National Yang Ming Chiao Tung University (Taipei Municipality) Code of Safety and Health

Approved on July 21, 2111, by the 4th Environmental Safety Committee of National Yang Ming Chiao Tung University in the 110th academic year

Section I General Provisions

Article 1. In order to prevent occupational disasters and ensure the safety and health of workers, this Safety and Health Code (hereinafter referred to as this Code) is formulated in accordance with the relevant provisions of the Occupational Safety and Health Law (hereinafter referred to as the Occupational Safety Law).

Article 2. The terms used in this Code are defined as follows:

1. Worker: refers to a worker employed by the University and other people who are directed or supervised in work by the workplace manager.
2. Laborer: refers to a University staff member who is employed and paid to work. It also refers to an assistant who works for and has a labor contract with the University that provides remuneration for labor.
3. Place of work: The "place of work" within the scope of application of this Code includes the following places:
   (1) Places where the employer prompts the laborer to fulfill the contract and provide labor during the existence of the labor contract.
   (2) Other places where persons engaged in labor are directed or supervised by the workplace manager.

   "Workplace" refers to a place of work that is at the disposal and management of a person who accepts instructions from or acts on behalf of the employer in dealing with labor-related matters.

   "Operating environment" refers to a place in the workplace where work is done for a specific purpose.
4. Workplace Manager: refers to a person who manages, directs, or supervises the work of workers as an employer or on behalf of the employer at the workplace.
5. Occupational disaster: refers to the disease, injury, disability, or death of workers in the workplace caused by buildings, machinery, equipment, raw materials, materials, chemicals, gases, vapors, dust, etc., or occupational activities and other occupational causes.

Article 3. All workers who enter the workplaces of Yangming, Chengzhong, and Shilin campuses in Taipei should comply with the provisions of this Code.

Section II: Safety and Health Management of Undertakings and the Authority and Responsibilities of All Levels

Article 4. In accordance with the relevant provisions of the Occupational Safety Law, the following safety and health organizations are established:

1. Environmental Protection, Safety, and Health Committee (hereinafter referred to as Environmental Safety Committee).
2. Environmental Protection, Safety, and Health Center (hereinafter referred to as the Environmental Safety Center).
3. The Health Section of the Academic Affairs Office (hereinafter referred to as the Health Section).

Article 5. Authority and responsibilities at all levels:

1. The Principal's environmental safety responsibilities:
   (1) Approve the University's Environmental Safety Policy.
   (2) Serve as the head of the Environmental Safety Committee.
   (3) Instruct each unit to achieve the implementation of the relevant environmental safety and health operations.
   (4) Instruct all units to take necessary preventive equipment and measures in accordance with the provisions of relevant laws and regulations to protect workers from occupational disasters and protect their physical and mental health.
2. Tasks of the environmental safety committee:
   Consider, coordinate, and provide recommendations on the following matters:
   (1) Environmental protection policies and related operations
   (2) Safety and health policies and related operations
   (3) Operation of toxic chemical substances
   (4) Operations related to anti-radiation
   (5) Biological experiment safety-related operations
   (6) Controlled drug-related operations
3. Responsibilities of the Environmental Safety Center:
   (1) Formulate the relevant regulations, guidelines, measures, implementation points, and codes of the University’s environmental safety management.
   (2) Formulate occupational disaster prevention plans and guide relevant units to implement them.
   (3) Assist in planning and directing the environmental safety operations of each unit.
   (4) Assist in planning and directing the checkpoints and inspection of environmental safety facilities in various units.
   (5) Assist in planning and directing all units to implement inspection tours, regular inspections, key inspections, and the monitoring of the operating environment.
   (6) Plan and implement the University’s environmental safety education and training.

(7) Assist in planning and directing the operation, management, approval, preparation, recording, and reporting of hazardous chemical substances, biological materials, and radioactive substances in the experimental sites of each unit.
(8) Plan the classification, storage, and outsourced processing of hazardous wastes.
(9) Formulate emergency response plans and annual work plans.
(10) Investigation, analysis, and statistics of occupational disasters in the workplace.
(11) Other matters related to environmental safety management.

4. Duties of the Health Section:

Provide health management services for faculty and staff and handle labor health protection matters such as health examinations, health guidance, health promotion and management, occupational disease prevention, and on-site services in accordance with the provisions of the Labor Health Protection Rules.

5. The authority and responsibilities of the college-level unit (including the university-level research center) in charge of environmental safety operations:
(1) Environmental safety operations within the comprehensive management unit.
(2) Instruct supervisors at all levels within the unit to manage, direct and supervise relevant personnel and cooperate in handling or implementing environmental safety-related operations.
(3) Supervise and guide the subordinate units to handle accident and disaster investigation, handling, and statistics.
(4) Coordinate relevant units to deal with and solve the operational hazard factors posed by the workplace to which they belong.
(5) Other environmental safety matters within the unit.

6. The environmental safety operations responsibilities of the heads of all centers, departments, and institutes:
(1) Implement environmental safety management matters and occupational disaster prevention plan matters and appoint a safety and health specialist to assist in the handling of related operations.
(2) Conduct regular inspections, key inspections, operation inspections, and other relevant inspection supervision in accordance with the automatic inspection plan of the university.
(3) Carry out inspection tours on a regular or irregular basis.
(4) Draft experiment safety operation standards.
(5) Teach and supervise the implementation of safety operation standards and methods.
(6) Cooperate in handling environmental safety education and training and emergency response drills.
(7) Handle the investigation of occupational disasters and compile the occupational disaster statistics of the unit.
(8) Assist in handling and investigating the cause of accidents when they occur.

(9) Matters related to environmental safety assigned by the dean.

(10) Other matters stipulated in environmental safety regulations.

7. The authority and responsibilities of the safety and health personnel of all centers, departments, and institutes:

(1) Handle the handover of environmental safety work by the heads of institutes, centers, departments, and the Environmental Safety Center.

(2) Assist the workplace managers of the institute, center, and department in the implementation of environmental safety work.

(3) Promote and advocate the relevant environmental safety regulations related to the institute, center, and department.

