



**Occupational Health and Safety Program  
(OHSP)**

**For**

**Naresuan University Center for Animal Research  
(NUCAR)**

## Table of Contents

|   |    |
|---|----|
| 1. Introduction.....  | 4  |
| a. Goals of the occupational health & safety program.....         | 4  |
| b. The objectives.....  | 4  |
| c. NUCAR and its facilities: .....                                | 5  |
| d. Limitations of the NUCAR OHSP: .....                           | 6  |
| 2. Definitions for occupational health & safety program.....      | 6  |
| 3. Occupational health and safety responsibilities.....           | 7  |
| a. Institutional officer (IO).....                                | 7  |
| b. Occupational health and safety committee (OHSC).....           | 8  |
| c. Occupational health and safety (OHS) officer .....             | 8  |
| d. NUCAR director.....  | 9  |
| e. Individual employees’ responsibilities.....                    | 9  |
| 4. Facilities, procedures, and monitoring .....                   | 10 |
| 5. Occupational health.....                                       | 11 |
| a. Occupational health procedures .....                           | 11 |
| b. Support for the occupational health plan.....                  | 13 |
| c. Operation of the occupational health and safety office .....   | 14 |
| d. Medical evaluation and preventive medicine for personnel ..... | 14 |
| 6. Hazard identification and risk assessment.....                 | 15 |
| 7. Personal hygiene and personnel protective equipment.....       | 18 |
| 8. Occupational health and safety procedure .....                 | 21 |
| 9. Safety training requirement.....                               | 22 |

|  |    |
|--|----|
| 10. Procedures specific to the veterinary medicine .....   | 23 |
| 11. Emergency response plan.....   | 23 |
| 12. Ergonomics.....  | 26 |
| 13. References .....   | 32 |
| 14. Safety, Occupational Health, and Environment Policy for NUCAR<br>.....   | 34 |
| 15. Policy and Guideline for Safety, Occupational Health, and Working<br>Environment for Naresuan University ..... | 35 |

**Occupational Health and Safety Program (OHSP)**  
**for Naresuan University Center for Animal Research**  
**(NUCAR)**

**1. INTRODUCTION**

**a. Goals of the Occupational Health & Safety Program:** The NUCAR strives to protect its employees from any adverse health effects resulting from activities in the workplace. This occupational health and safety program provide for the appropriate level of participation of all personnel involved in the care and use of research animals on the basis of the risks encountered, regardless of their employment status. Any animal experimentation involving hazards will be reviewed by the committees [NUACUC and NUIBC] to ensure safety and to reduce the risk associated with using animal, materials or systems that have inherent danger by controlling or eliminating hazards.

**b. The objectives** of the program is to identify health and safety concerns, reduce the occurrence of occupational incidents, injuries, and illnesses, and promote employee health and well-being. This is done through a variety of means. Employees are matched to their jobs and tasks to ensure that they have the physical ability to perform the job as well as the knowledge and training necessary to execute the required tasks. In addition to general laboratory safety training, employees are provided with detailed instructions and standard operating procedures (SOPs) concerning the tasks that they are expected to perform as part of their routine duties. These are designed to ensure that the work is performed in a consistent manner to ensure quality of the data and also to ensure safety of the employees, as well as stress safe laboratory practices and the use of personal protective equipment (PPE). Employees are provided with appropriate personal protection items such as gloves, lab coats when deemed necessary. When an exposure potential exists, employees are protected, whenever possible, by appropriate medical interventions such as immunization or chemoprophylaxis. If the hazard cannot be removed by altering the procedure or controlled by the actions above, some employees may be required to undergo periodic medical screening to detect early signs of adverse health effects. This latter procedure is last resort since every effort is made to eliminate the hazard or to place an appropriate barrier between the hazard and the worker.

**c. NUCAR and its facilities:** The NUCAR is the unit designed to serve all the university researchers for all studies using laboratory animals such as mice, rats, guinea pigs and rabbits. NUCAR also provides non-clinical testing services for public and private sectors as well as the pharmaceutical, biotechnology, and medical device industries. The NUCAR worksites consist of 2 buildings, in which Building #1 has 3 main functional areas: the office zone, the technical service zone and the animal husbandry and use zone (Figure 1). Building #2 is partially completed building, so far only 2<sup>nd</sup> floor has been used for hematology, molecular laboratory, and histopathology.

In the building #1, the office zone is area for office users which include 5 office rooms, 1 meeting rooms, 1 common rooms, 1 storage room and toilets. The technical service zone is an interstitial space serves for the Heating, Ventilation and Air-Conditioning (HVAC) systems, air ducts, water and electric pipe etc. All kind of technical services for animal husbandry and use zone are done in this zone such as changing light bulb, changing the air handling unit (AHU) filter etc. The animal husbandry and use zone consists of 38 rooms including animal holding rooms, procedure rooms, quarantine room, washing & sterilization room, storage rooms, animals and goods (diets, bedding, equipment etc.) reception rooms, personnel changing rooms, toilets and a control room. The environment of these zones such as temperature, relative humidity, pressure, ventilation, light, noise level and sanitation are controlled and monitored closely by designated personnel.

An approximately 200 square meters had been renovated to be an animal biosafety level 2 or ABSL2 zone for work involving laboratory animals infected with agents associated with human disease and posing a moderate hazard to personnel and the environment. This zone is restricted and mainly used for the safety testing of vaccines. Researchers who intended to work in this ABSL2 zone require to take “Biosafety and Biosecurity Course” and obtain a valid certificate. For entering an ABSL2 zone, researchers must wear dedicated laboratory coats, coverall safety goggle, N-95 mask, hair net, shoe cover and double gloves while working in the ABSL-2 laboratory area as indicated in standard operating procedure (SOP).

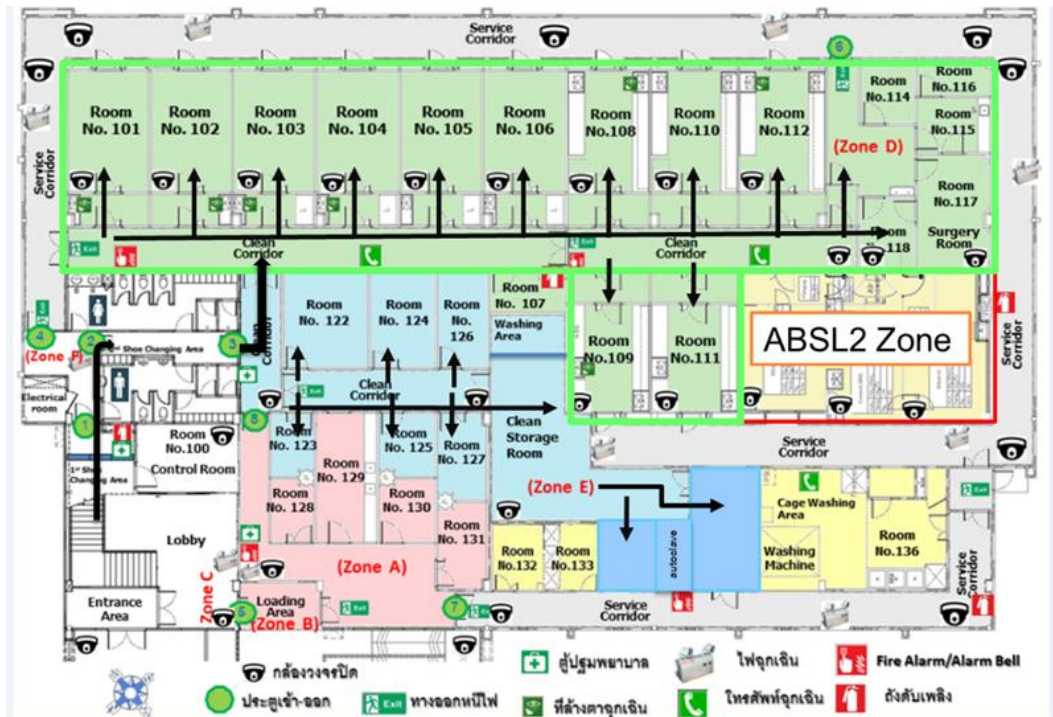


Figure 1 Floor plan of animal care and use zone in the Building 1.

**d. Limitations of the NUCAR OHSP:** While worker and researchers' safety and health are a priority concern for the management of NUCAR, the implementation of the OHSP is not intended to compete with other available clinical services. It is not anticipated that this program shall perform routine clinical operations or treatment of medical problems not directly associated with the NUCAR. Certain problems may be initially diagnosed and referred to Naresuan University Hospital (NU hospital), where they may be better treated. Actual clinical services will be limited to minimal first aid for occupational injuries.

