quality** (ODEQ, sometimes referred to as "DEQ" in the literature) is an office of the Oklahoma state government and

is charged with regulatory compliance oversight of the OSU materials licenses and permits.

3.06 **License** refers to a specific materials license issued by the NRC or the ODEQ to the licensee which authorizes receipt, acquisition, ownership, possession, use, and transfer of any chemical or physical form of byproduct material specified in the license, but not exceeding quantities specified in the license.

3.07 **Permit** refers to a specific permit issued by ODEQ which authorizes receipt, ownership, possession, use, and transfer of a machine capable of producing ionizing radiation registered under that license.

### **SCOPE AND APPLICABILITY**

4.01 This policy governs the review and conduct of all activities involving OSU licensed or permitted materials or machines performed in or on OSU property (as defined and authorized in the individual OSU materials licenses and permits as amended) including but not limited to; a) activities conducted by faculty, researchers, staff, students, and employees; and/or b) research supported by government funding, industry sponsors, non-profit entities, or by OSU resources and/or facilities regardless of funding source (if any) while using OSU licensed or permitted materials or machines.

### **POLICY AND PROCEDURES**

5.01 The cornerstones of University policy on the safe use of OSU licensed or permitted materials or machines for any purpose are:

A. **Individual user qualification, training, administration, management, and compliance with program standards and regulatory requirements.** As a matter of University policy, all members of the OSU faculty, OSU staff, OSU student body, as well as visitors and members of the general public, are denied access to OSU licensed or permitted materials or machines until they are formally granted access by the University after demonstrating a specific and appropriate level of qualification and training sufficient to ensure compliance with program standards and regulatory requirements. Additionally, all personnel, even after having been formally granted access to OSU licensed or permitted materials or machines are required to adhere to the following general guidelines:

1. Act in a manner that ensures compliance with all licenses and/or permit obligations during the entire period of authorized access.
2. Maintain licensed or permitted holdings (if applicable) to the minimum necessary to achieve University approved objectives and goals.

3. Control access to OSU licensed or permitted materials or machines under their sub-custody in such a manner as to prevent access by non-authorized personnel.
4. Access, handle, and use materials in such a manner as to keep their own exposure and that of others As Low As Reasonably Achievable (ALARA).

Principal investigators (PI), instructors, authorized users, and other personnel in charge of potentially hazardous work involving OSU licensed or permitted materials or machines are responsible for the activities conducted within their respective laboratories, facilities, or other geographic areas where use is authorized. They are responsible for carrying out activities in accordance with an approved application (i.e., protocol), and in a lab or geographic area approved for the proposed work. They must promptly report incidents to the RSO, or his/her designee, and, if possible, assist in any resulting decontamination, inquiry, and reporting of the incident, as may be required. They are ultimately responsible for the instruction and training provided to all staff and students engaged in activities involving OSU licensed or permitted materials or machines which they hold.

**B. Radiation Safety Office qualification, training, administration, management, control, and compliance with program standards and regulatory requirements.** The Radiation Safety Office, within the Office of University Research Compliance, is charged with the day-to-day management of the OSU radiation safety program. This office ensures that the program, including actions taken by individual users, is in compliance with program standards and protocols in order to meet regulatory requirements and that authorized personnel safely handle all OSU licensed or permitted materials or machines. By regulatory law, this office is led by an ODEQ approved RSO, who is appointed by the Vice President for Research (VPR). The RSO has the regulatory authority to prohibit the use of byproduct material by OSU personnel who do not meet the necessary requirements, to prohibit the use of x-ray devices by OSU personnel who do not meet the necessary requirements, and shut down operations where justified to assure and maintain a safe work environment for any activity that he/she deems to be a threat to the safety and well-being of university personnel, students, visitors, the City of Stillwater, the general public, or the environment. The RSO is not required to seek management approval for support in enforcing such actions, if necessary. Such emergency actions by the RSO are subject to review by the RSC when taken under a license that requires RSC oversight. Further, the RSO has the authority to place persons who violate radiation safety procedures and/or applicable State/Federal regulations on probation or immediately suspend or revoke their privileges to use University licensed or permitted materials or machines. Additional specific responsibilities of the RSO are contained within the University's materials licenses and university job description.