8. Environmental safety authority and responsibilities of the workplace manager:

(1) Supervise workplace personnel to truly abide by the safety and health work code.

(2) Carry out environmental safety management matters in the workplace under its jurisdiction and receive directing and suggestions from the Environmental Safety Center when premises are newly established.

(3) Analyze and assess possible hazard factors in the workplace, formulate safe operating codes, and carry out lectures and training related to environmental safety for subordinate personnel.

(4) Immediately eliminate or remedy potential hazards in the workplace.

(5) Determine the necessary maintenance and inspection of machinery, instruments, and equipment, and make records. Hazardous machinery or equipment should be inspected by the inspection agency before it can be used and operated by qualified personnel. When provided to students for training, it should be personally operated and supervised by qualified operators.

(6) Frequently inspect the workplace. Correct, supervise, and stop unsafe actions.

(7) Provide appropriate environmental safety protective equipment and supervise subordinate personnel in correctly wearing them.

(8) Implement the reporting of operation records of toxic chemical substances and the classification, labeling, and safe storage of waste liquids.

(9) Respond urgently in the event of an accident and formulate countermeasures for improvement.

(10) Implement other matters related to environmental safety.

9. Responsibilities and obligations of supervisors at all levels, workplace faculty, and student staff:

(1) Abide by the University's Safety and Health Work Code and Environmental Safety Laws and Regulations.

(2) Wear lab clothes and shoes when entering the workplace to conduct experiments. Slippers are strictly prohibited. In conjunction with the special operations of each place, wear or put on appropriate personal protective equipment.

(3) All experiments and tests should comply with standard operating procedures.
(4) Undergo general and special physical examinations and health examinations and comply with the recommendations of the examination results.
(5) Receive relevant environmental safety education and training and emergency response drills.
(6) Each unit should carry out operation inspection and inspection in accordance with the automatic inspection plan of the university. Inspect the working environment and equipment before operation and if there is an abnormality, immediately adjust it and report to the division chief or the workplace manager.
(7) Regularly inspect, maintain, and update personal protective equipment, and maintain the organization, rectification, cleanliness, and discipline of the premises.
(8) Assist new staff in understanding the operating procedures and the use of safety and health equipment and facilities.
(9) Have a good understanding of the emergency accident response system, notification, on-site handling, and assistance in occupational disaster investigation.
(10) Handle other unfinished matters in accordance with the relevant provisions of the Environmental Safety and Sanitation Regulations.

Section III Maintenance and Inspection of Machinery, Equipment, or Appliances

Article 6. Equipment and facilities that conform to safety and health standards should be installed regarding the following points:
(1) Prevent hazards caused by machinery, equipment, or appliances.
(2) Prevent hazards caused by explosive or flammable substances.
(3) Prevent hazards caused by electricity, heat, or other energy.
(4) Prevent hazards caused by quarrying, mining, loading, unloading, handling, accumulation, or logging.
(5) Prevent hazards caused by operating environments that are in danger of collapse, falling objects, or caving in.
(6) Prevent hazards caused by high-pressure gases.
(7) Prevent hazards caused by raw materials, materials, gases, vapors, dust, solvents, chemicals, toxic substances, or hypoxic air.
(8) Prevent hazards caused by radiation, high temperatures, low temperatures, ultrasonic waves, noise, vibration, or abnormal air pressure.
(9) Prevent hazards caused by monitoring instruments or precision operations.
(10) Prevent hazards caused by waste gas, liquid waste, or residue.
(11) Prevent hazards caused by floods, windstorms, or fires.
(12) Prevent hazards caused by animals, plants, or microorganisms.
(13) Prevent hazards caused by passages, floors, or stairs.

(14) Prevent hazards caused by inadequate ventilation, lighting, lights, insulation, or moisture protection.

Article 7. Regarding machinery, equipment, or appliances in the workplace, the requisitioning unit should confirm that the specifications, safety operating procedures, or standards provided by the manufacturer comply with the safety and health standards specified in the preceding article and are inspected and checked in accordance with the automatic inspection plan when used.

Regarding machinery or equipment designated as dangerous, they should be inspected by the labor inspection agency, or the agency designated by the Ministry of Labor to be qualified for use. The operator should be trained by the Ministry of Labor or have passed skill verification before he or she can operate. The inspection certificate should be posted in a conspicuous area of the facility. When provided to students for training, machinery should be personally operated and supervised by qualified operators.

Regarding machinery, equipment, or appliances designated by the Ministry of Labor or announced for inclusion in type verification, products with safety labels or conformity seals should be purchased and their safety protection performance maintained.

Article 8. Machinery, equipment, or apparatus found or reported to be dangerous or harmful during regular inspections or inspection points should be reported immediately to the workplace manager, immediately overhauled, and necessary measures be taken. It must not be opened for use until it is confirmed that maintenance is normal or tested for safety.

The sweeping, oiling, inspection, repair, or adjustment of machinery, equipment, appliances, operating facilities, or other rotating parts of machinery, equipment, or other mechanical equipment should be carried out only after it has ceased to operate completely. To prevent others from erroneously operating or feeding the starting device, measures such as locking or setting up signs should be adopted, and the power supply blocked if necessary.

Article 9. The maintenance and inspection of ionizing radiation equipment should be handled in accordance with the relevant provisions of the Atomic Energy Regulations.

Section IV Safety and Health Standards at Work

Article 10. General Safety and Health Work Code:

(1) Understand the environment and remember the matters prompted by the workplace manager before entering.

(2) Keep the workplace neat and clean. Place pharmaceutical instruments in position.

(3) Wear the necessary safety protective equipment when working. Choose the safest working method.

(4) Operate various mechanical facilities in accordance with the regulations. The operator

should not leave without authorization after the machine is started, and the machine should not be used at will when others are operating.

(5) Before operating, the work essentials, regulations, and operating methods of the tools should be fully understood.

(6) Any mechanical safety protection facility may not be dismantled without permission.

(7) When work is completed or when work is left, tools must be counted, and the site must be cleaned up.

