

高雄醫學大學

Kaohsiung Medical University

輻射防護計畫

Radiation Protection Plan

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一、總則

Article 1 General Provisions

1. 本校為確保全體教職員工生之健康與輻射安全，特訂定本計畫，以執行輻射作業。
2. Kaohsiung Medical University (KMU) formulates the Radiation Protection Plan for the proper implementation of radiation work, so as to ensure the health and radiation safety of all faculty, staff, and students.
3. 本計畫依游離輻射防護法第七條及游離輻射防護法施行細則第二條之規定訂定。
4. This Plan is formulated in accordance with Article 7 of the Ionizing Radiation Protection Act and Article 2 of the Enforcement Rules for the Ionizing Radiation Protection Act.
5. 本校除應遵守游離輻射防護法、游離輻射防護法施行細則、游離輻射防護安全標準等相關法規之外，尚應依本計畫實施各項輻射作業。
6. In addition to compliance with the relevant law and regulations such as the Ionizing Radiation Protection Act, Enforcement Rules for the Ionizing Radiation Protection Act, and Safety Standards for Protection against Ionizing Radiation, all radiation works in the University shall be carried out in accordance with this Plan.

二、輻射防護管理組織及權責

Article 2 Management Organization for Radiation Protection and Its Authority and Responsibility

1. 本校輻射防護事宜，由校長統籌負責。輻射防護管理組織應擬定輻射防護計畫，定期或不定期檢討及修訂計畫內容。
2. The President of the University shall oversee and take charge of matters relating to radiation protection of KMU. The management organization for radiation protection shall draft the Radiation Protection Plan, review and amend the Plan content regularly or from time to time.
3. 校長得指派合格人員為輻射防護人員，負責督導與執行輻射防護計畫及輻射防護管理業務。輻射防護人員之資格，依原子能委員會之規定。
4. The President may designate a qualified individual as the radiation protection officer, responsible for supervising and executing the Radiation Protection Plan and radiation protection management tasks. Qualifications of the radiation protection officer shall be in compliance with the Atomic Energy Council’s provisions.
5. 依輻射防護管理組織及輻射防護人員設置標準之規定，本校之輻射防護管理組織為輻射安全管理委員會。
6. In accordance with the Establishment Standards for the Radiation Protection Management Organization and Radiation Protection Personnel, the Radiation Safety Committee shall be the management organization for radiation protection in KMU.
7. 輻射安全管理委員會之組成如下：
8. The Radiation Safety Committee consists of:
	1. 委員共七人以上。
9. 7 committee members or more.
	1. 主任委員：校長。
10. a chairperson: the President.
	1. 委員：相關學院、學系主管、相關部門主管及輻射防護人員。
11. Committee members: Deans and chairs of related colleges and departments, heads of related offices, and the radiation protection officer.
12. 輻射安全管理委員會之職責如下：
13. Duties of the Radiation Safety Committee are as follows:
	1. 釐定輻射防護計畫、協助訂定安全作業程序及緊急事故處理措施，並督導有關部門實施。
14. Devise the Radiation Protection Plan, help formulate the safety operating procedures and the emergency and accident response measures, and supervise the relevant departments for implementation.
	1. 釐定放射性物質請購、接受、貯存、領用、汰換、運送及放射性廢棄物處理之輻射防護管制措施，並督導有關部門實施。
15. Devise the control measures for radiation protection including the purchase requisition, acceptance, storage, claiming and using, replacement, and transportation of radioactive material, as well as the disposal of radioactive waste, and supervise the relevant departments for implementation.
	1. 規劃、督導各部門之輻射防護管理。
16. Plan and supervise all departments for radiation protection management.
	1. 規劃、督導各部門實施可發生游離輻射設備、放射性物質之輻射防護檢測。
17. Plan and supervise all departments for radiation protection inspections on equipment capable of producing ionizing radiation and radioactive material.
	1. 規劃、實施游離輻射防護教育訓練。
18. Plan and implement education and training on ionizing radiation protection.
	1. 規劃游離輻射工作人員健康檢查、協助健康管理。
19. Plan the health examinations for ionizing radiation workers, and assist in health management.
	1. 規劃、協助辦理游離輻射偵檢儀器之定期校驗及檢查。
20. Plan and assist in the regular calibration and inspection of ionizing radiation detection instruments.
	1. 督導、辦理游離輻射工作人員劑量紀錄管理，與超曝露之調查及處理。
21. Supervise and manage the dose records of ionizing radiation workers, and investigate and handle overexposure incidents.
	1. 建立人員曝露與環境作業之記錄、調查、干預基準，及應採取之因應措施。
22. Establish the benchmarks for record, investigation, and intervention for worker exposure and the work environment, as well as the corresponding response measures to be taken.
	1. 管理主管機關要求陳報之輻射防護相關報告及紀錄。
23. Manage the radiation protection-related reports and records that should be submitted as required by the competent authority.
	1. 向校長提供有關游離輻射防護管理資訊及建議。
24. Provide information and recommendations about ionizing radiation protection management to the President.
	1. 其他有關游離輻射防護管理事項。
25. Other matters relating to ionizing radiation protection.

