



**Engineering Inspection Services Limited  
734 Northwest Enterprise Centre,  
Kilshane Drive, Blanchardstown, Dublin 15**

**Safety Statement and Radiation Safety Manual  
July 2013 Revision 14**

**SAFETY STATEMENT  
AND  
RADIATION SAFETY MANUAL**

**COMPANY NAME:** ENGINEERING INSPECTION SPECIALISTS LTD  
Unit 734 Northwest Business Park  
Kilshane Drive  
Blanchardstown  
Dublin 15  
Ireland

**ISSUE** 2

**REVISION** 14

**EFFECTIVE DATE** August 2013

Revised – Addition of radiation safety manual requirements



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**THIS RADIATION SAFETY MANUAL IS ISSUED IN COMPLIANCE WITH THE IONISING RADIATION SI.125/ 2000, Article 17.**

The company holds a current license for radioactive material issued by the RPII.

This will be renewed each year.

No modification of practices, equipment or facilities will be carried out without the prior approval of the RPII.

This safety manual is written to meet the requirements of the following legislation. This legislation states the radiological protection measures required to protect staff and other persons.

- a) The Ionising Radiation Order 2000 (SI.125/2000)
- b) HASS regulations.
- c) ADR 2013 road transport regulations.
- d) Other regulations as appropriate

Employees must sign to the effect of being familiar with the RADIATION SAFETY MANUAL.

Staff must adhere to this RADIATION SAFETY MANUAL at all times

**PERIODIC REVIEW REQUIRED ANNUALLY**



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**1.0 SAFETY STATEMENT DISTRIBUTION LIST**

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1. Managing Director
2. Inspection Services Manager
3. Technicians
4. Workshop
5. Office
6. Safety Representative
7. Safety Officer
8. RPA

**2.0 INTRODUCTION**

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All E.I.S. Ltd employees will know from their contract of employment that E.I.S. Health and Safety Policy applies to them under the Health and Safety at Work Act 2005.

All EIS Ltd. employees will have completed the FAS Safepass training scheme and be certified as per Safepass requirements.

This document contains a copy of that Safety Policy and a statement of the organization and arrangements adopted by EIS Ltd in order to ensure its effective implementation.

This document sets down the procedures which will apply in the interest of Health and Safety of all employees. It is a working document to which regular reference is made by all to ensure that the required procedures are being implemented.

This document contains typical details of the actions to be performed by all individuals to be aware to their responsibilities and duties and act accordingly.

Note: Reference to RPII is a direct reference to the Radiological Protection Institute of Ireland.

### **3.0 HEALTH AND SAFETY POLICY**

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It is the Policy of EIS, to comply with the Safety, Health and Welfare at Work Act 2005, The Safety, Health and Welfare at Work (General Application) Regulations 2007 and The Safety, Health And Welfare at Work (Construction) Regulations 2006, Amendment Regulations 2003 along with any other applicable health and safety regulations.

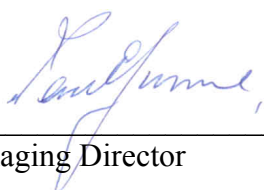
To ensure so far as reasonably practical the safety, health and welfare of all employees whilst at work, and to provide such information, training and supervision, needed for this purpose.

We believe that the statutory requirements provide for minimum standards only. EIS Ltd will strive to continually improve on such standards applicable to our operations wherever reasonably practicable. The Company has a main objective, the elimination of Accidents and ill health to Employees and anyone else who may be affected by out acts or omissions.

We are committed to high standards in Safety, Health and Welfare because we believe that this contributes to business performance overall by reducing injuries and ill health, protecting the environment and reducing unnecessary losses and liabilities.

Good Health and Safety conditions can only be achieved with the fullest of co-operation of all. This will only be possible if everybody understands the important role they have to play. The various responsibilities are set out in the attached document and it is extremely important that these are read and understood by the various people.

This document will be reviewed annually and amended as necessary taking into consideration changes that will occur from time to time and also any of the Safety suggestions that may be forthcoming. Employees at every level will be in a position to identify new hazards. Please take the time to bring them to the attention of Paul Dunne, Managing Director.