(8) Food and beverages should not be placed in the refrigerator with chemicals, and while working it is strictly forbidden to eat, drink, drink alcohol, chew betel nut, or engage in other acts that hinder work.

(9) Do not use your hands to test machines without an inside view.

(10) Do not use your feet to probe anything or block objects that roll or slide.

(11) Running, playing, and engaging in non-work-related activities are prohibited in the workplace.

(12) Items cannot be stacked in front of workplace entrances and exits, safety doors, stairs, and firefighting equipment in order not to hinder escape.

(13) The maximum safety load mark of the implement should be clearly visible.

(14) Read the safety data sheet for the drug in detail before the experiment.

(15) Before equipment and instruments are used, the operation manual should be read carefully, and the equipment operated according to normal procedures. Instruments and equipment that are not used any longer should be turned off.

(16) Familiarize yourself with the location and use of fire extinguishers and first aid kits near the workplace.

(17) Avoid operating a hazardous experiment alone in the lab.

(18) Wash your hands thoroughly before leaving the workplace.

(19) After the experiment is completed, check whether the water, electricity, gas, and gas cylinders are turned off.

Article 11. Laboratory Safety Code:

1. Avoid dangerous behavior during operation:
   (1) It is forbidden to play and frolic during an operation.
   (2) Follow the correct acid-base dilution order.
   (3) Transfer liquid to a safe suction ball. Do not suck with your mouth.
   (4) When pouring corrosive liquids, they should be transferred through a funnel and done on the sink or with gloves.
   (5) If infectious biomaterials are in use, they should be handled in a second-level biological laboratory.
   (6) Other workplaces regulate their own operations.
2. Operation and management of high-pressure gas cylinders:
   (1) The cylinder should be marked with the type of gas to avoid misuse.

(2) The gas in the cylinder should be confirmed before the experiment.
(3) The outer color of the cylinder should not be changed or erased without authorization.
(4) The cylinder should be secured, and the temperature of the storage place should not exceed 40 degrees Celsius.
(5) After replacing the cylinder, check whether the container mouth and the pipe joint are leaking.
(6) The switch handle of the cylinder should be removed when it is not in use.
(7) The cylinder should be properly managed, and the person in charge of the place and the maintenance unit should be notified immediately if deformation and air leakage are found. It should be handled as quickly as possible.

3. Transport and storage of chemicals or equipment:
(1) Wear protective gear and transport it safely.
(2) Chemicals or equipment should not be stacked high to avoid difficulties in handling or collapse.
(3) When using stacked chemicals or equipment, they should not be extracted from the lower end.
(4) Maintain the normal operation of ventilation equipment.

4. Electrical equipment safety and prevention:
(1) The maintenance of electrical equipment and wire circuits should be strictly in accordance with the electrical safety regulations and procedures.
(2) Extension cords should not be connected to too many electrical appliances to avoid overload and fire.
(3) Repair electrical equipment at any time, and in case of major electrical failure or electrical fire, the power supply should be cut off and the incident immediately reported.
(4) The switch should not be operated with wet hands or wet operating rods, and electrical equipment should be kept away from water sources.
(5) Except for equipment that is completely wrapped in plastic, all electrical appliances in the laboratory should be grounded.
(6) If electrical equipment or circuits catch fire, immediately turn off the power supply and then extinguish the fire with non-conductive fire extinguishing equipment.
(7) All electrical equipment shell grounding wires should not be arbitrarily removed.

5. Safe operation of a centrifuge:
(1) Confirm the safety design device of the centrifuge cover.
(2). Inspect whether the centrifugal sleeve gasket cover or rotor lid round pad ring is properly fitted.
(3). Confirm that the casing mounted on the horizontal centrifuge head is consistent.
(4). Confirm that the material of the tube to be used meets the required speed or centrifugal force.

(5). In general, the sample volume of the centrifugal tube is moderately adjusted according to the different centrifugal angles. Overfilling must be avoided, or it will overflow during centrifugation.

(6). If infectious biological material needs to be centrifuged in an ultra-high-speed centrifuge, it should be operated in the second-level biosafety cabinet before and after the centrifuge rotation is stopped. When the potentially infectious specimen is removed, the centrifuge tube must be transferred to the biosafety cabinet to open to prevent spillage or gas gel from causing infection.

6. Safe operation of a biological waste sterilization boiler:

(1) The biological waste to be sterilized should not exceed two-thirds of the boiler volume.

(2) Biological waste needs to be packed in a special sterilization bag for sterilization before it can be sent into the high-temperature and high-pressure steam sterilizer.

(3). Tape the sterilization bag mouth with sterilization temperature indicator tape and label the bag with laboratory information.

(4) Sterilization standards for biological waste sterilization boilers:

A. Temperature above 121 degrees Celsius, pressure 15 pounds/square inch or more (1.06 kg/cm2), length of time more than 60 minutes (excluding heating, pressure increase, and pressure reduction time).

B. Temperature above 135 degrees Celsius, pressure 31 pounds/square inch or more (2.18 kg/cm2), length of time more than 45 minutes (excluding heating, pressure increase, cooling, and pressure reduction time).

(5) Keep the boiler door closed tightly.

(6). When the sterilization is completed, confirm that the pressure in the boiler has returned to zero before opening the boiler door.

(7). Biological waste sterilization boilers should be tested for effectiveness regularly.

7. Radiation Safety Operation and Management:

(1) Possess a radiation safety certificate, a radiation protection specialist, radiation protection staff, or a radiologist license before operating permitted radioactive substances and equipment capable of generating ionizing radiation. Possess a certificate of completion of radiation training for more than 18 hours, a certificate of radiation safety, a radiation protection specialist, radiation protection staff, or a radiologist license and register radioactive substances before operating equipment capable of generating ionizing radiation.

(2) Workplaces with permitted sealed radioactive materials and ionizing radiation equipment:

A. Staff entering and leaving the control area should be subject to the consent and registration of radiation protection personnel and should comply with the relevant safety work regulations. Wear a dosimeter and wear special overalls as needed.