 執行前項游離輻射防護管理業務時，應就執行情形保存紀錄，並由輻射防護人員簽章確認。

When carrying out the aforementioned ionizing radiation protection management tasks, records should be kept for the execution status, which should be verified and signed by the radiation protection officer.

三、人員防護

Article 3 Personal Protection

1. 未滿十八歲之人員不得從事或參與本校輻射作業，但基於教學或工作訓練需要，得使十六歲以上未滿十八歲者參與輻射作業。任何人不得令未滿十六歲者從事或參與輻射作業。
2. Individuals under the age of 18 are not allowed to engage or participate in radiation work at KMU. However, those aged 16 to 18 may participate in radiation work for educational or job training purpose. No one is allowed to require individuals under the age of 16 to engage or participate in radiation work.
3. 校長應負責輻射工作人員之輻射防護教育訓練。
4. The President of the University shall be responsible for the radiation protection education and training of radiation workers.
5. 輻射工作人員職業曝露之劑量限度，依下列之規定：
6. The dose limits for occupational exposure of radiation workers shall comply with the following provisions:
	1. 每連續五年週期之有效劑量不得超過一百毫西弗。且任何單一年內之有效劑量不得超過五十毫西弗。
7. The effective dose in every 5 consecutive years shall not exceed 100 mSv, and the effective dose in any single year shall not exceed 50 mSv.
	1. 眼球水晶體之等價劑量於一年內不得超過一百五十毫西弗。
8. The equivalent dose to the crystalline lens of the eyes shall not exceed 150 mSv in a year.
	1. 皮膚或四肢之等價劑量於一年內不得超過五百毫西弗。
9. The equivalent dose to the skin or limbs shall not exceed 500 mSv in a year.

 前項第一款所稱之週期，自2003年起算，每連續五年為一週期。

The period referred to in Subparagraph 1 above is counted from the year 2003 onwards, with each consecutive 5 years constituting a period.

1. 十六歲至十八歲接受輻射作業教學或工作訓練者，其個人劑量限度，依下列之規定：
2. For individuals aged 16 to 18 who are receiving education or job training in radiation work, their personal dose limits shall comply with the following provisions:
	1. 一年內之有效劑量不得超過六毫西弗。
3. The effective dose in a year shall not exceed 6 mSv.
	1. 眼球水晶體之等價劑量於一年內不得超過五十毫西弗。
4. The equivalent dose to the crystalline lens of the eyes shall not exceed 50 mSv in a year.
	1. 皮膚或四肢之等價劑量於一年內不得超過一百五十毫西弗。
5. The equivalent dose to the skin or limbs shall not exceed 150 mSv in a year.
6. 對告知懷孕之女性輻射工作人員，應即檢討其工作條件，以確保妊娠期間胚胎或胎兒所受之曝露不超過游離輻射防護安全標準之規定。其有超過之虞者，應改善其工作條件，或對其工作為適當之調整。
7. Review immediately the working conditions of female radiation workers who have notified the University of their pregnancy, in order to ensure that exposure to the embryo or fetus during pregnancy does not exceed the Safety Standards for Protection against Ionizing Radiation. If there is a risk of exceeding the limits, their working conditions should be improved, or their work should be appropriately adjusted.
8. 輻射作業造成一般人之劑量限度，依下列之規定：
9. The dose limits for individuals in the general public due to radiation work shall comply with the following provisions:
	1. 一年內之有效劑量不得超過一毫西弗。
10. The effective dose in a year shall not exceed 1 mSv.
	1. 眼球水晶體之等價劑量於一年內不得超過十五毫西弗。
11. The equivalent dose to the crystalline lens of the eyes shall not exceed 15 mSv in a year.
	1. 皮膚之等價劑量於一年內不得超過五十毫西弗。
12. The equivalent dose to the skin shall not exceed 50 mSv in a year.