**C. RSC oversight (where individual licenses call for such oversight).** The Vice President for Research (VPR) of Oklahoma State University has appointed a

Radiation Safety Committee (RSC) to work with executive management and the RSO in implementing the radiation safety program and establishing policies and procedures for managing the radiation safety program. The VPR will designate the RSC chairperson and vice chairperson, who must be members of the OSU faculty. The RSC meets quarterly, but additional meetings may be scheduled to ensure the radiation safety program is operating in compliance with OSU licenses and permits, established procedures, and the regulations. Minutes of the meeting, including information on the date of the meeting, members present and absent, summary of discussions, recommendations and results of votes, are kept at the Office of University Research Compliance. The RSC is ultimately charged with the responsibility and authority to control the use of OSU materials held under the University's broad scope license and is responsible for oversight and approval of policies governing the procurement, use, storage, and disposal of the same. The RSC can expedite action on radiation safety matters because of its intimate knowledge of local situations and because of its ability to convene quickly. An executive committee consisting of the RSC Chairperson, the RSO, and one other committee member chosen by the RSC is empowered by the full RSC to act in emergency situations.

Additional duties and responsibilities of the RSC are contained in the University's materials licenses.

5.02 All incidents involving OSU licensed or permitted materials or machines must be reported to the RSO. Incident reports involving materials that are subject to RSC oversight shall be referred to the RSC for review, and if appropriate inquiry.

5.03 Administrative heads of colleges, heads of departments, and heads of other units of the OSU faculty or staff are responsible for employee safety within their units. No activity involving OSU licensed or permitted materials or machines is to be permitted unless there is a commitment of effort and resources appropriate to insure that the work can be conducted safely by authorized users of the licensed or permitted materials or machines.

5.04 Certain members of the ODEQ as well as the OSU Radiation Safety Officer or his/her representative(s) are charged with compliance enforcement of the University's materials licenses and permits. In fulfilling these responsibilities individuals from these organizations require complete and open access to laboratories, facilities, materials, machines, equipment, and administrative records. It is University policy that all deans, administrative heads of colleges and departments, principal investigators, lab managers, authorized users, and any others charged with access control to these laboratories, facilities, and records provide access both to the laboratories, facilities, materials, machines, equipment, administrative records, and to knowledgeable personnel who can assist in compliance inspections, investigations, and visits when requested to do so. Access may be delayed for brief periods when safety issues are involved (e.g. toxin work is in progress and the requested entrant is not authorized access to the toxins) but access may not be denied nor delayed as a matter of "convenience." In fact, most of the

inspections are intentionally conducted as unannounced inspections to ensure that the University is in compliance with regulations and that the program is being administered properly at all times.

## **SUMMARY**

This policy is intended to provide a broad description of the University's program for the safe use of OSU licensed or permitted materials and machines. More detailed policies and procedures which are applicable to specific actions and functions of the University's radiation safety program are available and are contained in other documents, procedures, policies, manuals, training regimens, protocols, and in the materials licenses themselves. Many of these are referenced below.

## **REFERENCES**

Basic Radiation Protection Technology, 5<sup>th</sup> Edition, Gollnick, Pacific Radiation Corporation, 2006.

Title 10 Code of Federal Regulations Part 20 (10 CFR 20) Standards for Protection Against Radiation. United States Nuclear Regulatory Commission.

Title 10 Code of Federal Regulations Part 21 (10 CFR 21) Reporting of Defects and Noncompliance. United States Nuclear Regulatory Commission.

Title 10 Code of Federal Regulations Part 30 (10 CFR 30) Rules of General Applicability to Domestic Licensing of Byproduct Material. United States Nuclear Regulatory Commission.

Title 10 Code of Federal Regulations Part 33 (10 CFR 33) Specific Domestic Licenses of Broad Scope for Byproduct Material. United States Nuclear Regulatory Commission.

Title 252 Department of Environmental Quality (State of Oklahoma) Chapter 410. Radiation Management.

Oklahoma Department of Environmental Quality Materials License # OK-00237-03, Material License of a Broad Scope, as amended.

Oklahoma Department of Environmental Quality Materials License SNM-241, Material License for sealed source special nuclear material, as amended.

Oklahoma Department of Environmental Quality Permit for Radiation Producing Equipment XR049 as amended.

Oklahoma Department of Environmental Quality Permit for Radiation Producing Equipment XR246 as amended.

Consolidated Guidance about Materials Licenses (NUREG-1556) Vol. 7, Program – Specific Guidance about Academic, Research and Development, and Other Licenses of Limited Scope. United States Nuclear Regulatory Commission.

Consolidated Guidance about Materials Licenses (NUREG-1556) Vol. 11, Program – Specific Guidance about Licenses of Broad Scope. United States Nuclear Regulatory Commission.

Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM, NUREG-1575, Rev. 1EPA 402-R-97-016, Rev.1 DOE/EH-0624, Rev.1, August 2000.

[http://www.nrc.gov/reading-rm/doc-collections/nuregs/.](http://www.nrc.gov/reading-rm/doc-collections/nuregs/)

[http://www.deq.state.ok.us/lpdnew/radindex.html.](http://www.deq.state.ok.us/lpdnew/radindex.html)

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Approved by E-Team: August 6, 2012  
Revision Approved: February 18, 2015