## 2. DEFINITIONS FOR OCCUPATIONAL HEALTH & SAFETY PROGRAM

**a. Employee:** For the purpose of this document, an employee is defined as a worker who works at NUCAR and is paid a salary and provided benefits by Naresuan University.

**b. Personal Protective Equipment (PPE):** Clothing and equipment utilized to protect individual workers from injury or exposure to hazards associated with hazardous, biological or infectious, and radioactive materials and waste when removal of such hazards is impractical or impossible.

**c. EMAT:** An Emergency Assistance Team comprised of qualified and knowledgeable personnel that can provide facility information and professional advice to emergency response personnel.

**d. Risk assessment:** Change of hazard or bad consequence; the probability of exposure to change of injury or loss from a hazard. Risk level is expressed in terms of hazard probability and severity.

**e. Exposure:** The frequency and length of time personnel and equipment are subjected to a hazard.

**f. Inspection:** The process of determining compliance with safety and health standards through formal and informal survey of workplaces, operation, and facilities.

**g. Hazard:** Any actual or potential condition that can cause injury, illness or death of personnel, damage to or loss of equipment, property, or mission degradation.

### **3. OCCUPATIONAL HEALTH AND SAFETY RESPONSIBILITIES**

**a. Institutional Officer (IO):** The IO has the overall responsibility of implementing a safety program which ensures the protection of personnel, equipment and the environment in the NUCAR.

(1) The IO must provide guidance and establish the policies involving OSHP scope and participation.

(2) The IO shall ensure that the NUCAR budget submissions include appropriations for all necessary expenditures to promote and ensure worker health and safety (e.g., adequate PPE and medical supplies for necessary medical interventions as well as the cost of medical care for work-related injuries and illnesses; maintenance and equipment and facility upgrades as required).

(3) The IO shall charge the OHS office with adherence to performance evaluation be held responsible for safety and health and accident prevention.

(4) The IO appoints or contracts for, at a minimum, an Occupational Health Officer. The IO shall further ensure that each appointed officer has received the training required to fulfill assigned tasks.

(5) The IO shall ensure that specific SOPs are written to delineate procedures for the actions and interventions described herein and that these are universally applied to the NUCAR workforce.

**b. Occupational Health and Safety Committee (OHSC):**

The occupational health and safety committee are an integral part of the safety and health program. OHSC help to ensure effective implementation of the program at the establishment level. As such, she/he shall

(1) Monitor and assist the safety and health program and make recommendations to the IO in charge on the operation of the program.

(2) Monitor findings and reports of workplace inspections to confirm that appropriate corrective measures are implemented.

(3) Review, and recommend changes, as appropriate, to procedures for handling safety and health suggestions and recommendations from NUCAR staff and researchers.

(4) Developing health and safety training and educational programs for NUCAR staff and researchers.

(5) Other duties assigned by IO.

**c. Occupational Health and Safety (OHS) Officer:**

The duty of the NUCAR OHS Officer shall be to oversee and administer the NUCAR OHSP. As such, she/he shall:

(1) Implementation of the NUCAR OHSP.

(2) Be the primary point of contact for all actions taken under this program.

(3) Carries out the recommendations of the OHS committee by safely and appropriately administering required vaccines to NUCAR employees.

(4) To accurately and completely record such actions so as to constitute a medical record entry.

(5) Provides administrative support to the occupational medicine program and medical surveillance.

(6) Act as principle adviser to the IO on matters pertaining to the OHSP of the IO.

(7) Act as a consultant to the director of NUCAR concerning budget and appropriations for the implementation of this program.

(8) Oversees the safety aspects of the OHSP on behalf of the IO.

(9) Serves as the principle advisor to the IO and staff on issues concerning safety and accident prevention.

(10) Ensures and annual safety assessment of all activities is conducted.

(9) Other duties assigned by IO.

#### **d. NUCAR Director**

(1) Ensure that every worker is aware of their duties and limitations.

(2) Ensure that every worker is trained in the tasks of their job and is aware of the potential hazards inherent to those tasks. This includes administrative and support staff (janitors and maintenance personnel) that regularly enter the lab work areas. All employees entering areas where scientific studies are being done will receive specific agent/reagent training, to include risk reduction.

(3) Maintain a file of safety SOP's for laboratories under their supervision and conduct an annual review of these SOP's to ensure they are current and implement current guidelines.

(4) Correct, on the spot, any unsafe working practices, and report to the OHSC any unsafe working condition or facility.

(5) Other duties assigned by IO.

**e. Individual employees' responsibilities:** All members of the NUCAR workforce are expected to assist in maintaining a safe and healthy workplace. Every member of the workforce has basic responsibilities. Every member is charged to:

(1) Remain familiar and comply with safety rules and regulation. Adhere to instructions and SOPs.

(2) Adhere to all safety measures and utilize personal protective devices while working with hazardous or infectious materials.

(3) Attend required training.

(4) Correct and report any unsafe acts or conditions to their director as soon as possible.

(5) Report all accidents and injuries to director.

(6) Develop personal safe working habits.

(7) Adhere to policies regarding the need for medical intervention (vaccines or chemoprophylaxis) or periodic medical screening, as a condition of employment.

#### **4. FACILITIES, PROCEDURES, AND MONITORING**

**a.** Facilities are covered in the NUCAR SOPs addressing General safety procedures shall be a part of all work performed within NUCAR. All employees must be aware of potential hazards in their workplace and the proper methods to deal with those hazards in the event of an accident.

**b.** The preventive maintenance is responsible for implementing preventive maintenance. The preventive maintenance is scheduled on a recurring periodic basis, based on the type of equipment and on manufacturers' recommendations noted within the company's service manual. Facility management for utility failure during non-duty and on duty hours are provided by NUCAR engineer and technician.

**c.** PPE is required for all laboratory employees. This equipment includes but is not limited to lab coats, gloves, safety goggles, etc. Many types of PPE may be used at NUCAR. The process for matching equipment to hazards is described in NUCAR Laboratory Safety SOP.

**d.** Specialized equipment includes:

(1) Biosafety Cabinets class IIA or IIB: Class II biological safety cabinets are primary engineering controls typically used for microbiological studies, cell culture, pharmaceutical procedures and toxicology. These biosafety Cabinet Certification are certified by qualified personnel/ outsources on yearly basis.

(2) Chemical fume hoods: a type of local ventilation device that is designed to limit exposure to hazardous or toxic fumes, vapors or dusts. These equipments are certified by qualified personnel/ outsources on yearly basis.

(3) Air Handling Unit (AHU) or Heating, Ventilation, and Air-Conditioning (HVAC) system. This system can control temperature and humidity to minimize variations due to changing climatic conditions in all 6 animal rooms. The AHU systems are designed for reliability, ease of

maintenance, and capable of adjustments to maintain temperatures and relative humidity throughout the year. An ABSL2 zone has a separate HVAC system. In addition, the pressurization system is used to control airborne contamination and odors. Ventilation rate can be set in accordance with heat load and odors and other variables by the use of variable air volume (VAV). HVAC system has been checked routinely by NUCAR engineer and facility technician as stated in the SOP.

**e. Facility Related Environmental Concern and Control:**

(1) Hazardous Material and Hazardous Waste disposal are handled by contract organization licensed to handle and dispose of hazardous waste.

(2) Procedures for the management of spills are detailed in the NUCAR Laboratory SOPs.

## **5. OCCUPATIONAL HEALTH**

### **a. Occupational Health Procedures**

#### **(1) Initial Occupational Health Procedures:**

(a) At the time of initial application for employment, the committee will make an assessment of the applicant's physical abilities to perform the assigned duties or limitations that may impact on those duties. Assessment of the education or training of the employee to fulfill the tasks of the job is the purview of the director and assigned university committee.

(b) Once an applicant has been selected for a position, the OHS secretary will complete the Health Hazard Survey and at the same time brief the worker on their precise duties and the Occupational Health responsibilities involved in those tasks.

#### **(2) Periodic Occupational Health Procedures:**

(a) Under the OHSP, routine periodic exams are utilized when there is a continuing risk of an exposure that cannot be adequately controlled. Commonly, protocols, procedures, and reagents change and with these changes, attendant risks. Given the rapid advances in medical research technology, periodic screening for hazardous exposures is a necessary function of an OHSP. The NUCAR will require all employees to undergo an annual health hazards risk assessment.