Signed:  Date: Paul Dunne  
Managing Director

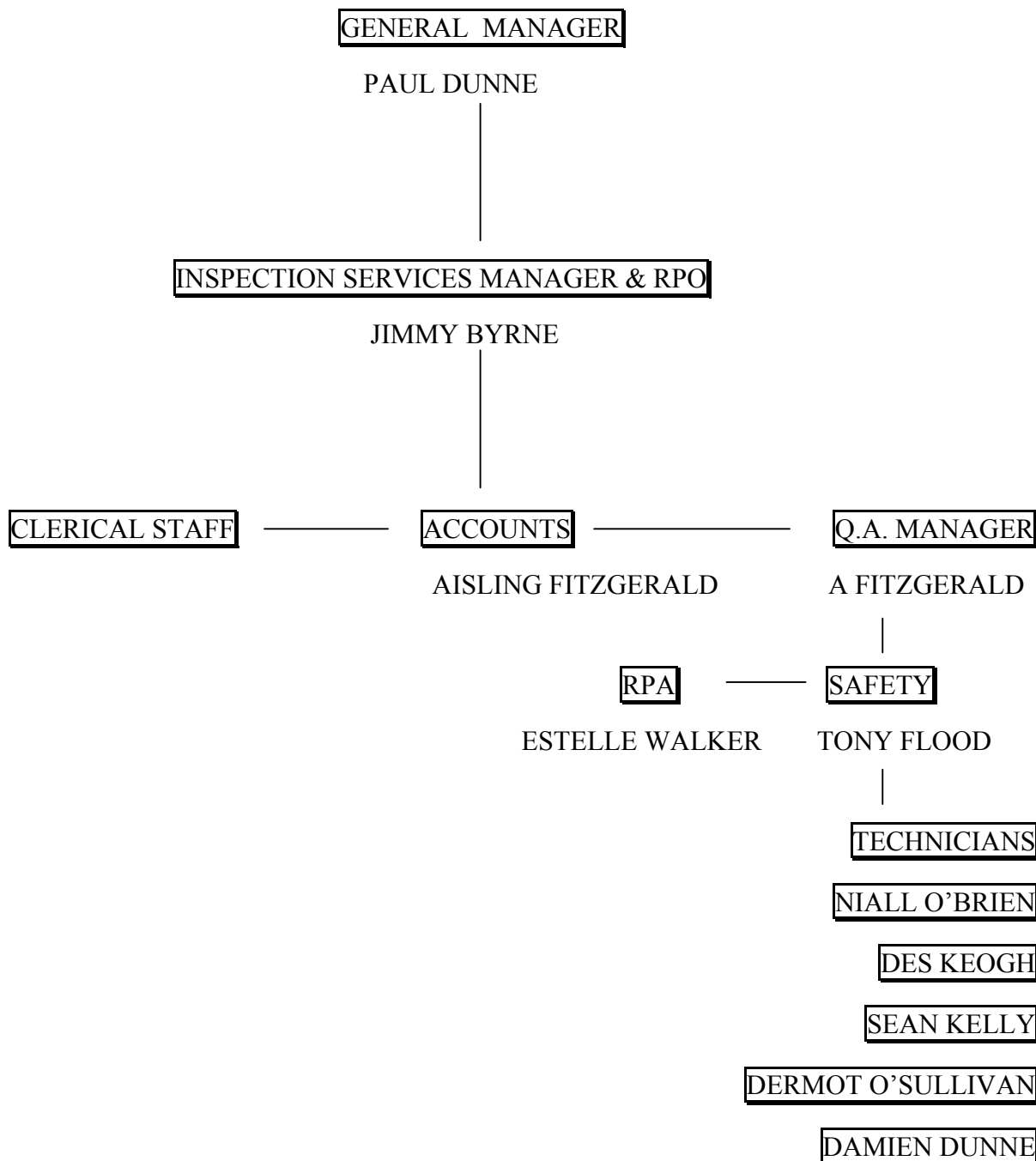
**4.0 ORGANISATION\MANAGEMENT STRUCTURE**

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**5.0 ALLOCATION OF RESPONSIBILITIES**

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**RESPONSIBLE PERSONS**

**MANAGING DIRECTOR.....Mr Paul Dunne**

1. The Managing Director, Mr Paul Dunne has overall responsibility for all matters relating to Health and Safety and Welfare at EIS Ltd.
2. The Managing Director will initiate periodic reviews of EIS Safety Policy for the prevention of accidents at the offices and sites
3. The Managing Director will promote interest and enthusiasm for Health and Safety throughout the Company.
4. The Managing Director will ensure that the Health and Safety Policy is effectively implemented.
5. The Managing Director will make adequate financial provisions to ensure the effectiveness of the Health and Safety Policy.
6. The Managing Director will ensure that chains of command with the Line Management are always clearly defined and instigate a formal investigation/reporting structure.