B. It is strictly forbidden to eat, drink, store food, and apply cosmetics in the radioactive control area. All supplies unrelated to work should be strictly prohibited from being brought in.

C. After the use of the irradiator is completed, in addition to turning off the irradiator, the user should record the operation status of each safety monitoring system function at the time. If there is an abnormal operation condition, the management personnel should be notified immediately. The key should be personally returned to the management personnel.

D. The workplace should be regularly monitored to ensure the safe use of the radiation source. If there is a radiation leakage, management and the Environmental Safety Center should be notified immediately.

(3) Workplaces with un-sealed radioactive materials:

A. It is strictly forbidden to eat, drink, store food, and apply cosmetics in the radioactive material treatment room.

B. Do not use your mouth or straw to absorb any radioactive material. Wear waterproof gloves when operating radioactive materials to avoid direct contamination of the skin.

C. Special care should be taken when working to avoid splashing and spilling radioactive materials or the escape of radioactive gases.

D. Radioactive test tube sleeves or utensils should be placed in a tray with absorbent paper. Paper or waste stained with radioactivity should be disposed of in accordance with the radioactive waste disposal method.

E. Wear a film badge as needed when working. Wear personal protective equipment such as work clothes, gloves, and shoes, and replace them in the designated place when leaving the workplace. Wash your hands thoroughly.

F. Contaminated utensils should be thoroughly cleaned or stored before use when the radioactivity decays to near the background value.

G. When a staff member is cut by an instrument while working, it should be checked immediately. If contamination is found, it should be properly treated by medical professionals, diagnosed, and treated.

H. The workplace should be inspected regularly. If there is any contamination, it should be immediately isolated, and a radiation protection professional called to the scene to deal with it.

Article 12. Use of personal protective equipment:

1. During experiments, the necessary personal protective equipment such as goggles, safety shoes, test clothes, protective gloves, and gas masks should be worn according to the characteristics of the chemicals used.
2. Treatment of chemical spills:

(1) Be familiar with the location and use of eyewashes and emergency shower devices.

(2) Rinse the affected part with a large amount of water first and then see a doctor for treatment as soon as possible.

(3) Notify the relevant units to handle it according to the emergency notification system of the university.

3. Protection against toxic gases:

(1) When toxic gas is leaked, the gas cylinder should be closed immediately.

(2) Emergency air masks can only supply pure air for a limited period of time.

(3) Select appropriate functional respiratory protective equipment according to the type of hazard.

4. Correct use of the exhaust cabinet: Toxic, flammable, and volatile pharmaceutical materials should be placed in the exhaust cabinet to operate. It should be checked once a month and a notice posted on the exhaust cabinet. The inspection report should be posted on the exhaust cabinet for carrying out annual inspections.

5. Clothing during operation: When there is a risk of splashing substances, the eyes, body, hands, and feet should be properly protected. If clothes catch fire, you can use fire blankets, lab clothing, etc. to wrap and roll the body to extinguish the fire or use the emergency shower device to put out the fire.

6. Specifications for Level 2 Biological Laboratories:

(1) Wear lab clothing, shoes, double gloves, and masks when entering the laboratory.

(2) Install a second-level biosecurity operation cabinet that meets the specifications. The Environmental Safety Center conducts regular testing every year.

7. Radiation protection:

When operating or using radioactive materials and equipment where ionizing radiation can occur, radiation protective clothing (e.g., lead clothing) and personal film badges may be appropriately worn.

Article 13. Management of chemical drugs:

1. Chemicals should be labeled with:

(1) Schema.

(2) Contents:

A. Name.
B. Main ingredients.
C. Hazard warning.
D. Hazard prevention measures.
E. Name, address, and telephone number of the manufacturer or supplier.

2. Each hazardous chemical should be equipped with a safety data sheet (SDS) and placed in a conspicuous place in the operating environment to provide workers with the necessary safety and health precautions.

3. The list of hazardous chemicals should be prepared in the operating environment for future reference and should be updated after the completion of the operation report

every quarter.

4. The correct operation method and sequence of special chemicals are as follows:
   (1) Alkali metal reacting with water has the danger of fire and explosion.
   (2) Alkali metal will burn when it comes into contact with skin.
   (3) Alkali metals should be stored in light oil. It should be cooled in alcohol after destruction.
   (4) Spilled mercury may be removed with a vacuum suction or covered with sulfur powder.
   (5) When strong acids and strong bases are spilled, they can be neutralized with neutralizing agents and then removed.
5. Correct storage and handling of flammable liquids:
   (1) Mark clearly.
   (2) Store and classify correctly.
   (3) Pay attention to the storage compatibility of flammable liquids.
   (4) Keep away from fire.
6. When using chemicals, it is necessary to understand the toxicity of chemicals and follow safe operating methods so as not to endanger yourself and others.
7. The last person to leave the laboratory each day must make sure to turn off all power and air sources.

Article 14. Radiation Source Management:

1. The use of radioactive materials and equipment capable of generating ionizing radiation may be subject to the approval of the competent authorities.
2. Radioactive materials and radiation sources such as equipment that can generate ionizing radiation should be recorded and conspicuously labeled “Relocation, modification, transfer, export, and scrapping should be authorized by the Atomic Energy Commission of the Executive Yuan.”
3. Un-sealed radioactive material should be placed in the lead container provided by the manufacturer and stored in a lockable refrigerator according to its characteristics. A radiation warning sign should be posted on the door of the refrigerator. The refrigerator key should be kept by a designated person.
4. Reporting Matters:
   (1) The use, cessation of use, or holding of sealed radioactive materials should be reported to the competent authority online before the 15th of each month.
   (2) The annual detection certificates of permitted radiation sources (containing radioactive materials and equipment or facilities capable of generating ionizing radiation) should be reported to the competent authorities online before December 31 of each year.
   (3) The discharge records of wastewater and waste gas containing radioactive substances should be reported to the competent authorities online before July 15 of the current year and January 15 of the following year.