(b) Most illnesses or injuries that occur in the workplace are both predictable and preventable. In addition, those procedures involving agents and/or reagents which require the use of respiratory protection will require fit-testing and periodic evaluation.

### **(3) Recurring Occupational Health Interventions:**

(a) NUCAR commits to protect the health of its employees by providing appropriate chemoprophylaxis against disease when such is available. After assessing the risk plus the safety and effectiveness of medical countermeasure, other chemoprophylaxis agents may be offered or required of NUCAR employees.

(b) Hearing protection may be warranted for selected tasks within NUCAR. However, noise is not a widespread problem in this facility.

(c) NUCAR Director will direct to the OHS Officer those personnel in need of specific screening after risk assessment for potential or continuous exposures, such as periodic allergy screening among employees exposed to animals.

(d) All NUCAR employees will require annual assessment of potential worksite exposures documented by a completing a Health Survey of Potential Worksite Hazards Form at the time of employment and at least annually. (The employees who are not involved in Laboratory will require updating their records once every 5 years.) This form is to be completed with the employee and signed by the Director. This form will then be forwarded to the OHS Officer. If a worker is exposed to a new agent or reagent in the interim between annual assessments, a new Health Survey form will be completed and forwarded to the Occupational Health Office. The OHS Officer or other appropriately qualified health care provider will review the form and provide feedback to the employee on any other periodic assessments or interventions needed.

**(4) Optional Health Interventions:** Although not directly a part of this OHSP, as part of the overall plan to keep the workforce safe and healthy, NUCAR will:

(a) Strive to provide the staff with information concerning periodic health screening events.

(b) Provide access for its employees to optional vaccines, as available.

**b. Support for the Occupational Health Plan**

**(1) Specific Department Support Contributions:** As recognized experts in their field, NU medical staff members may be called upon to assist in the investigation of a potential exposure or in making the diagnosis of job-related illness. Subject matter experts will be expected to assist the Occupational Health Officer in setting policy for prophylaxis and post-exposure interventions. When deemed appropriate, employees deemed may be referred for serologic testing to determine their immune status or need for medical intervention. Likewise, in the event of a workplace exposure, sera from the source (also known as the donor) specimen as well as the victim may need to be sent to the appropriate department for assessment of the risk.

**(2) The Attending Veterinarian:** While the specifics of work performed within the other sections of NUCAR vary, they are of a similar overall nature. The work performed by the AV is however, distinctly different and perhaps somewhat more hazardous.

(a) The daily tasks require interaction with live animals. Both the behavior and the possible disease risk of these animals must be considered in protecting the health and safety of the employees who provide services.

(b) PPE, when properly used, is the most effective means to reduce transmission of disease between animal and handler. In addition, continuous education and safety training as well as periodic screening programs, are likely to further reduce transmission.

(c) The physical hazards of the animal care workplace are also different. Frequent and extensive cleaning using disinfectants pose particular hazards for animal care personnel. The handling of live animals carries the risk of injury from bites, scratches or other physical contact animal feces, body fluids and dander. Generally, material is moved daily in the animal care environment, food, bedding, cages and the like all pose a general risk of injury. Therefore, ergonomic issues are also concerned.

(d) Good occupational medical practice demands that pre-placement screening (at least by questionnaire) be performed to screen out applicants who may have a personal or family history of allergic conditions and who might be at greater risk for developing allergic responses to animal products. During employment, periodic screening for the onset of allergic

symptoms is advised. Consideration also needs to be given to the use of respirators (more than just surgical masks).

### **c. Operation of the Occupational Health and Safety Office**

Under the supervision of the OHS Officer, the Occupational Health Survey of Potential Worksite Hazards will be the primary guide for the OHS officer to determine eligibility for any vaccine.

The Occupational Health Record files shall be maintained such that there are separate sections for current and prospective employees. As employees depart NUCAR, their files shall be retired to an “Inactive” section filed by name but grouped by calendar year of departure. As space permits, these individual files may be further archived (boxed and stored) or destroyed.

Post-exposure prophylaxis for an acute exposure is a patient-physician decision. As per the duties of the OHS Officer, a decision shall be made as to the need to any such treatment after full evaluation of the circumstances of the incident. All information related to the decision to prescribe (or not to use) such post-exposure interventions shall be documented in the employees’ occupational health medical record.

### **d. Medical evaluation and preventive medicine for personnel**

**(1) Purpose:** A medical evaluation and preventive medicine will be established for all NUCAR personnel who may potentially be exposed to chemical and/or biological hazards, to provide established standards for medical surveillance and to help occupational health professionals and others recognize and evaluate health risks associated with specific workplace exposures.

**(2) Responsibility:** It is the responsibility of OHSC and Director to ensure that all personnel working in NUCAR are under a medical surveillance program and that woman who are pregnant, or attempting to get pregnant, inform occupational health to reassess workplace exposures which may be harmful to the fetus. Director will inform the OHS officer of all contract workers and NUCAR employees who are involved in NUCAR facilities.

**(3) Procedure:**

(a) At the time of initial approval for work with chemical and/or biological hazards and at least annually thereafter, the OHS officer will review the OHSP of all employees. The OHS officer will establish a secure, permanent document storage and retrieval system for records required.

(b) Employee will have their health check at least once a year and submit the copy of their health reports to the OHSC secretary. The medical doctor who is OHSC will evaluate the health report and give a recommendation. The health report and the status of employee health will be reviewed annually in the OHSC meeting.

(c) All workers who suspect that they may have become ill due to exposure to work-related factors will notify their supervisor immediately. All workers who develop unusual symptoms lasting more than 1 hr. (including intestinal problems, skin rashes, fever, headache, muscle ache, etc.) shall notify their supervisors. All workers who miss work due to illness must notify their supervisors and have symptoms monitored. The OHS officer will obtain periodic reports of the results of medical evaluation and treatment for suspected work-related illness. They will make recommendations to the PI and their supervisors on the medical fitness of the worker to continue some or all of her/his duties.

(d) In coordination with the supervisor, the director act on the advice of the OHS officer to deny or allow continued access of the worker to the workplace.

## **6. HAZARD IDENTIFICATION AND RISK ASSESSMENT**

**a. Purpose:** To prescribe a uniform policy and procedure for conducting Safety and Risk Assessments within the NUCAR and its activities.

**b. Responsibility:**

**(1) NUCAR OHS Officer**

(a) Conduct quarterly, chemical hygiene safety, and fire safety assessment, respectively, of all laboratories and activities within the NUCAR and forward a copy of the findings to the IO

(b) By the authority of the IO, immediately terminate any unsafe act.

(c) Maintain a file of assessment results and actions taken concerning deficiencies identified during the assessments.

(d) Take appropriate action to resolve any safety discrepancies found.

(e) Maintain a file of all actions taken to correct deficiencies found.

### **Procedure**

(a) A safety, chemical hygiene, and fire safety assessment will be conducted by the OHS officer and/or OHSC representatives.

(b) The NUCAR safety inspection checklist will be utilized when conducting the assessments.

(c) If any inspection reveals a condition or deficiency that is deemed to be of a serious nature or poses an immediate danger, that is capable of causing bodily injury or disability, that operation or room shall be closed, and the IO will be notified immediately.

(d) A file will be maintained of all assessment results and actions taken to correct any deficiencies found.

### **(2) The Risk Assessment Code is determined by:**

(a) The “**Effect**” of an event that may result from the violation or situation:

- Category I-Catastrophic: May cause death, permanent total disability, system loss, major property damage.

- Category II-Critical: May cause permanent partial disability or temporary total disability in excess of three months, major system damage or significant property damage.

- Category III-Moderate: May cause minor injury, lost workday accident compensable injury or illness.

- Category IV-Negligible: May cause injury requiring first aid or minor supportive medical treatment, minor system impairment.

(b) **Mishap Probability.** The probability that a hazard will result in a mishap, based on an assessment of such factors as location, exposure in terms of cycles or hours of operation, and affected population. Mishap probability will be assigned an Arabic letter according to the following criteria:

- Frequent – “A” Likely to occur frequently in the life of a system, item, facility (1 time/day)

- Likely – “B” probably will occur several times in the life of an item (1 time/week).
- Occasional – “C” Likely to occur sometime in the life of an item (1 time/month).
- Seldom – “D” Unlikely, but possible to occur in the life of an item (1 time/year).
- Unlikely – “E” So unlikely it can be assumed occurrence may not be experienced (1 time/many year).