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**INSPECTION SERVICES MANAGER.....Mr James Byrne**

1. The Inspection Services Manager will take responsibility implementing the company safety statement.
2. The Inspection Services Manager will ensure that all personnel under his control fully understands and accepts their responsibilities in matters of safety, health and welfare
3. The Inspection Services Manager will ensure that sufficient resources of time, personnel and finance are available to comply with the company safety statement.
4. The Inspection Services Manager will ensure that adequate safety audits are carried out and give full support to the Safety, Health and Welfare Officer.
5. The Inspection Services Manager will make provisions at planning, estimating and tender stage for safety requirements and ensure that decisions made are consistent with the company safety statement.
6. The Inspection Services Manager shall liaise with his team of Inspectors and the Company Safety Officer to ensure that an effective accident prevention programme and accident investigation procedures are implemented.
7. Make safety a priority, give good example and show a personal interest in all matters relating to safety.
8. Notify the Company Safety Officer, giving full details of the start up and cessation of all projects.
9. Review the monthly safety reports and implement recommendations deemed necessary.



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10. Acquire a full and accurate knowledge and understanding of the company safety statement, implement it on sites and ensure that all employees accept their responsibilities.
11. Monitor the safety performance of employees and establish and maintain adequate arrangements to facilitate representation by all employees in matters of safety, health and welfare.
12. The Inspection Services Manager will ensure that within his tender price that sufficient awareness of all the safety issues are taken into account.
13. Perform all the necessary risk assessments as required including for example manual handling and those related to P.P.E. and NDT Equipment.

**SAFETY OFFICER.....Mr Tony Flood**



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The main responsibilities of the Safety Officer are:

1. To ensure that all staff are aware of their responsibilities and to assist and advise them in the execution of such responsibilities.
2. To inform all staff of existing and potential hazards to Health and Safety at work and the legal requirements related hereto.
3. Inspect and report on places of work and working practices and to sure that safe systems or work are being employed in compliance with NDT Safety practices and statutory regulations.
4. Investigate accidents and dangerous occurrences, analyse accident data, report and make recommendation to avoid re-occurrences.
5. Ensure that all necessary statutory and other records are maintained.
6. Promote safety awareness and safety training at all levels.
7. To advise on statutory tests for plant and equipment.
8. To report to the Managing Director on matters pertaining to safety.
9. Ensure compliance with statutory regulations and codes of practice and that all registers and accident books are maintained and available for inspection at all times.
10. Provide sufficient and adequate safety warning signs.

**RADIATION PROTECTION ADVISER:**

Estelle Walker



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[Estelle.walker@btinternet.com](mailto:Estelle.walker@btinternet.com)

**DUTIES OF RADIATION PROTECTION ADVISER**

1. Ensuring that all relevant regulations and licence conditions, including radiation safety procedures, are upheld.
2. Assisting in the preparation and amendment of radiation safety procedures.
3. Ensuring that radiation surveys and quality assurance tests are carried out, such as regular testing and calibration of monitoring equipment and regular operational checks of safety and warning systems.
4. Reporting to the management, the Radiation Protection Advisor (where such a person has been appointed) and to the RPII any incident that could give rise to a radiation hazard.
5. Arranging individual dose assessment for exposed workers.
6. Assisting the licensee in the classification of controlled and supervised areas.
7. Ensuring the safe keeping of all records required by the conditions of license.
8. Acting as the contact person with the RPII, as appropriate, on all licensing matters and matters generally relating to radiological protection.

**RADIATION PROTECTION OFFICER**

**Jimmy Byrne**



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**DUTIES OF RADIATION PROTECTION OFFICER**

- (i) To ensure that all radiographers and Outside Contractors are provided with copies of these rules, that they have read and understood them and to ensure that they comply with them.
- (ii) To carry out the periodic RPO checks detailed in these rules and record the results.
- (iii) To arrange for regular testing of radiation monitors (and any repairs), to instruct persons using them as to their method of use and to ensure that they are used when necessary.
- (iv) To arrange for the immediate repair of any defective interlock or warning signal.
- (v) To prevent the unauthorised use of the source projectors by ensuring the source lock keys are secure.
- (vii) To be responsible for a rigorous accounting procedure to ensure that the whereabouts of the source projectors is known at all times.
- (viii) To implement the Contingency Plans, if required.
- (ix) To ensure that dosimeters are worn by exposed workers at all times.
- (x) To estimate, the dose received by a cat A worker where a dosimeter has been lost, destroyed or damaged and notify the Dosimetry Service in writing of the estimate.
- (xii) To consult with the RPA on any matter of radiation safety or situation in which the RPO is uncertain of the correct action to take.
- (xiii) Inspection and maintenance of safety and warning features.
- (xiv) Ensure that maintenance of all radiographic equipment is carried out.
- (xv) Establishment, issue and periodic review of RSP and risk assessments.
- (xvi) Ensure that all radiographers are appropriately trained.