Article 15. Waste management:

1. Chemical waste treatment:
   (1) Chemical waste is temporarily stored in firm cardboard boxes or containers in accordance with the "Principles for the Treatment of Chemical Wastes" in this jurisdiction and clearly labeled.
   (2) Chemical waste solutions should be classified in accordance with the "Principles for The Treatment of Chemical Wastes" in this jurisdiction and placed in a waste liquid tray to avoid being knocked over or leaking.
   (3) Incompatible wastes should not be stored together; If there is a hazard of mingling substances, please refer to the Safety Data Sheet (SDS).
   (4) Chemical waste and waste solutions should be disposed of and treated regularly.
2. Biological waste treatment:
   (1) Biological waste or solid waste produced by laboratories is usually temporarily stored in firm cardboard boxes, containers, or special bags for classified storage and clearly labeled.
   (2) After collecting biological waste and solid waste produced by the laboratory, it should be disposed of regularly.
3. Radioactive waste treatment:
   (1) The discharge of wastewater and waste gases containing radioactive waste substances from each radiation workplace should be assessed by Radiation Safety, submitted to the competent authority for approval, recorded, and reported in accordance with the provisions of the competent authority.
   (2) Collect and package solid radioactive wastes by category according to flammability and non-flammability in 35 cubic cm cardboard boxes lined with plastic bags. Align the mouth of the plastic bag and the cardboard box and seal with sealing tape. Transport to the radioactive waste storage room for temporary storage.
   (3) Collect liquid radioactive wastes according to organic waste liquid, inorganic waste liquid, organic tritium-containing waste liquid, and inorganic tritium-containing waste liquid. After being sorted according to the type of waste liquid, store separately in 20-liter corrosion-resistant containers and transport them to the radioactive waste storage room for temporary storage.
   (4) Radioactive waste produced by the laboratory should be transported to the Nuclear Energy Research Institute of the Atomic Energy Council of the Executive Yuan for disposal by manufacturers who have passed the examination of the Atomic Energy Council of the Executive Yuan.

Article 16. Security Monitoring:

1. The wind speed of the chemical exhaust cabinet should be measured regularly to maintain normal function.
2. Fire extinguishers should be tested or replaced regularly to maintain their function.
3. When changing cylinders, leakage should be measured, and the joints should be tested

regularly to prevent gas leakage. The pipeline connecting the cylinder should be inspected regularly and corrosion or rupture prevented.

4. The biological waste sterilization boiler should be tested regularly for sterilization in accordance with regulations to maintain a safe state of waste sterility.
5. The wastewater and waste gases containing radioactive substances discharged by each radiation workplace should be assessed for radiation safety, submitted to the competent authority for approval, recorded, and reported in accordance with the provisions of the competent authority.
6. Places using un-sealed radioactive substances should test the contamination state of their operating environment after each or monthly operation, wipe and sample once from the radiation operating environment, and send them to the Environmental Safety Center for unified reading in the medical release system machine and for making records.
7. Verify the status of radiation source use (including sealed radioactive materials and licensed equipment that can generate ionizing radiation) every six months and keep records for future reference.
8. Conduct annual wiping tests for those who use or hold sealed radioactive materials with a half-life of beta or Gamma with an activity of more than 3.7 million becks (3.7 MBq) or alpha nuclear species with an activity of more than 370,000 becks (370 kBq) and keep records for future reference.

Article 17. Environmental cleaning and maintenance:

1. Keep the workplace neat and clean at all times.
2. Debris should not be placed on the lab site besides the instruments, facilities, and equipment related to the experiment.
3. Floors, passageways, and sinks should not be arbitrarily stacked with debris.
4. The passage between each machinery and equipment should not be less than 80 cm. The main sidewalk in the workplace should not be less than 1 meter and should not be slippery.

Article 18. The prevention of dust operation hazards should comply with the following matters:

1. Be equipped with dust masks and other necessary protective equipment during dust tasks, and do not arbitrarily remove them during operation.
2. Protective equipment should be kept clean at all times to maintain its performance.
3. Powdered raw materials, semi-finished products, and finished products should be placed in the designated storage place and properly packaged to prevent dust from escaping.
4. Keep the workplace clean and tidy at all times to prevent excessive dust accumulation.
5. During the operation, the local exhaust device or the overall ventilation device should not stop running.
6. Operators should be aware of the necessary precautions for preventing dust hazards.

Article 19. Prevention and management of biological hazards:

For those who are injured by needles or sharp objects contaminated by biological pathogens in their operations, a system for the investigation of the damage of the infection should be established and the following measures should be taken:

1. Designate a person to be responsible for receiving reports, investigations, processing, tracking, recording, etc. Retain the relevant records for 3 years.
2. Investigate the hazards and sources of infection from injury caused by needles or sharp objects. However, if the investigation of the source of infection requires a blood test on a case-by-case basis, it should be done with the consent of the person concerned.
3. Those who are at risk of infection should be subjected to health examinations for specific items. On the physician's recommendation, blood collection and preservation, preventive drug administration, and other necessary preventive measures should be taken for injured workers.

Article 20. The lab site should prepare the following safety and health protection facilities:

1. Emergency showering and eye washing equipment.
2. Fire extinguishers
3. Personal protective equipment
4. Local exhaust facilities
5. First aid kit

Section V: Education and Training

Article 21. Workers are obligated to receive occupational safety and health education and training necessary for their work and for the prevention of catastrophes.

Article 22. Occupational safety and health education and training matters:

1. Safety and health education and training are divided into typical workplaces and lab sites according to the nature of the workplace.
2. The content of safety and health education and training in general places is mainly based on the necessary education and training related to work and disaster prevention. Training for new entrants should not be less than three hours and at least three hours every three years for incumbents.
3. The relevant provisions of safety and health education and training at the lab site are as follows:
   (1) Undergo three hours of safety and health education for the lab site including the general safety and health rules and first aid protection instructions before entering the lab site.
   (2) Undergo three hours of hazard general education training including the general hazard rules, chemical hazards, chemical labeling, safety data sheet introduction, the operation of toxic chemical substances, waste management, etc. before entering a chemical lab.
   (3) Undergo three hours of radiation protection education and training including ionizing radiation awareness, use specifications, radiation protection plans, and radiation waste management before entering a radioactive lab.