前項劑量限度適用於人口中之關鍵群體。

The dose limits mentioned in the foregoing subparagraphs apply to the critical group in the population.

1. 對在職之輻射工作人員，應定期實施從事輻射作業之防護及預防輻射意外事故所必要之教育訓練，並參酌下列科目規劃，且每人每年受訓時數需為三小時以上，並記錄備查。
2. For in-service radiation workers, regular protection against radiation work shall be implemented and necessary education and training for prevention of radiation accidents shall be provided. Reference to the following subjects should be made when planning the training; each individual should receive at least 3 hours of training per year, and records should be kept for reference.
	1. 輻射基礎課程。
3. Basic radiation course.
	1. 輻射度量及劑量。
4. Radiation measurement and dosage.
	1. 輻射生物效應。
5. Biological effects of radiation.
	1. 輻射防護課程。
6. Radiation protection course.
	1. 原子能相關法規。
7. Atom energy-related law and regulations.
	1. 安全作業程序及工作守則。
8. Safety operating procedures and work rules.
	1. 主管機關提供之相關資訊。
9. Relevant information provided by the competent authority.

輻射工作人員對於教育訓練，有接受之義務。

Radiation workers are obliged to receive the training.

9、為確保輻射工作人員所受職業曝露不超過劑量限度並合理抑低，本校應對輻射工作人員實施個別劑量監測。但經評估輻射作業對輻射工作人員一年之曝露不可能超過游離輻射法施行細則第六條之規定者，得以作業環境監測或個別劑量監測代之。

1. To ensure the occupational exposure of radiation workers does not exceed the dose limits and is as low as reasonably achievable (ALARA), the University shall implement individual dose monitoring for radiation workers. However, for radiation operations that are unlikely to expose the radiation workers to a dose exceeding that prescribed in Article 6 of the Enforcement Rules for the Ionizing Radiation Protection Act in a year, it may be substituted with environmental monitoring or individual dose monitoring.

10、依放射性物質或可發生游離輻射設備操作人員管理辦法之規定，操作人員之資格如下：

1. In accordance with the provisions of the Administrative Regulations for Operators of Radioactive Material or Equipment Capable of Producing Ionizing Radiation, qualifications of the operators are laid down as follows:
	1. 許可類放射性物質或可發生游離輻射設備之操作人員，應受主管機關指定之訓練，並領有輻射安全證書。
2. Operators of permitted radioactive material or equipment capable of producing ionizing radiation shall receive training specified by the competent authority, and obtain the radiation safety certificate.

（2） 登記類放射性物質或可發生游離輻射設備之操作人員，應受放射性物質或可發生游離輻射設備操作人員管理辦法附表二所列十八小時以上之輻射防護訓練課程，並取得證明。

1. Operators of registered radioactive material or equipment capable of producing ionizing radiation shall attend at least 18 hours of the radiation protection training courses listed in Appendix 2 of the Administrative Regulations for Operators of Radioactive Material or Equipment Capable of Producing Ionizing Radiation, and obtain a certificate.

（3） 領有下列輻射相關執業執照者，得操作許可類及登記類放射性物質或可發生游離輻射設備：

1. Those who hold the following radiation-related practicing licenses are allowed to operate permitted and registered radioactive material or equipment capable of producing ionizing radiation:

甲、放射線科、核子醫學科專科醫師執業執照。

i. Radiology or nuclear medicine specialist license.

乙、依醫事放射師法核發之執業執照。

ii. License issued in accordance with the Medical Radiologist Act.

丙、輻射防護人員認可證書。

iii. Authorization certificate of radiation protection personnel.

11、本校之教職員、研究人員及學生，於校內或校外操作放射性物質或可發生游離輻射設備前，應接受合格人員規劃之操作程序及輻射防護講習。但操作主管機關核發之放射性物質或可發生游離輻射設備時，仍應在合格人員之直接監督下為之。

1. Faculty, staff, researchers, and students of KMU shall attend lectures on the operating procedures and radiation protection planned by qualified personnel before operating radioactive material or equipment capable of producing ionizing radiation, whether inside or outside of the University. However, when operating radioactive material or equipment capable of producing ionizing radiation issued by the competent authority, it shall be done under the direct supervision of qualified personnel.