(c) **Risk Assessment Code (RAC):** An expression of risk which combines the elements of effect and mishap probability. The following table determines the risk assessment code:

| Hazard Severity | Accident Probability |          |          |          |          |
|-----------------|----------------------|----------|----------|----------|----------|
|                 | <u>A</u>             | <u>B</u> | <u>C</u> | <u>D</u> | <u>E</u> |
| I               | 1                    | 1        | 2        | 2        | 3        |
| II              | 1                    | 2        | 2        | 3        | 4        |
| II              | 2                    | 3        | 3        | 4        | 4        |
| IV              | 3                    | 4        | 4        | 4        | 4        |

(3) If an imminent danger situation (RAC-1) is discovered, the AV will be notified immediately. Correction will be made or personnel will be withdrawn from the danger as an interim measure.

(4) Corrective or interim measures to abate violations defined with RAC-1 will be initiated within 24 hours from notification of the violation.

(5) Corrective or interim measures to abate violations defined with RAC-2 will be initiated within 72 hours from notification of the violation.

(6) Corrective or interim measures to abate violations defined with RAC 3-4 will be initiated within one week from notification of the violation.

(7) The NUCAR Safety Inspection Checklist will be used for all routine inspections of NUCAR facilities.

## **7. PERSONAL HYGIENE AND PERSONNEL PROTECTIVE EQUIPMENT**

**a. Purpose:** To prescribe a uniform policy and procedure for selection and utilization of PPE within NUCAR and its activities.

**b. Responsibilities:**

(1) NUCAR: Ensure an adequate stock of routinely utilized PPE is available.

(2) NUCAR OHS officer: Ensure all personnel within NUCAR are provided with training and guidance in the selection and utilization of PPE.

(3) Director:

(a) Ensure the appropriate PPE is available and utilized within the NUCAR.

(b) Ensure that the PPE is maintained and serviceable.

(c) Ensure NUCAR personnel are trained in the selection and utilization of appropriate PPE.

(4) Individuals: **MUST** wear appropriate PPE when required.

**c. Procedures:**

(1) A risk assessment of the work area will be performed by the PI and OHS officer to determine the need for PPE. The task being performed, material being used and safety equipment (e.g. biological safety cabinet, chemical fume hood) utilized in the performance of the task must be considered when selecting the appropriate PPE.

(2) PPE is required for use by personnel entering areas, handling materials and performing procedures that present potentially hazardous situations or utilize potentially hazardous materials.

(3) PPE utilized in the work area must remain in the work area. All PPE will be removed before exiting the work area and will not be taken home for cleaning or laundering.

(4) Contractors are responsible for ensuring that their personnel are provided with the necessary personal protective equipment to assure compliance with applicable safety standards when performing work at NUCAR

**d. Eye/Face Protection:** Protective eye and face equipment shall be required where there is a reasonable probability of injury that can be prevented by such equipment.

(1) **Safety Glasses:** Safety glasses shall be considered the minimum eye protection to be used in laboratories. Safety glasses with side shields shall be utilized when personnel enter situations where a potential of flying particles, dust or debris is present.

(2) **Splash Goggles:** Chemical splash goggles shall be worn during procedures where a chemical splash hazard exists or when corrosive or caustic chemicals are utilized

**e. Hand Protection:** The use of gloves will vary according to the procedures being performed. Gloves shall be visually inspected for cuts, tears and deterioration before each use. No gloves shall be used if they are peeling, cracked, discolored, or if they have punctures, tears, or other evidence of deterioration.

(1) Disposable gloves such as surgical or examination gloves shall not be washed or disinfected for reuse. They must be disposed of after use.

(2) Selection of gloves for protection against chemical hazards will be based on suitability to the procedure being performed and permeation and degradation data of the chemical on the material in which the gloves are made. To determine the appropriate glove material required consult the MSDS's on the chemicals for which the gloves will be utilized.

(3) Selection of gloves for protection against biological hazards must be constructed of the appropriate material, usually latex or vinyl, of appropriate quality for the procedures performed and of the appropriate size for each laboratory worker.

(4) When working with wastes, utilize heavy duty gloves.

**f. Respiratory Protection:**

The requirement for, selection of and use of respirators shall be determined by the OHS officer.

**g. Hearing Protection:**

(1) The requirement for hearing protection equipment shall be determined by the NUCAR OHS officer.

(2) Hearing protection (e.g. ear plugs, ear muffs) will be utilized in areas of high intensity noise and around other operations designated.

**h. Foot Protection:** Protective footwear must be utilized when working where falling, rolling, or sharp objects pose a danger of foot injuries, and where personnel's feet are exposed to electrical hazards.

(1) Work boots shall be utilized by personnel that handle heavy equipment routinely (e.g. Animal Caretakers).

(2) Non-conductive sole shoes shall be worn by personnel that handle electrical equipment and circuitry.

**i. Clothing:** Laboratory personnel shall wear closed-toe shoes. The use of sandals or flip-flops is prohibited. It is highly recommended that street clothes which leave increased amounts of the body exposed (e.g. shorts, sleeveless shirts) are not to be worn in laboratories.

(1) Lab coats will be worn over street clothes inside laboratories where hazardous materials are utilized or stored. They shall be removed before exiting the laboratory to non-laboratory areas.

(2) Chemical protective clothing to include aprons or one-piece suits and boots shall be worn when there is a high risk of chemical exposure. This clothing will be inspected for cuts, tears and deterioration prior to each use.

**j. Emergency Eyewash**

(1) For new construction and laboratory renovation, approved eyewash will be installed in each laboratory or area where hazardous materials are handled or stored.

(2) Eyewash stations shall be flushed once weekly for a minimum of ten (10) minutes and this action logged into a log book.

(3) Signs shall be placed conspicuously to post the location of each eyewash.

(4) Equipment shall be accessible at all times. Personnel will not store equipment, apparatus, containers or supplies in front of or underneath emergency eyewash.

## **8. OCCUPATIONAL HEALTH AND SAFETY PROCEDURE**

**a. Laboratory Safety SOP:** The following are applicable NUCAR Lab

(1) Biosafety in the Laboratory (NUCAR SOP No. 07-10)

(2) Chemical Safety in the Laboratory (NUCAR SOP No. 07-11)

(3) Laboratory Waste Management (NUCAR SOP No. 07-12)

(4) Safety Equipment Usage (NUCAR SOP No. 07-13)

**b. General Safety SOP:** The following are NUCAR General Safety SOP:

(1) Animal Bites Scratch and Other Injuries (NUCAR SOP No. 07-01)

(2) Injuries Precautions for Laboratory Animal Allergy (NUCAR SOP No. 07-02)

(3) Precautions for zoonotic disease (NUCAR SOP No. 07-03)

(4) Biohazard Waste and Sharps Management (NUCAR SOP No. 07-04)

(5) Emergency and Disaster Management (NUCAR SOP No. 07-05)

(6) Routine Prophylaxis and Screening (NUCAR SOP No. 07-06)

(7) Occupational Health for NUCAR Personnel (NUCAR SOP No. 07-07)

(8) Occupational Health for Visitors and Researchers of NUCAR (NUCAR SOP No. 07-08)

(9) The Usage of First Aid Cabinet (NUCAR SOP No. 07-09)

## **9. SAFETY TRAINING REQUIREMENT**

**a. Purpose:** To prescribe a uniform policy and procedure within the NUCAR for the development of an effective training program.

**b. Responsibility:**

**(1) NUCAR OHS officer/committee**

(a) Ensure all appropriate Safety training courses are made available and provided to the NUCAR personnel as required.

(b) Conduct ongoing hazard communication, fire prevention hazardous material and waste management training.

(c) Maintain a file of all safety training provided and personnel who have received the training.

(d) Submit a report to the IO for all training operations.

**(2) Director**

(a) Coordinate with the NUCAR OHS Officer and/or other activities for the establishment of a safety training program.

(b) Ensure all personnel within the activity are provided to receive the appropriate safety training.

**c. Procedures:**

**(1) Fire Prevention Training Program:** This 1 hour/Course identifies local methods utilized for the prevention of fires and procedures for emergency response during a fire situation. All personnel assigned, attached and employed by NUCAR will attend a Fire Prevention Course annually or as needed.

**(2) Laboratory Safety Training Program:** This 2-hour training program provides laboratory personnel with information pertaining to safe laboratory operations. Laboratory personnel and personnel that may come into contact with blood, blood products, tissues and other body fluids will attend a Laboratory Safety Course and Hazard Communication Course annually or as needed.