(4) Undergo eight hours of biosecurity education and training including the introduction of the biological experiment site, the description of material hazards, and the management of biomedical waste before entering a bio lab.

(5) Except for biosafety education and training, which is valid for one year and requires at least four hours of retraining each year after the period expires, the validity period of other types of training is three years. At least three hours of retraining are required every three years after the period expires.

Article 23. A person overseeing hazardous operations (organic solvents, specific chemical substances or dust operations, etc.) in a designated place in accordance with the law should be subject to advance training approved by the central competent authority.

Article 24. Operators of dangerous machinery or equipment listed in the rules of occupational safety and health education and training or special operators (such as boilers and first pressure vessels, etc.) must pass the training or skill verification recognized by the central competent authority before they may be appointed.

Article 25. Possess the necessary qualifications before starting work mentioned in other laws and regulations. It should be handled in accordance with its laws and regulations.

Section VI: Health Guidance and Management Measures

Article 26. Occupational medical specialists hired or specially contracted in accordance with the labor health protection rules and the employment of nursing personnel (hereinafter referred to as medical personnel) should handle health protection matters:

1. Health management: for instance, hierarchical management of general and special health examinations, statistical analysis of occupational injury and disease, health risk assessment, and other measures.
2. Health promotion: for instance, the health of faculty and staff students, health education and guidance, work stress relief, and other mental health promotion programs.
3. Assist in the prevention of occupational diseases: Detect potential health hazard factors according to the hierarchical management of health examinations. Provide on-site occupational health care consultation and education advocacy.

Article 27. Workplace workers have the obligation to undergo physical examinations, regular health examinations, and health examinations for specific items.

1. New recruits should undergo a physical examination before starting employment.
2. Incumbents: General health examinations should be carried out in accordance with the following provisions:
   (1) Those who are over 65 years old should be examined once a year.
   (2) Those who have reached the age of 40 but have not yet reached the age of 65 should be examined every three years.
   (3) Those under the age of 40 should be examined every five years.
   (4) Special hazard operators: undergo a special health examination once a year.

The inspection records in the preceding paragraph should be submitted to the Health Group to be retained for at least seven years and should be subject to graded health management, abnormality tracking management, and health guidance.

Article 28. When a worker is unwell or abnormal in the workplace, he or she should immediately be reported to the workplace manager or the Health Group.

Article 29. The workplace manager should not allow pregnant female workers to engage in the following dangerous or harmful work:

1. Mining work
2. Work where lead and its compounds are dispersed
3. Work under abnormal air pressure
4. Handling or exposure to toxoplasma, German measles, etc. which affects the health of the fetus.
5. Handling or exposure to carbon disulfide, trichloroethylene, ethylene oxide, acrylamide, ethyleneimine, arsenic and its compounds, mercury and its inorganic compounds, and other substances classified as hazardous chemicals by the central competent authorities.
6. Rock drills and other work with significant vibrations.
7. Handling heavy objects above a certain weight.
8. Work in places where harmful radiation is dispersed.
9. Handling melted minerals or slag.
10. Operating cranes and boom derrick cranes.
11. Operating power hoists, power carriers, and ropeways.
12. Rolling rubber compounds and synthetic resins.
13. Handling or exposure to work that is classified by the central competent authority as carrying a risk of infection by microorganisms that cause illness or death.
14. Other work which is dangerous or harmful as classified by the central competent authority.

Female workers who have given birth less than 1 year ago should not engage in the following dangerous or harmful work:

(1) Mining work.
(2) Work where lead and its compounds are dispersed
(3) Rock drills and other work with significant vibrations.
(4) Handling heavy objects above a certain weight.
(5) Other work which is dangerous or harmful as classified by the central competent authority.

The work stipulated in paragraphs 5 to 14 and paragraphs 3 to 5 of the preceding item are not included when there is the written consent of the parties according to maternal health protection measures taken in accordance with the Occupational Safety Law.

Article 30. The workplace manager should promote and implement the following prevention and protection plans to protect the physical and mental health of workers:

1. Human Factor Hazard Prevention Plan

2. Abnormal Workload-Induced Disease Prevention Plan
3. Unlawful Violations While Conducting Duties Prevention Plan
4. Maternal Health Protection Plan

Section VII: First Aid and Rescue

Article 31. The workplace manager should prepare sufficient first-aid drugs and equipment in accordance with the hazards in the workplace. In the event of an occupational disaster in the workplace, the relevant personnel should immediately take the necessary first aid and rescue measures, and carry out investigation, analysis, and record-keeping.

Article 32. Each unit should send the appropriate personnel to receive training from first aid personnel to facilitate the rescue of the wounded.

Article 33. When an accident occurs, the injured should be rescued immediately, and ambulance personnel, wearing appropriate protective equipment, should promptly rush to the scene to perform their tasks.

Before first aid, make sure that there is no further danger to the injured person or yourself. First aid treatment is only to maintain the life of the injured person or to avoid the expansion of the injury. For the seriously injured, they should be urgently sent to a medical institution for further treatment.

Any incident of injury should be reported immediately to the workplace manager and should not be concealed or unreported.

Article 34. When there is a fire or toxic substances are leaked or there is a risk of leakage, rescue personnel should wear appropriate protective equipment.

Article 35. General principles of first aid:

1. When an accident occurs and a person is injured, the unit where the accident occurred should immediately send for personnel to rescue the injured person from the dangerous area and give first aid. Do not leave the injured person until the ambulance or paramedic has arrived.
2. Flushed wounded people should have their heads raised, and those pale with signs of shock should have their heads lowered.
3. People who are delirious, comatose, unconscious, and may need to be anesthetized should not be given food or drinks.
4. Be skilled in CPR to maintain respiratory and blood circulation in injured people.
5. First responders should assist the injured person in describing the injury condition and the agent of injury to help medical staff and doctors diagnose and treat.
6. Emergency handling of injuries:
   (1) Before carrying the wounded, the injured person should be secured and examined for injuries to the head, neck, chest, abdomen, and limbs.
   (2) Keep the injured person in a comfortable position as much as possible.
   (3) If the patient needs to be transported to a safe place, they should be dragged in the direction

of the body's long axis.