前項操作程序及輻射防護講習，除修課人員依教育主管機關核定之課程實施外，其他人員之講習，應將包括講習課程、指導人員及講習地點等講習計畫先報經原子能委員會核准後實施。講習時數不得少於三小時。

Concerning the aforementioned lectures on the operating procedures and radiation protection, aside from individuals taking courses approved by the education authority, other personnel should attend lectures with a training plan detailing the course content, instructors, and location, which should be submitted to the Atomic Energy Council for approval before implementation. The lectures should not be less than 3 hours.

四、醫務監護

Article 4 Medical Surveillance

1. 經體格檢查合格之人員，始得從事輻射工作。
2. Only individuals who have passed the physical examination are allowed to engage in radiation work.
3. 對在職之輻射工作人員，應每年實施定期健康檢查，並依檢查結果，為適當之處理。
4. Regular health examinations shall be conducted annually for in-service radiation workers, and appropriate measures should be taken based on the examination results.
5. 體格檢查、定期健康檢查及紀錄保存，準用勞工健康保護規則之規定。
6. For physical examinations, regular health examinations, and records retention, the provisions of the Labor Health Protection Act apply.
7. 輻射工作人員因一次意外曝露或緊急曝露所接受之劑量超過五十毫西弗以上時，應給予包括特別健康檢查、劑量評估、放射性污染清除、必要治療及其他措施之特別醫務監護。
8. When a radiation worker is subject to a dose exceeding 50 mSv due to an accidental or emergency exposure, he/she should be put under special medical surveillance, which includes special health examinations, dose evaluation, radioactive decontamination, necessary treatment, and other appropriate measures.
9. 輻射工作人員經特別健康檢查後，應就其特別健康檢查結果、曝露歷史及健康狀況，徵詢醫師、輻射防護人員或專家之建議後，為適當之工作安排。
10. After the health examination, radiation workers shall be given appropriate work arrangement based on their health examination results, exposure history, and health status after seeking advice from physicians, radiation protection officers, or experts.
11. 健康檢查及特別醫務監護之費用，由本校負擔。
12. Costs of the health examinations and special medical surveillance shall be borne by the University.

7、輻射工作人員對於體格檢查、定期健康檢查及特別醫務監護，有接受之義務。

1. Radiation workers are obligated to accept physical examinations, regular health examinations, and special medical surveillance.

五、地區管制

Article 5 Area Control

1. 本校所有放射性物質及可發生游離輻射設備，應放置於有適當之屏蔽，且有輻射防護人員管理之教學實驗室或特定場所。
2. All radioactive material and equipment capable of producing ionizing radiation at KMU shall be placed in the teaching laboratories or designated places that are appropriately shielded and managed by the radiation protection officer.
3. 本校依輻射場所之設施、輻射作業之特性及輻射曝露程度，劃分管制區。管制區內應採管制措施。管制區入口處應設立明顯之輻射示警標誌。
4. KMU shall delineate the restricted areas based on the radiation site facilities, the characteristics of radiation operations, and the level of radiation exposure. Control measures shall be implemented within the restricted areas, and a clear radiation warning sign shall be placed at the entrance to the restricted areas.
5. 管制區應經常保持關閉，並需張貼「同位素實驗室工作守則」、「輻射除污簡表」及「高雄醫學大學輻射意外事故處理流程」於明顯處，所有人員均應詳讀。
6. The restricted areas shall always be kept closed. The Isotope Laboratory Work Rules, Summary of Radiation Decontamination, and KMU Radiation Accident Handling Procedures shall be posted at prominent places, and all personnel should read them carefully.
7. 應定期（至少每年乙次）或不定期（有污染或游離輻射洩漏可能時）實施輻射偵檢，以防止人員接受過高之劑量或裝備及儀器之污染，偵檢結果應予記錄，以利檢討改善及日後查考。
8. Radiation detection shall be conducted regularly (at least once a year) or from time to time (when there is a possibility of contamination or ionizing radiation leakage) to prevent personnel from receiving excessive doses or equipment and instruments from being contaminated. Detection results shall be recorded to facilitate review, improvement, and future reference.