**(3) Hazard Communication Training Program:** This 2-hour course reviews hazards associated with chemical, how to recognize hazardous material, and safety precautions that may be utilized to prevent exposure to hazardous materials. It is an overview of the employee's "right to know" and covers information on Material Safety Data Sheets (MSDS), chemical inventory and labeling systems. All personnel that may come into contact with chemicals will attend a Hazard Communication Course annually or as needed.

**(4) Other Courses:** There is various safety courses offered by other government agencies or by private corporations. All training must be reported to the NUCAR OHS officer

## **10. PROCEDURES SPECIFIC TO THE VETERINARY MEDICINE**

The AV shall maintain SOPs that deal with issues that are specific to the facility. The special efforts that are required to protect the staff from the animals and the animals from the staff shall be detailed in these SOPs. These shall include efforts to ensure that the staff is free of human diseases to which the animals are susceptible and procedures necessary in the event of an injury such as an animal bite that could potentially transmit disease.

## **11. EMERGENCY RESPONSE PLAN**

**a. Purpose:** To establish a system that consists of procedures for controlling personnel, facilities, equipment, and communications in response to an emergency.

**b. Responsibility:**

**(1) Emergency Assistant Team (EMAT)**

(a) IO: The team leader will be available to receive and consolidate all evacuation reports from the NUCAR. The team leader will coordinate all EMAT responses and consolidate all information derived by the EMAT.

(b) NUCAR OHS Officer: Monitor the area to ensure the EMAT team and other personnel are not exposed to any hazards. Insures that the applicable Material Safety Data Sheets are available and all precautions are compiled with.

(c) Facility technician: Facility technician will provide institutional based knowledge such as power systems, ventilation systems, confined spaces and other vital information pertaining to the building and its structure.

**(2) Individual**

(a) Report all emergencies in a timely fashion.

(b) Remain available during emergency situations to provide information to response personnel regarding circumstances surrounding a situation.

(c) Provide a written statement to the Director: as to any circumstances surrounding an incident.

**c. Procedure:**

**(1) Fire:**

(a) If a fire is small in size and involves a contained area such as a trash can without any hazardous material in the immediate area; an individual may try to extinguish the fire utilizing a fire extinguisher or other methods such as smothering or dowsing the flames with water.

(b) Large Fires:

- Yell "FIRE" to get help.

- Close the doors while exiting the room. DO NOT LOCK DOORS !!!

- While yelling “ FIRE !!”, activate the alarm system until an audible bell is heard.

- Call the Fire Department (199) and provide the following information

- Location: Bldg...#and Rm.#

- Name and phone no.

- Type of fire (e.g.Lab, office, chemical).

- Any other information that may helpful

(c) When the alarm is heard, everyone will exit the building via the Emergency Evacuation Route or the closest available exit.

(d) Individuals assigned to assist physically challenged and special needs personnel in evacuation will report to the individual and assist them in evacuation.

(e) While exiting, close the doors; **DO NOT LOCK DOORS!!!**

(f) Each unit will meet in a predestinated assembly area for accountability purposes.

(g) No one will re-enter the building until the verbal “ALL CLEAR” is given by the NUCAR director or OHS Officer.

## **(2) Flammable Gas Leak**

(a) Turn off service valve.

(b) Stop engine. Do not operate any switches or electrical equipment.

(c) Ventilate the immediate area.

(d) Stop personnel from entering.

(e) Do not use the gas system until it has been made safe.

## **(3) Chemical Spill**

The detail is provided in SOP.

## **(4) Earthquake (In case of an earthquake inside the building)**

(a) Duck under the nearest sturdy object and hold onto it until the shaking stops. If you are not near a sturdy object, make yourself as small as possible and cover your head and neck.

(b) If you stand in a doorway, brace yourself against the frame and watch out for swinging door or other people.

(c) Avoid windows, filing cabinets, bookcases and other heavy objects that could fall or shatter.

(d) Stay under cover until the shaking stops, then leave the building.

(e) If it is safe to do so, stabilize any laboratory procedure that could lead to further damage, such as turning off burners or electrical equipment.

**(5) Utility Failure:** In case of power outages during disaster situations, these procedures should be followed:

(a) Stay away from downed power lines.

(b) Shut off the gas and electricity in your assigned work area.

(c) Report major problems to NUCAR Director.

**(6) Medical Emergency:**

(a) Remain calm.

(b) Call Medical Emergency Service at 1669

(c) Do not move the injured person unless there is danger of further harm.

(d) Keep the injured person warm.

(e) Do not exceed your training or knowledge when attempting to render first aid.

**(7) Emergency Phone Number:** See NUCAR SOP No. 07-05 Emergency and Disaster Management for all important phone number.

## **12. ERGONOMICS**

NUCAR does not have an official Ergonomics Program; however, all employees should be aware of the questions or concern:

### **a. Definitions:**

**Ergonomics:** The following information and consult their health care providers if they have any

(1) Science of designing or modifying work processes and work environments to fit the worker and avoid causing or aggravating medical condition.

(2) Ergonomics hazard: Any conditions included static or repetitive activities, exertion, awkward postures, vibration, inappropriate workstation, and environment.

(3) Repetitive Strain Injuries (RSI): Repetitive strain injury is a condition where pain and other symptoms occur in an area of the body which has done repetitive tasks (often arms or hands). It is usually caused by a mixture of bad ergonomics, poor posture, stress, and repetitive motion. Repetitive activities may cause discomfort and, if not properly modified, may lead to pain or reduced dexterity. Laboratory procedures may be repetitive or involve a variety of these risk factors. Not everyone performing the same job tasks will develop a RSI.

(4) Musculoskeletal Disorders (MSDs) are injuries and disorders of the muscles, nerves, tendons, ligaments, joints, cartilage and spinal disks. Examples are carpal tunnel syndrome, epicondylitis (pain in elbow joint), synovitis (joint pain), muscle strains, Raynaud's syndrome (spasms of the blood vessels in the extremities), sciatica, tendonitis, trigger finger and low back pain.

(5) Risk Factors: Risk factors are elements or components of task, posture, workstation, and environment that increase the probability of cause or contribution to musculoskeletal disorders.

(6) Carpal Tunnel Syndrome: A condition caused by compression of the median nerve in the carpal tunnel and characterized especially by weakness, pain and disturbances of sensation in the hand.

(7) Awkward Body Postures: Any posture that places a body part out of a neutral position (i.e. twisting, poor posture, bending, over-reaching) may put increased strain on muscles, tendons, ligaments and joints.

(8) Exertion: Maintaining a specific body position or exertion for long periods of time may result in pressure or force being placed on the soft tissues.

(9) Repetition: Higher numbers of similar body movements over extended time periods may increase the risk of developing a RSI.

(10) Contact Pressure: Pressure resulting from leaning against or resting a body part on a sharp edge or hard surface can constrict blood flow.

### **b. Hazard Prevention and Control**

(1) Engineering controls are preferred over all other control methods because they involve designing the workstation to fit the individual and not the reverse. Examples of engineering controls most commonly used include the following:

(a) Workstation Design-Workstations should be easily adjustable and designed for each specific task so that they are comfortable for the employee and are appropriate for the job being performed. Specific attention shall be paid to static loading of muscles, work activity height, reach requirements, force requirements, sharp or hard edges, proper seating, support for the limbs, equipment orientation, and layout of the workstation.

(b) Work methods should be designed to reduce exposure to static, extreme and awkward postures, repetitive motions, excessive forces, inefficient grasps, and vibrations.

(2) Administrative controls reduce the duration, frequency, and severity of exposures to ergonomic hazards. An example would be to take rest pauses or breaks to relieve fatigued muscle-tendon groups. Administrative controls can be used in combination with other controls, but should not be used as the only control method for an ergonomics hazard.

### **c. Safe Operation Procedure:**

(1) **Pipetting:** Pipetting involves several ergonomic stressors-thumb force, repetitive motions, and awkward postures, especially of the wrists, arms, and shoulders. Pipetting is a highly repetitive task and involves a variety of risk factors. Musculoskeletal Disorders (MSDs) may occur when a laboratory worker pipettes for two or more hours a day on a continuous basis. The following features are recommended when working with pipette.

(a) Use pipettes with newer trigger mechanisms requiring less force to activate, and use the pointer finger to aspirate, and the thumb to dispense.

(b) Use pipettes that fit comfortably in the user's hand.

(c) For tasks such as mixing or aliquoting, use an electric.

(d) Use a multichannel pipettor for large aliquoting tasks.

(e) Use shorter pipettes. This decreases hand elevation and consequent awkward postures.