(4) Handling equipment must be secure.

Article 36. Principles of first aid for special injuries:

1. Principles of first aid for burns:
   (1) Flush: Rinse the body with water for at least thirty minutes. If the eye is injured, open the eyelids and rinse slowly from the inside out for more than five minutes.
   (2) Remove: If the skin is clothed, cut open the clothes while flushing with water to avoid continuous damage to skin tissue or expansion of the wound.
   (3) Soak: Soak the wound in water without breaking any blisters.
   (4) Cover: Cover gently using clean, damp gauze to avoid infection.
   (5) Send: Get to the doctor as soon as possible.
2. Inhalation poisoning:
   (1) Rescuers should wear appropriate respiratory protective equipment to enter the disaster site and open the vents first.
   (2) If the toxic gas is a flammable gas, the power switch should not be turned on arbitrarily.
   (3) Move the patient to a place where fresh air circulates and loosen garments so that airways are unobstructed.
   (4) People with unclear consciousness and difficulty breathing should be given oxygen.
   (5) People who have stopped breathing should be given artificial respiration to maintain the functioning of the respiratory system.
   (6) People whose heartbeat has stopped should be massaged to maintain the functioning of the circulatory system.
   (7) Send to the doctor for emergency treatment and keep warm so as not to lose temperature in the body.
3. Mistaken ingestion:
   (1) If non-corrosive poison is ingested, induce vomiting first.
   (2) If corrosive poison is ingested, do not induce vomiting; Patients who are able to swallow may be given a small amount of water.
   (3) If the coma is convulsive, it is not possible to induce vomiting. Administer general first aid according to the condition of the heart and lungs.
   (4) Keep the poison and send it to the doctor for testing with the patient.
4. Traumatic bleeding:
   (1) Raise the bleeding area higher than the heart. Do not remove the coagulation of the wound to prevent continuous bleeding and disinfect the wound to prevent infection.
   (2) Any hemostatic method should be released every ten to fifteen minutes to prevent tissue necrosis.
   (3) General bleeding: Treat the wound with direct hemostasis, cover the wound with clean gauze or a towel, and pressurize by hand for at least five minutes.
   (4) Arterial bleeding: treat with indirect hemostasis, directly pressing the finger on the

proximal end of the bleeding hemostasis point and reducing the amount of blood outflow from the wound, preferably at the same time as direct pressure hemostasis. (Thigh hemostasis point: groin center, head hemostasis point: carotid artery, upper arm hemostasis point: medial upper arm humerus).

(5) When the injured person is bleeding heavily and cannot be stopped by direct or indirect hemostasis, the tourniquet hemostasis method should be used. Tourniquets should be tied to the wound closer to the heart and the time of bandaging should be indicated.

(6) If there is a nosebleed, the patient should be half-seated and slightly forward. Press on both sides of the nose to stop the bleeding and release after ten minutes, If the bleeding has not stopped, it should be pressed for another ten minutes.

(7) If a limb is severed, isolate the severed limb immediately isolated with a clean plastic bag and refrigerate with ice cubes. Send it to the doctor with the patient for suturing.

5. Electric shock injury:

(1) First turn off the power, make sure that there is no risk of contact with electricity, and use a dry wooden stick or rope to remove the electric object.

(2) Carry out first aid according to the general principles of first aid.

6. Fracture:

(1) Avoid broken bones moving with adjacent joints.

(2) Fix the injured limb with a splint and transport the person on a stretcher.

(3) Elevate the fixed injured limb to reduce swelling and discomfort.

(4) Send to the doctor for treatment.

7. Radiation injury first aid:

(1) Personnel should be automatically evacuated or removed from the source of radiation as soon as possible.

(2) Surfaces contaminated with radioactive substances can be washed with soap (or other detergents) and plenty of water, just dirt and grime are washed away.

Section VIII Preparation, Maintenance, and Use of Protective Equipment

Article 37. The workplace manager should supervise the workers in conducting in accordance with the following provisions:

1. Protective facilities set up in the workplace, machinery, equipment, etc., should always be inspected to maintain their function.
2. Personal protective equipment or protective equipment should be kept clean after use and disinfected as necessary. They should be checked regularly to maintain their function and properly stored when not in use.

Article 38. The workplace manager should fully provide the appropriate personal protective equipment and safety and health facilities for the personnel to which they belong.

When workers engage in the following operations, they should handle it in accordance with the following provisions:

1. For the handling, placement, and use of prickly objects, protrusions, corrosive substances, toxic substances, or highly toxic substances, workers should be equipped with appropriate gloves, aprons, leggings, safety shoes, safety helmets, protective glasses, gas masks, safety face shields, etc.
2. For prime movers, power transmissions, power rolling devices (such as centrifuges), or power-operating machinery, workers whose hair or clothing are in danger of being caught should be made to wear appropriate clothing and headwear.
3. When objects in the operation fly or scatter, causing the risk of endangering the worker, the worker should be made to use a safety helmet and other necessary protective facilities.
4. For work at a height of more than two meters, when workers are at risk of falling, they should use seat belts, safety helmets, and other necessary protective equipment.
5. For those who are exposed to high temperatures, low temperatures, non-ionizing radiation, biological pathogens, harmful gases, vapors, dust, or other harmful substances, workers should be equipped with safety and health protective equipment, such as safety face shields, dust masks, gas masks, protective glasses, protective clothing, and other appropriate protective equipment.
6. Workers who work with substances with a risk of damage to the skin due to contact, infection, or poisoning due to skin infiltration and absorption, etc., should be equipped with appropriate protective equipment such as non-penetrating protective clothing, protective gloves, protective boots, protective shoes, etc. Or provide the necessary protective ointment for application.