六、輻射源管制

Article 6 Control of Radiation Sources

1. 新購輻射源到貨接收時，輻射防護人員應記錄並妥善儲存輻射源。輻射源之輸入、轉讓、輸出、使用、安裝、改裝、持有、停止使用、永久停止使用，應依放射性物質與可發生游離輻射設備及其輻射作業管理辦法之規定辦理。相關證明文件，應妥為保存。
2. When newly purchased radiation sources are received, the radiation protection officer shall keep records and properly store the radiation sources. The import, transfer, export, use, installation, modification, possession, decommissioning, and permanent decommissioning of the radiation sources shall be done in accordance with the Administrative Regulations for Operators of Radioactive Material or Equipment Capable of Producing Ionizing Radiation. The relevant supporting documents shall be properly kept.
3. 輻射源表面應有明顯耐久之輻射警告標誌，並附註有關核種、名稱、活度及必要之說明。
4. A distinct and durable radiation warning sign shall be put on the surface of the radiation sources, together with details about the radionuclide, name, activity, and any necessary information.
5. 輻射源應由專人列帳管理，定期或不定期檢查，防止失竊及不當使用，並留存紀錄備查。
6. Radiation sources shall be documented and managed by a designated person, and be inspected regularly or from time to time to prevent theft and improper use. Records shall be kept for future reference.
7. 本校應置備適當之輻射偵測及監測儀器，並每年送原子能委員會認可之單位校驗乙次，並將校驗資料留存。
8. The University shall be equipped with appropriate radiation detection and monitoring instruments, which shall be calibrated once a year by a unit recognized by the Atomic Energy Council. Calibration data shall be retained.
9. 可發生游離輻射設備應依巔值電壓，放射性物質應依活度之大小，申請使用許可證或使用登記證。
10. Application for a usage permit or usage registration certificate is required, which should be based on the peak voltage for equipment capable of producing ionizing radiation and based on the activity level for radioactive material.
11. 可發生游離輻射設備應設置明顯之警示系統、安全連鎖系統、偵檢校驗系統、緊急停止裝置。並定期或不定期作設備檢查、輻射劑量與洩漏檢查。每月應作放射性物質數量的清點、封存、停用與廢棄查核。
12. Equipment capable of producing ionizing radiation shall be equipped with a clear warning system, safety interlock system, detection and calibration system, and an emergency stop device. Inspections of the equipment, radiation dose, and leakage shall be conducted regularly or from time to time. For the radioactive material, monthly inventory check, sealing, deactivation, and disposal audit shall be carried out.
13. 為預防輻射源未經核准報廢，輻射源需納入本校財產，並依本校財產物品管理辦法管理，且財產之登記應加註輻射管制品，並同時註明報廢前應報經原子能委員會核准字樣。
14. To prevent unauthorized disposal of radiation sources, radiation sources shall be regarded as the University’s property and managed in accordance with the KMU Property Management Regulations. Property registration thereof shall be marked as a radiation-controlled item and a remark indicating that disposal of the item requires prior approval from the Atomic Energy Council shall be made.

七、輻射源廢棄

Article 7 Discarding of Radiation Sources

1. 可發生游離輻射設備永久停止使用，而以廢棄方式處理時，應填具申請書，並檢附原領使用許可證或登記證，向原子能委員會申請，經審查合格後，依原子能委員會指定之部分，自行破壞至不堪使用狀態，並拍照留存備查，或報請原子能委員會派員檢查。
2. When a piece of equipment capable of producing ionizing radiation is permanently decommissioned and to be disposed of as waste, an application form shall be filled out and submitted to the Atomic Energy Council, together with the original usage permit or registration certificate. Upon successful review, the part specified by the Atomic Energy Council shall be destroyed to an unusable state, with photos taken for documentation, or the Atomic Energy Council may be requested to send someone to check on the process.
3. 放射性物質永久停止使用，而以放射性廢棄物處理時，應填具申請書，檢具相關文件，向原子能委員會申請，經審查合格後，發給許可。原子能委員會核准後，應於三個月內，將放射性廢棄物運送至接收單位。於完成接收後三十日內，檢送輻射作業場所偵檢證明及接收文件，送原子能委員會備查。
4. When radioactive material is permanently decommissioned and to be disposed of as radioactive waste, an application form shall be filled out and submitted to the Atomic Energy Council, together with the relevant documents. Upon successful review, a permit will be issued. After getting approval from the Atomic Energy Council, the radioactive waste shall be transported to the collection unit within 3 months. Within 30 days of the waste collection, proof of radiation detection at the worksite and the waste collection document shall be submitted to the Atomic Energy Council for future reference.