(f) Use low profile waste receptacles for used tips. They should be no higher than the top of the tubes being filled. Take micro-breaks of three to five minutes for every 20-30 minutes of pipetting. Mild hand exercise and stretches are beneficial.

(g) Clean pipettes on a regularly scheduled basis – this reduces “sticking” and improves quality of work.

(h) Adjust the workstation so the individual doesn’t have to work with arms in an elevated position. Work with arms close to the body.

(i) Use thin-wall pipettes that fit correctly and are easy to eject.

(j) Keep samples and instruments within easy reach.

(k) Use an adjustable stool or chair when sitting at a lab bench.

(l) If it is necessary to stand for long periods of time during pipetting, take micro-breaks of three to five minutes for every hour. Sitting and mild trunk and lower limbs exercise and stretches are beneficial.

**(2) Biological Safety Cabinet/Fume hood:** Using the following preventative measures when working with biosafety cabinets will help reduce the risk of Musculoskeletal Disorders:

(a) Prevent extended reaching by placing materials as close as possible but without disturbing proper air flow.

(b) Use a chair that provides adequate back support, and height adjustability.

(c) Use footrests for individuals whose feet do not rest comfortably on the floor.

(d) Remove cabinet doors from under biosafety cabinets in order to provide legroom.

(e) Position materials in the cabinet and on the bench top as close as possible to avoid extended reaching without compromising containment of the cabinet.

(f) Take frequent mini-breaks to perform stretching exercises.

**(3) Microscopy:** Operating a microscope for extended periods of time can put strain on the neck, shoulders, eyes, lower back, and arms/wrists.

Using the following preventative measures when working with microscope will help reduce the risk of Musculoskeletal Disorders:

(a) Make sure microscopes are set up at stations where good posture can be maintained when looking into the equipment. Adjust the height of the chair or the scope so there is no need to strain. Keep neck neutral and do not put chin forward when looking into the microscope. Make sure knobs on the microscope turn easily and are clean and avoid awkward finger and hand positions when turning them.

(b) Maintain a good posture, keeping the natural curve of the spine in place. Avoid static positions when standing for long periods of time. Move around.

(c) Avoid long sessions of repetitive motion by varying activities.

(d) Do not work with elbows winged-keep elbows close to sides.

(e) Try, as much as possible, to work with wrists in (straight) neutral position.

(f) Avoid forearm and wrist contact pressure.

(g) Avoid raising shoulders and bending neck while looking through microscope's eyepiece.

(h) Adjust microscope eyepiece's height to allow head and neck proper (upright) neutral posture.

(i) If possible use extended eye tube and/or variable height adapter to achieve proper neck and head position.

(j) Make sure scopes remain clean all the time and lighting is of proper intensity.

**(4) Computer Workstation.** Operating a computer for extended periods of time can put strain on the neck, shoulders, eyes, lower back, and arms/wrists. Using the following preventative measures when working with computer will help reduce the risk of Musculoskeletal Disorders:

(a) The keyboard and mouse should be directly in front of the operator at a height that favors a neutral posture. The objective is a posture with upper arms relaxed and wrists straight in line with the forearm.

(b) The monitor should be positioned at a distance of approximately arm's length and directly in front of the operator. The top of the screen should be no higher than eye level.

(c) An appropriately designed chair will favorably affect posture, circulation, the amount of effort required to maintain good posture, and the amount of strain on the back.

(d) The user should be able to adjust seat height from a seated position.

(e) Task lamps should be used to illuminate source documents when room lighting is reduced.

### **(5) Lifting and Material Handling**

(a) Know your intended route. If you need to clear objects in the pathway before you transport material, do so.

(b) Think before you lift-size up the object. Test the weight before trying to move it.

(c) To lift an object, place one foot behind and the other alongside of it. With your knee's bent, grip the object firmly with both hands. Keep your back straight and vertical and your chin, elbows, and arms tucked in tight. Then, with your body weight vertically over your feet, lift with your legs.

(d) When placing the load on the ground or surface, be sure that your feet are out of the way and lower the load in one motion. Lower the load by bending at the knees and keeping the back straight.

(e) If the object is either too bulky or too heavy, get someone to help you.

(f) When moving heavy or bulky loads, move in stages and rest between moves.

(g) When two or more people are carrying a heavy object, be sure to have a signal pre-arranged before lowering or releasing of the load. If you lose your balance or cannot maintain the load, try to push the load out and away from your body.

(h) When two or more people are carrying an object, especially long objects, over a long distance, every person shall face the same direction in which the object is moving.

(i) To set the load down, stop, place feet apart, and tell the other person or persons helping what you will be doing, the steps that will be taken, and what you expect them to do. Then, with your feet and hands out of the

way of any possible injury, lower the load in one motion. Again, remember to keep your back straight and lower the load by bending at the knees.

**(6) Workbenches:**

(a) Workbenches are designed for mainly light work – workbench height should be just below elbow height. Staff are encouraging to use a chair that provides adequate back support, adjustable seat angle and height adjustability at popliteal level.

(b) Remove drawers, supplies, and etc. from under the workbenches and cabinet doors from under biosafety cabinets in order to provide legroom.

(c) Position materials in the cabinet and on the bench top as close as possible to avoid extended reaching without compromising containment of the cabinet.

(d) Take frequent mini-breaks to perform stretching exercises.

**d. Medical Management:**

(1) Employees must be granted any temporary work restrictions that the employer or the OHS Officer/committee determines to be necessary.

(2) All employees should report signs and symptoms of MSDs as soon as they occur. Pain numbness and tingling in wrists, arm, elbows, neck, shoulders and back are early symptoms of MSDs.

**e. Training:** Ergonomic training is available for all employees. This training will consist of the following:

(1) Recognition of ergonomic hazards.

(2) Hazard prevention and Control

(3) Recognition of symptoms and reporting requirement.

**13. References**

1. Biosafety in Microbiological and Biomedical Laboratories. 2020. 6<sup>th</sup> Edition HHS Pub. No. (CDC) 93-8395
2. DoD Ergonomic Program Requirement and Procedures dated AUG 1998

3. George Washington University Ergonomics Program

<http://www.gwu.edu/riskmgnt/occupational-safety/ergonomics.pdf> date SEP 2203

4. Occupational Health and Safety in the Care and Use of Research Animals National Academy Press, Washington, DC 1997 available at <http://www.nap.edu>

5. OSHA Regulations and Guidelines: A Guide for Health Care Providers, 2002

6. University of Southern California Environmental Health and Safety Policy <http://policies/safety031504.pdf> dated MAR 2004 UNL Environmental Health and Safety <http://ehs.unl.edu> date AUG 2201

7. NUCAR SOP No. 07-01 Animal Bites Scratch and Other Injuries

8. NUCAR SOP No. 07-02 Injuries Precautions for Laboratory Animal Allergy

9. NUCAR SOP No. 07-03 Precautions for zoonotic disease

10. NUCAR SOP No. 07-04 Biohazard Waste and Sharps Management

11. NUCAR SOP No. 07-05 Emergency and Disaster Management

12. NUCAR SOP No. 07-06 Routine Prophylaxis and Screening

13. NUCAR SOP No. 07-07 Occupational Health for NUCAR Personnel

14. NUCAR SOP No. 07-08 Occupational Health for Visitors and Researchers of NUCAR

15. NUCAR SOP No. 07-09 การเบิกใช้และตรวจสอบยาและอุปกรณ์ในตู้ปฐมพยาบาลเบื้องต้น (First Aid Cabinet)

16. NUCAR SOP No. 07-10 Biosafety in Laboratory

17. NUCAR SOP No. 07-11 Chemical Safety

18. NUCAR SOP No. 07-12 Laboratory Waste Management

19. NUCAR SOP No. 07-13 Safety Equipments Usage

**สถานสัตว์ทดลองเพื่อการวิจัย มหาวิทยาลัยนเรศวร**  
**Naresuan University Center for Animal Research (NUCAR)**  
**เรื่อง นโยบายความปลอดภัย อาชีวอนามัยและสภาพแวดล้อมในการทำงาน**  
**Safety, Occupational Health and Environment Policy**