Section IX: Accident Notification and Reporting

Article 39. Accident notification:

1. In the event of any accident or accident, in addition to immediately responding to the situation in accordance with one's authority and responsibility, the relevant units should be notified by the University Emergency Disaster Notification System to assist and support. The process should be followed according to the attachment.
2. The report should be short and clear and should include:
   (1) The name and telephone number of the informant.
   (2) The time of occurrence of the disaster.
   (3) The place where the disaster occurred.
   (4) Agent of injury.
   (5) Number of injuries.
   (6) State of placement.
   (7) Required support.

Article 40 Accident Reporting:

1. Any of the following occupational disasters in the workplace should be reported in accordance with the University Emergency Disaster Notification System, and the Environmental Safety Center should be notified to report it to the Labor Inspection Agency within eight hours:
   (1) Deaths have occurred.
   (2) The number of disaster victims is more than three.
   (3) The number of disaster victims is more than one person and requires hospitalization.
   (4) Other disasters designated by the central competent authority to be reported.
2. In the event of an occupational disaster mentioned in the preceding paragraph, except for necessary first aid or rescue, the scene should not be altered or destroyed arbitrarily without the permission of the judicial unit or Labor Inspection Agency
3. Regardless of the size of the accident (including false alarm accidents) or whether there are any losses, the place of occurrence should submit an accident report within three days.
4. In the event of an occupational disaster as listed in item 1 in the workplace, the head of the Environmental Safety Center and the workplace manager should carry out the investigation, analysis, and record of the causes of the disaster. They should formulate appropriate countermeasures and report to the principal for approval in accordance with the administrative operating procedures.

Section X: Other Matters Related to Safety and Health

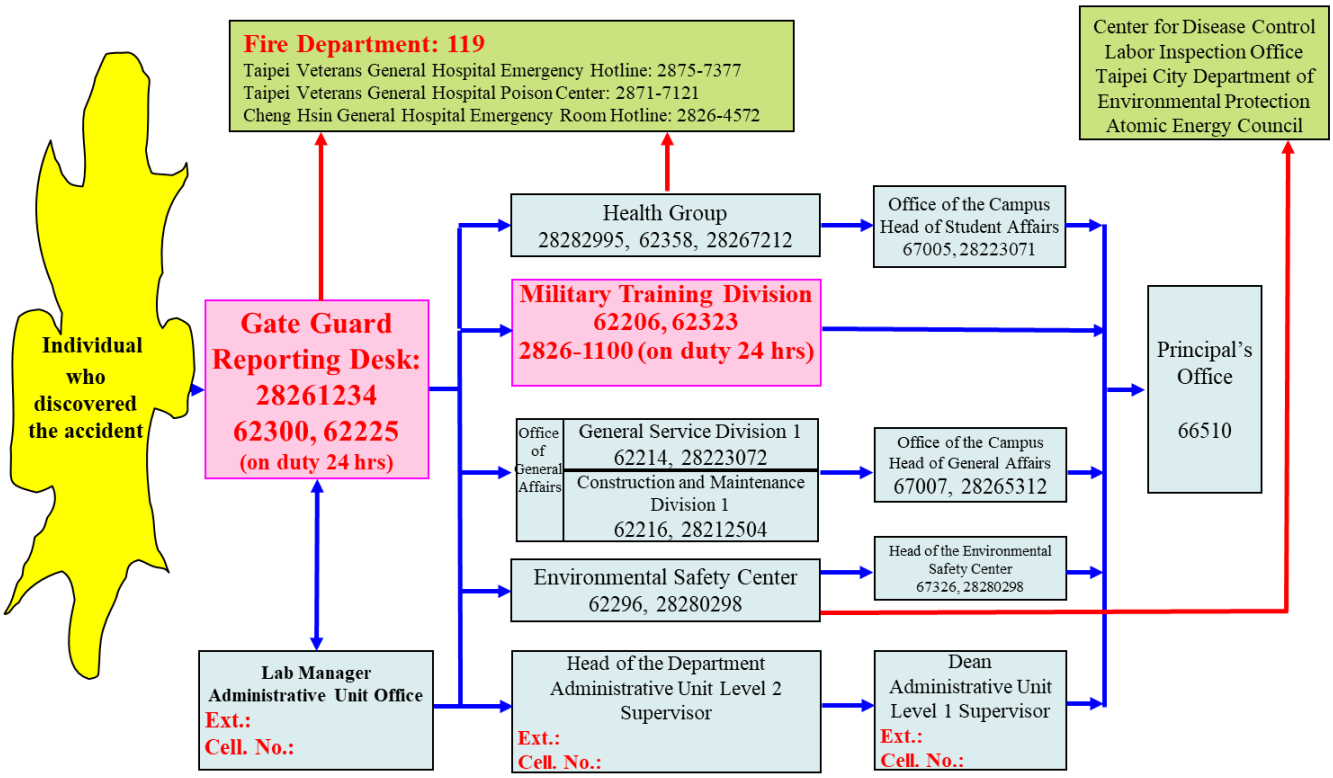
Article 41. Workers should abide by the safety and health work code and are obligated to accept education, training, and health examinations. Violators should, in accordance with the provisions of Article 46 of the Occupational Safety Law, be reported to the Labor Inspection institution and imposed a fine of not more than NT3, 000.00.

Article 42. This Code should be formulated by the relevant personnel in conjunction with labor representatives, examined and approved by the Environmental Safety Committee of the University, reported to the Labor Inspection Agency for inspection, and then announced for implementation. Amendments should be announced in conjunction with labor representatives and approved by the Environmental Safety Committee of the University.

Article 43 Matters not covered by this Code should be handled in accordance with relevant provisions.

Attachment:

National Yang Ming Chiao Tung University (Yang Ming Campus)
Emergency Disaster Notification System



1. During work hours, the Gate Guard, Health Group, Military Training Division, Environmental Safety Center, and General Affairs personnel, as well as the lab manager, department head, or the relevant supervisor, should immediately go to the scene to deal with it.
2. During off-duty hours, personnel from the Gate Guard and Military Training Division should immediately go to the scene to deal with it and notify the lab manager and department head to arrive as soon as possible.
3. Taipei City Occupational Hazard Reporting Hotline: 0910922707.

Environmental Safety Center 111.07