八、意外事故處理

Article 8 Handling of Accidents

1. 應將意外事故處理程序之重點、聯絡人、連絡電話，揭示於管制區明顯易見之處。
2. Critical procedures of the accident handling process, as well as the contact persons and telephone numbers, shall be clearly displayed in a noticeable place in the restricted areas.
3. 於下列事故發生時，應採取必要措施，並立即通知原子能委員會：
4. In case of the following accidents, necessary measures shall be taken, and the Atomic Energy Council shall be notified immediately:

（1）人員接受之劑量，超過游離輻射防護安全標準之規定者。

1. A person is subject to a radiation dose in excess of the Safety Standards for Protection against Ionizing Radiation.

（2）輻射工作場所以外地區之輻射強度或水中、空氣中或污水下水道中所含放射性物質之濃度，超過游離輻射防護安全標準之規定者。

1. The radiation intensity in areas outside the radiation worksite, or the concentration of radioactive material in water, air, or the sewage system exceeds the Safety Standards for Protection against Ionizing Radiation.

（3）放射性物質遺失或遭竊者。

1. The radioactive material is lost or stolen.

（4）其他經主管機關指定之重大輻射事故。

1. Other major radiation accidents specified by the competent authority.
2. 於前項事故發生後，除應依相關規定負責清理外，並應依規定實施調查、分析、記錄。並應於事故發生日起或自知悉之日起三十日內，向原子能委員會提出報告。報告中應載明下列事項：
3. After the occurrence of the aforementioned accidents, the University shall not only be responsible for the cleanup according to relevant regulations, but shall also carry out an investigation, analysis, and keep records as stipulated. A report shall be submitted to the Atomic Energy Council within 30 days from the accident date or the day it is acknowledged. The report shall include the following details:
	1. 含人、事、時、地、物之事故描述。
4. Description of the people, events, time, location, and things involved in the accident.
	1. 事故原因分析。
5. Analysis of the cause of the accident.

（3） 輻射影響評估。

1. Assessment of the radiation impact.

（4） 事故處理經過、善後措施及偵測紀錄。

1. The accident handling process, corrective measures in the aftermath of the accident, and detection records.

（5） 檢討改善及防範措施。

1. Review of the improvement and preventive measures.

（6） 其他經主管機關指定之事項。

1. Other matters specified by the competent authority.
2. 於事故發生時，除採取必要之防護措施外，非經原子能委員會核准，不得移動或破壞現場。
3. In the event of an accident, nothing at the scene shall be moved or disturbed without permission from the Atomic Energy Council, except for necessary protective measures.
4. 國內輻射防護相關機構與核能專業服務單位之電話、地址等資料，應予公佈，以備緊急連絡之需。
5. The telephone numbers and addresses, etc. of the radiation protection agencies and nuclear professional service units in Taiwan shall be publicly disclosed for emergency contact purpose.

九、合理抑低措施

Article 9 As Low As Reasonably Achievable (ALARA) Measures

1. 合理抑低指盡一切合理之努力，以維持輻射曝露在實際上遠低於游離輻射防護安全標準之劑量限度，其重點為：
2. ALARA refers to making every reasonable effort to keep radiation exposure well below the dose limits stated in the Safety Standards for Protection against Ionizing Radiation, and the key points are:
3. 需與原許可之活動相符合。
4. The activity should comply with the original permit.
5. 考慮經濟與社會因素後，一切曝露應合理抑低。
6. Having taken the economic and social factors into consideration, all exposure should be kept as low as reasonably achievable.
7. 個人劑量不得超過游離輻射防護安全標準之規定值。
8. The individual dose shall not exceed the specified limits stated in the Safety Standards for Protection against Ionizing Radiation.
9. 輻射工作場所之劃定與管制，除應考量工作人員個人之劑量外，亦應合理抑低集體劑量。
10. For the delineation and control of radiation worksites, not only shall the individual doses of workers be taken into consideration, their collective dose shall also be kept as low as reasonably achievable.
11. 本校輻射工作場所內規劃之各項偵測及監測，以年劑量限度之十分之一為紀錄基準；年劑量限度之十分之三為調查基準；年劑量限度之十分之八為干預基準。
12. All sorts of detection and monitoring efforts shall be planned in the KMU radiation worksites, with one-tenth of the annual dose limit as the benchmark for record, three-tenths of the annual dose limit as the benchmark for investigation, and eight-tenths of the annual dose limit as the benchmark for intervention.
13. 偵測及監測之結果超過紀錄基準者，應予記錄並保存之；其結果超過調查基準者；應調查其原因；其結果超過干預基準者；應立即採取必要之應變措施。
14. If the detection and monitoring results exceed the benchmark for record, they should be recorded and preserved; if the results exceed the benchmark for investigation, the causes should be investigated; if the results exceed the benchmark for intervention, necessary response measures should be taken immediately.