---

สถานสัตว์ทดลองเพื่อการวิจัย มหาวิทยาลัยนเรศวร ถือว่าการบริหารงานด้านความปลอดภัยอาชีวอนามัยและสภาพแวดล้อมในการทำงาน มีความสำคัญและจำเป็นต่อการดำเนินงานของหน่วยงาน โดยมุ่งมั่นส่งเสริมให้ทุกคนที่เกี่ยวข้อง ปฏิบัติตามนโยบายอย่างจริงจังและต่อเนื่องควบคู่ไปกับการพัฒนาหน่วยงาน เพื่อมุ่งมั่นสู่ความเป็นเลิศและความเป็นสากล โดยมีแนวทางยึดถือและปฏิบัติ ดังนี้

Naresuan university center for animal research concern that safety, occupational health and environment management is vital elements of organization's work process. Everybody shall follow this policy and continuously implement, in addition to the organization development to become the high performance and international organization. To accomplish the determined aspiration, all personnel shall

1. ปฏิบัติตาม นโยบาย ระเบียบข้อกำหนดและแนวทางที่เกี่ยวข้อง ในเรื่องความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน โดยยึดถือเป็นบรรทัดฐานเบื้องต้น  
 Comply with policy, and regulations related to safety, occupational health and workplace environment. Consider them as basic requirement.
2. สร้างกลไกด้านความปลอดภัยต่อชีวิตและทรัพย์สิน โดยมุ่งเน้นการบริหารความเสี่ยงและควบคุม การบาดเจ็บจากการปฏิบัติงาน  
 Establish mechanisms for safety to life and property. With a focus on risk management and operational control of injuries.
3. ดูแลในเรื่องอาชีวอนามัยและสภาพแวดล้อมในการทำงานของผู้ปฏิบัติงาน เพื่อหลีกเลี่ยง อุบัติเหตุ การบาดเจ็บ หรือการเจ็บป่วยจากการทำงานอย่างสม่ำเสมอ  
 Maintain proper occupational health and workplace environment in order to prevent accidents, injuries or work related illness.
4. ดำเนินงานโดยคำนึงถึงสิ่งแวดล้อม และการใช้ทรัพยากรอย่างคุ้มค่า ส่งเสริมการพัฒนาคุณภาพชีวิต ของชุมชน และรับผิดชอบต่อสังคม  
 Conducts all work with the environmental awareness and optimize the use of natural resources corresponding to improve the quality of lives in community and social responsibility.

จึงประกาศมาให้ทราบและถือปฏิบัติโดยทั่วกัน

ทั้งนี้ ตั้งแต่วันที่ กันยายน พ.ศ. 2557 เป็นต้นไป

ลงชื่อ ..... *Sujin Jinahyon* ..... ๒๒ / ๐๙ / ๒๐๑๔

( Prof.Dr.Sujin Jinahyon )

President of Naresuan University



**ประกาศมหาวิทยาลัยนเรศวร**  
เรื่อง นโยบายและแนวปฏิบัติด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน  
มหาวิทยาลัยนเรศวร

ตามที่ มหาวิทยาลัยนเรศวร ได้ตระหนักถึงความสำคัญของการดำเนินงานด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน จึงได้ดำเนินการพัฒนาและยกระดับตลอดจนการดำเนินงานด้านความปลอดภัยอย่างมีความสำนึกรับผิดชอบ (Accountability) ให้เป็นไปตามหลักสากล ตามพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๕๔ และกฎหมายที่เกี่ยวข้อง ทั้งของบุคลากร นิสิต นักเรียน และบุคคลภายนอก รวมไปถึงสภาพแวดล้อมของมหาวิทยาลัย ที่ถูกสุขลักษณะและปลอดภัย

อาศัยอำนาจตามความในมาตรา ๒๐ มาตรา ๒๑ และมาตรา ๓๗ แห่งพระราชบัญญัติมหาวิทยาลัยนเรศวร พ.ศ. ๒๕๓๓ ประกอบกับมติคณะกรรมการบริหารมหาวิทยาลัย ในการประชุมครั้งที่ ๑๔/๒๕๖๕ เมื่อวันที่ ๑๘ ตุลาคม ๒๕๖๕ ให้กำหนดนโยบายและแนวปฏิบัติด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน มหาวิทยาลัยนเรศวร ดังนี้

ข้อ ๑ ประกาศนี้ เรียกว่า “ประกาศมหาวิทยาลัยนเรศวร เรื่อง นโยบายและแนวปฏิบัติด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน มหาวิทยาลัยนเรศวร”

ข้อ ๒ ประกาศนี้ให้ใช้บังคับตั้งแต่วันถัดจากวันประกาศเป็นต้นไป

ข้อ ๓ ให้ยกเลิกประกาศมหาวิทยาลัยนเรศวร เรื่อง นโยบายและแนวปฏิบัติด้านความปลอดภัย ฮ่องกงปฏิบัติการ มหาวิทยาลัยนเรศวร ฉบับลงวันที่ ๑๑ มกราคม ๒๕๖๒

ข้อ ๔ ในประกาศนี้

“มหาวิทยาลัย” หมายความว่า มหาวิทยาลัยนเรศวร

“ส่วนงาน” หมายความว่า คณะ สถาบัน วิทยาลัย ที่จัดตั้งตาม พระราชกฤษฎีกา หมายรวมถึง คณะ สถาบัน สำนัก วิทยาลัย และหน่วยงานอื่น ๆ ที่จัดตั้งโดยอำนาจสภามหาวิทยาลัยที่มีฐานะเทียบเท่าคณะ

“บุคลากร” หมายความว่า ข้าราชการ พนักงานมหาวิทยาลัย ลูกจ้างในสังกัด มหาวิทยาลัย รวมถึงอาจารย์พิเศษ นักวิจัย/นักวิจัยร่วม และบุคคลอื่นใดซึ่งได้รับแต่งตั้งให้ปฏิบัติงานของมหาวิทยาลัย

“นิสิต” หมายความว่า นิสิตของมหาวิทยาลัย

“นักเรียน” หมายความว่า นักเรียนโรงเรียนมัธยมศึกษาที่มหาวิทยาลัยนเรศวร และให้หมายความรวมถึงนักเรียนโรงเรียนอนุบาลและประถมศึกษาที่มหาวิทยาลัยนเรศวร

“บุคคลภายนอก” หมายความว่า บุคคลที่มีใช้บุคลากร นิสิต และนักเรียน ซึ่งมีการทำงานหรือเข้ามาให้บริการภายในพื้นที่มหาวิทยาลัย

สำเนาถูกต้อง

๒๐๑  
(นางสาวธนิษฐา มุ่งดี)

“การทำงาน” หมายความว่า การดำเนินการเรียน การสอน การวิจัย การทดสอบ การฝึกอบรม ตลอดจนการปฏิบัติงานและการให้บริการทุกด้านในสายงานวิชาการและในสายงานสนับสนุนของ บุคลากร นิสิต นักเรียน และบุคคลภายนอก

“ความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน” หมายความว่า การกระทำหรือสภาพการทำงานซึ่งปลอดจากเหตุอันจะทำให้เกิดการประสบอันตรายต่อชีวิต ร่างกาย จิตใจหรือ สุขภาพอนามัยอันเนื่องมาจากการทำงานหรือเกี่ยวกับการทำงาน

“ห้องปฏิบัติการ” หมายความว่า ห้องปฏิบัติการทางกายภาพ เคมี ชีวภาพ ห้องปฏิบัติการทางวิศวกรรมและเทคโนโลยี ห้องปฏิบัติการแปรรูปอาหาร ห้องปฏิบัติการสัตว์ทดลอง โรงเรือนและแปลงเกษตรกรรมพืชและสัตว์ ห้องปฏิบัติการทางการแพทย์และสาธารณสุข ห้องปฏิบัติการทาง เกษษกรรมและเครื่องสำอาง หรือห้องปฏิบัติการอื่นใดที่มีการใช้สารเคมี วัตถุชีวภาพ และสิ่งส่งตรวจจากมนุษย์ สัตว์ และสิ่งแวดล้อม รวมทั้งห้องปฏิบัติการหรือพื้นที่ที่มีการดำเนินงานหรือการใช้เครื่องมืออุปกรณ์ และ กระบวนการทำงานที่ก่อให้เกิดความเสี่ยงทางกายภาพต่อผู้ใช้ เป็นต้น

“สิ่งปฏิภูล” หมายความว่า อุจจาระหรือปัสสาวะ และหมายความรวมถึงสิ่งอื่นใด ซึ่งเป็นสิ่งโสโครกหรือมีกลิ่นเหม็น

“มูลฝอย” หมายความว่า เศษกระดาษ เศษผ้า เศษอาหาร เศษสินค้า เศษวัตถุ ฝุ่นพลาสติก ภาชนะที่ใส่อาหาร เศษมูลสัตว์ ซากสัตว์ หรือสิ่งอื่นใด ที่เก็บกวาดจากถนน ตลาด ที่เลี้ยงสัตว์หรือ ที่อื่น และหมายความรวมถึงมูลฝอยติดเชื้อ มูลฝอยที่เป็นพิษหรืออันตรายจากชุมชน

“ของเสียอันตราย” หมายความว่า ของเสียประเภทใดประเภทหนึ่งหรือหลายประเภท รวมกันที่มีปริมาณ ความเข้มข้น หรือลักษณะทางกายภาพ เกี่ยวข้องกับสารเคมี สารกัมมันตรังสี ชีววัตถุอันตราย วัสดุนาโน รวมถึงฝุ่นแร่ใยหินจากการรื้อถอนอาคาร และสิ่งก่อสร้าง ซึ่งอาจเป็นสาเหตุหรือมีส่วนทำให้ มีการเสียชีวิตหรือการเจ็บป่วยอย่างรุนแรงที่รักษาไม่ได้เพิ่มขึ้นหรือก่อให้เกิดภาวะทุพพลภาพ ตลอดจน อาจก่อให้เกิดอันตรายหรือมีแนวโน้มจะก่อให้เกิดอันตรายต่อสุขภาพของมนุษย์หรือผลกระทบต่อสิ่งแวดล้อม

“วัสดุนาโน” หมายความว่า วัสดุที่มีขนาดอย่างน้อยหนึ่งมิติเป็นขนาดเท่ากับ หนึ่งในพันล้านเมตร (๑๐<sup>-๘</sup> เมตร) หรือมีโครงสร้างของพื้นผิวหรือของโพรงภายในมีขนาดเท่ากับหนึ่งใน พันล้านเมตร (๑๐<sup>-๘</sup> เมตร)

“ผลิตภัณฑ์นาโน” หมายความว่า ผลิตภัณฑ์ที่ใช้นาโนเทคโนโลยีเป็น องค์ประกอบในกระบวนการผลิต หรือผลิตภัณฑ์ที่มีวัสดุนาโนเป็นองค์ประกอบอยู่ด้วย ไม่ว่าจะฝังตัวอยู่ ในเนื้อผลิตภัณฑ์หรือเคลือบอยู่ที่ผิว

ข้อ ๕ นโยบายด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน

(๑) มหาวิทยาลัยตระหนักและให้ความสำคัญกับความปลอดภัยของบุคลากร นิสิต นักเรียน ตลอดจนบุคคลภายนอกในการทำงาน ทั้งในส่วนของ การวางแผน การดำเนินงาน และ กิจกรรมต่าง ๆ ของมหาวิทยาลัย

สำเนาถูกต้อง

  
(นางสาวธนัชชา มุ่งดี)

- ๓ -

(๒) มหาวิทยาลัยสนับสนุน ดังนี้

(ก) ให้มีการแต่งตั้งคณะกรรมการบริหารด้านมาตรฐานความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน เพื่อเสนอมหาวิทยาลัยออกข้อบังคับ ประกาศ คำสั่ง มาตรการ และแนวปฏิบัติด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ให้เหมาะสมและสอดคล้องกับมาตรการทางกฎหมาย

(ข) ให้ส่วนงานมีการปรับปรุงสภาพแวดล้อมในการทำงานที่เหมาะสม พัฒนาสิ่งอำนวยความสะดวกและโครงสร้างพื้นฐานที่เกี่ยวข้องกับด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงานตามสมควรหรือตามความเหมาะสมของบริบทของส่วนงานนั้น

(ค) ให้บุคลากร นิสิต นักเรียน ตลอดจนบุคคลภายนอกทุกคนปฏิบัติตาม ข้อบังคับ ประกาศ คำสั่ง มาตรการ และแนวปฏิบัติด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน

(ง) ให้มีการใช้ทรัพยากรอย่างเหมาะสม และมีระบบไฟฟ้า ระบบปรับอากาศ ระบบจัดการสิ่งปฏิกูล มูลฝอย ของเสียอันตราย วัสดุอันตราย และผลิตภัณฑ์อันตราย ที่มีประสิทธิภาพ มีคุณภาพ และปลอดภัย

(จ) การเสริมสร้างความรู้ความเข้าใจ จิตสำนึก และวัฒนธรรมความปลอดภัย ด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ในการทำงานที่ถูกต้องให้แก่บุคลากร นิสิต และนักเรียน

(ฉ) ให้มีระบบการประเมิน การจัดการ และการควบคุมความเสี่ยงในการทำงาน ทุกระดับอย่างเหมาะสมและต่อเนื่อง

(๓) มหาวิทยาลัยส่งเสริมความร่วมมือกับชุมชนข้างเคียง เพื่อเสริมสร้าง ด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน

ข้อ ๖ แนวปฏิบัติด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ให้เป็นไปตามประกาศมหาวิทยาลัยนเรศวร หรือแนวปฏิบัติที่คณะกรรมการกำหนดตามนโยบายของ มหาวิทยาลัยนเรศวร โดย

(๑) มหาวิทยาลัยกำหนดให้ความปลอดภัยในการทำงานถือเป็นหน้าที่รับผิดชอบร่วมกัน ของบุคลากร นิสิต นักเรียน และบุคคลภายนอกทุกคนในมหาวิทยาลัย

(๒) มหาวิทยาลัยกำหนดให้บุคลากร นิสิต นักเรียน และบุคคลภายนอกที่ทำงาน ในห้องปฏิบัติการที่เกี่ยวข้องกับสารเคมี สารกัมมันตรังสี วัตถุชีวภาพ สัตว์ทดลอง วัสดุอันตราย ผลิตภัณฑ์อันตราย และ ความเสี่ยงอื่น ๆ จะต้องผ่านการฝึกอบรมตามที่มหาวิทยาลัยกำหนด

(๓) มหาวิทยาลัยกำหนดให้ส่วนงานต้องมีผู้รับผิดชอบหรือคณะกรรมการ รวมทั้ง มีมาตรการที่เกี่ยวข้องกับความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน ระดับส่วนงาน เพื่อกำกับดูแลงานด้านความปลอดภัยภายในส่วนงานตามนโยบายที่มหาวิทยาลัยกำหนด

สำเนาถูกต้อง



(นางสาวนิตชา มั่งคั่ง)

- ๔ -

(๔) บุคลากร นิสิต นักเรียน และบุคคลภายนอก ต้องคำนึงถึงความปลอดภัยของตนเองและผู้อื่น ตลอดจนทรัพย์สินของมหาวิทยาลัยเป็นสำคัญ

(๕) บุคลากร นิสิต นักเรียน และบุคคลภายนอกทุกคนมีหน้าที่ปฏิบัติตามข้อบังคับ ประกาศ คำสั่ง มาตรการ และแนวปฏิบัติด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน รวมทั้งมาตรฐานความปลอดภัยในการทำงานที่เกี่ยวข้อง

(๖) บุคลากร นิสิต นักเรียน และบุคคลภายนอกทุกคนมีหน้าที่ให้ความร่วมมือในโครงการด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงานต่าง ๆ ของมหาวิทยาลัย

(๗) บุคลากร นิสิต นักเรียน และบุคคลภายนอกทุกคนมีส่วนร่วมเสนอความคิดเห็น ข้อเสนอแนะในการปรับปรุงสภาพการทำงาน และวิธีการทำงานให้ปลอดภัย

ข้อ ๗ นโยบายและแนวปฏิบัติด้านความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงานของส่วนงานให้เป็นไปตามที่ส่วนงานกำหนดโดยจัดทำเป็นประกาศส่วนงาน โดยให้คำนึงถึงความเหมาะสม ความสอดคล้องกับประกาศนี้ และภารกิจของส่วนงานเป็นสำคัญ

ข้อ ๘ ให้อธิการบดีเป็นผู้รักษาการตามประกาศนี้ ในกรณีที่มีปัญหาจากการปฏิบัติตามประกาศนี้ ให้อธิการบดีเป็นผู้วินิจฉัยและคำวินิจฉัยนั้นให้ถือเป็นที่สุด

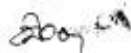
ประกาศ ณ วันที่ ๒๙ ตุลาคม พ.ศ. ๒๕๖๕



(รองศาสตราจารย์ ดร.ศรินทร์ทิพย์ แทนธานี)

รักษาราชการแทนอธิการบดีมหาวิทยาลัยนเรศวร

สำเนาถูกต้อง



(นางสาวธนัชชา มุ่งดี)