十、紀錄保存與申報事項

Article 10 Records Retention and Items of Declaration

1. 相關紀錄應保存年限如下：
2. Relevant records shall be retained for the following durations:
3. 輻射防護教育訓練紀錄：十年
4. Records of radiation protection education and training: 10 years
5. 測試報告、擦拭報告、廢水樣品偵測紀錄及工作場所偵測紀錄：五年
6. Records of radiation survey reports, smear test reports, measuring records of wastewater samples, and measuring records of workplaces: 5 years
7. 體格檢查、健康檢查及醫務監護：三十年
8. Records of physical examinations, health examinations, and medical surveillance: 30 years
9. 偵檢儀器校驗紀錄：三年
10. Records of calibration for detection instruments: 3 years
11. 輻射工作人員之職業曝露歷史紀錄，應自該人員離職或停止參與輻射工作之日起，至少保存三十年，並至輻射工作人員年齡超過七十五歲。
12. Records of the occupational exposure history of radiation workers shall be retained for at least 30 years from the date the worker leaves office or stops participating in radiation work, and until the radiation worker becomes 75 years old or above.
13. 輻射工作人員離職時，應向其提供職業曝露紀錄。
14. When a radiation worker quits, the record of his/her occupational exposure should be provided to him/her.
15. 下列資料應定期或不定期記錄並保存五年
16. The following information shall be recorded regularly or from time to time and retained for 5 years.
	1. 放射性物質或可發生游離輻射設備現況紀錄表。
17. Records of the current status of radioactive material or equipment capable of producing ionizing radiation.
	1. 輻射偵檢儀器現況紀錄表。
18. Records of the current status of radiation detection instruments.
	1. 輻射防護檢查紀錄表。
19. Records of radiation protection inspections.
20. 應每個月查核密封放射性物質現況乙次，並上網申報。並每年申報使用情形及操作人員異動情形。
21. Sealed radioactive material shall be inspected once a month, and the status shall be declared online. In addition, the usage status and personnel changes of operators shall be declared annually.
22. 持有許可類放射性物質或可發生游離輻射設備，應於許可證有效期間內，每年偵測乙次，並於每年十二月三十一日前，將該年偵測證明提報主管機關備查。並每半年申報使用情形及操作人員異動情形。
23. For possession of the permitted radioactive material or equipment capable of producing ionizing radiation, detection shall be conducted once a year during the validity period of the permit, and the year’s proof of detection shall be submitted to the competent authority by December 31 every year for reference. In addition, the usage status and personnel changes of operators shall be declared annually every 6 months.

十一、附則

Article 11 Supplementary Provisions

1. 本計畫如有未盡事宜，悉依游離輻射防護法、游離輻射防護法施行細則、游離輻射防護安全標準，及其他原子能委員會頒佈之規定。
2. Matters not covered in this Plan shall be dealt with in accordance with the Ionizing Radiation Protection Act, Enforcement Rules for the Ionizing Radiation Protection Act, Safety Standards for Protection against Ionizing Radiation, and other regulations proclaimed by the Atomic Energy Council.
3. 高雄醫學大學放射性物質作業場所火災處理程序，如附件一。
4. The KMU Fire Response Procedures for Radioactive Material Worksites are shown in Appendix 1.

3、 本計畫呈校長核准，並報請原子能委員會核准後實施，修訂時亦同。

3. The Plans shall be passed by the President and then implemented after submitted to the the Atomic Energy Council for approval and shall apply to subsequent amendments.

附件一

Appendix 1

**高雄醫學大學放射性物質作業場所火災處理程序**

**Kaohsiung Medical University**

**Fire Response Procedures for Radioactive Material Worksites**

1. 放射性物質作業場所發生火災時，應立即參考物質安全資料表進行滅火及火災控制，並通報指定之輻防人員或輻防管理人員前來處理。

In case of a fire in a radioactive material worksite, firefighting and fire containment shall be done immediately by making reference to the Material Safety Data Sheet (MSDS). Also, a designated radiation protection officer or radiation protection manager shall be notified to handle the situation.

1. 災害未達放射性物質存放處時，應迅速將放射性物質連同屏蔽移至安全地區，並派人看守。

If the hazard has not reached the radioactive material storage area, the radioactive material along with their shielding shall be moved promptly to a safe location, and a designated person shall be assigned to keep watch of the material.

1. 若災害已達放射性物質存放處，應迅速將現場空調通風系統關閉，採取適當方法撲滅火災。若災害已無法控制，應立即通知相關人員撒離現場，進行場所管制，禁止非工作人員接近。

If the hazard has reached the radioactive material storage area, the air conditioning and ventilation systems shall be shut down promptly, and the fire shall be extinguished in the appropriate way. If the hazard has been out of control, relevant personnel shall be notified to evacuate the scene immediately. Site control shall then be implemented, and non-working staff are prohibited to come near the area.

1. 請求消防單位支援時，若有放射性物質仍未移至安全地區，應提醒抵達現場之消防人員有關輻射相關資訊，例如放射性物質位置、放射性物質外觀。

When assistance from the fire department is requested, the arriving firefighters shall be informed of the radiation-related details, such as the location and appearance of the radioactive material if the radioactive material has not been moved to a safe area.

1. 火災經撲滅後，由輻防人員或輻防管理人員委託輻射偵測業者對現場、放射性物質及屏蔽進行偵檢，檢查放射性物質有無洩漏，確定輻射強度，劃定管制區。

After the fire is extinguished, the radiation protection officer or radiation protection manager shall commission a radiation detection service provider for inspections on the site, radioactive material, and shielding to check for any radioactive material leakage, ascertain the radiation intensity, and delineate the restricted area.

1. 若放射性物質有洩漏現象，輻防人員或輻防管理人員應採取適當措施，阻止或減緩放射性物質洩漏，防止污染面積擴大，並對放射性物質作適當之處理，必要時，進行污染地區或污染物去污，污染廢棄物集中處理。

If there is a radioactive material leakage, the radiation protection officer or radiation protection manager shall take appropriate measures to stop or slow down the radioactive material leakage, prevent the spread of contamination, and handle the radioactive material properly. The affected area or contaminated items shall be decontaminated if necessary, and the contaminated waste shall be gathered for centralized disposal.

1. 放射性物質作業場所於火災後，造成作業場所屏蔽或防止輻射洩漏設施損壞，有輻射安全之虞時，應於火災發生後24小時內向原能會通報

If a fire in the radioactive material worksite damages the shielding or anti-leakage facilities of the site, posing a radiation safety risk, the Atomic Energy Council shall be notified within 24 hours of the fire.

1. 指定之輻防人員或輻防管理人員(含代理人)名冊及聯絡電話

The roster and contact numbers of the designated radiation protection officer or radiation protection manager (including the deputy)

|  |  |  |  |
| --- | --- | --- | --- |
|  | 姓名Name | 職稱Job Title | 聯絡電話(上班、非上班)Contact No. (Office hours/Non-office hours) |
| 指定之輻防人員Designated radiation protection officer | 盧奕珊Lu, Yi-Shan | 輻防人員Radiation Protection Officer | 上班Office hours: 07-3121101#2278/2003非上班：Non-office hours: 0956-296-125 |
| 第一代理人First deputy | 陳博文Chen, Bo-Wen | 代理人Deputy | 上班Office hours: 07-3121101#2278/2003非上班：Non-office hours: 0972382356 |

原子能委員會核安監管中心24小時通報專線：02-82317250、0800-088-928。

24-hour reporting hotline of the Nuclear Safety Duty Center, Atomic Energy Council: 02-82317250, 0800-088-928.