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(xvii) Co-ordinate, incident, accident and high dose investigations.

Changes to the named RPO require prior approval of the RPII and an amendment of the license.

A complete copy of the companies RPII license will be posted in a suitable position within the companies premises along with the name of the person responsible for supervising their use.

6.0 DUTIES OF EMPLOYEES

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1. Employees and others involved in EIS Ltd Unit 734 Northwest Business Park, Kilshane Drive, Blanchardstown, Dublin 15 and sites are obliged under the terms of the Safety, Health and Welfare Work Act 2005 and the Safety, Health and Welfare Work Act (General Application) Regulations 2007 to comply with this safety statement and the other requirements of the act.
2. Employees must co-operate fully in the consultative process.
3. Employees must notify their supervisors or their safety officer of any known hazards, defective equipment etc in their work areas or other areas used by staff which could be hazardous to the public.
4. Employees must participate in training sessions organized for staff.
5. Employees should elect a member of their peers to act as safety representative for EIS Limited.
6. Employees have access to Safety Statement and must read and understand the requirements.
7. Employees must act at all times in a safe manner and not do anything which is likely to cause risk to Health and Safety.
8. Employees must observe all warning notices and instructions.
9. Employees must not carry out tasks at which they are not competent or which involves unreasonable high risks.



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10. Employees are at all times to follow local rules and RSP.
11. Employees are at all times to wear TLDs and EPDs during radiography operations.
12. Employees are at all times to use radiation monitors properly and in a systematic manner.
13. Employees must not put themselves or others at risk through non-adherence to procedures or local rules.





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It is the duty of any employee of EIS Ltd noticing any possible or actual safety hazard to bring it to the attention of the supervisor without delay. This includes the misuse or unauthorized use of any equipment or apparatus.

EIS Ltd are committed to meet the requirements of the Health and Safety at Work Act 2005 with respect to employee consultation.

If there are any matters which the employee feels are not addressed or that the statement is inadequate in any area, please bring their concerns to the safety officer.

This safety statement is a living working document and will be reviewed on a regular basis. Revisions will be made to it if it is found to be inadequate or take account of any changes affecting Health and Safety.

Employees will be facilitated in their duties and as regards their employment will not be put at disadvantage should they raise matters relating to safety.

## **8.0 PROFILE OF RESOURCES AND FACILITIES**

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EIS Ltd is aware that for effective safety management, the policy statement cannot be construed as a once off exercise. This policy is a dynamic document subject to change to meet and address the changing circumstances of the business, new legislation and EEC Directives.

In a similar vein, the risks to the safety, health and welfare of employees, including those related to the choice of equipment, new and improved technology, the use of substances or chemicals along with fitting out of the workplace are reviewed periodically and evaluated for their compliance to existing and new legislation as it is decreed.

Maintenance will be performed only when the equipment is shut down, where possible, adjustment, lubricating and maintenance points are located outside the danger zones.

All equipment will be maintained in accordance with the manufacturers recommendations and in compliance with the pre-determined preventative maintenance programme and the log of such maintenance maintained.

The reinstating placing on line such maintained equipment to energy source shall be such as to pose no risk to the employees concerned.

EIS Ltd organization and professional approach to all contracts reflects their knowledge gained of the Oil, Power, Chemicals and Gas Construction Industries. The company has extended its service to include all on-site Non-Destructive testing techniques and associated quality assurances services.

The company's work experience stretches from conventional on-shore NDT investigation to the inspection of oilfield tubular inspection.



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**COMPANY QUALIFICATIONS**

EIS Ltd has been approved by NSAI as an I.S. EN 9001 : 2000 approved company. The company has been audited and approved by Royal & sun Alliance Insurance Co. , Hibernian Insurance Co., Eagle Star Insurance Co. / Zurich Risk Assessment and Germanischer Lloyd.

**COMPANY PARTICULARS**

BANKERS:	Ulster Bank, Dorset Street
INSURANCE BROKERS	Bernard McMahon Insurances Ltd
SOLICITORS	John Gaynor & Co Solc
AUDITORS	Noone-Casey
MANAGING DIRECTOR	Paul Dunne
REGISTERED OFFICE	110 Thomas Street, Dublin 8

**INSPECTION SERVICES**

Supplying a complete major contracts inspection facility including:-

<b>Pre Contacts</b>	Defining inspection requirements from the codes or standards. Producing the quality control manual and written examination procedures.
<b>Contract Duration</b>	Define programme for contract duration, supply and control of technical personnel and equipment to carry out all the Inspection requirements.
<b>Documentation</b>	Controlling the reporting requirement and documentation filing.



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**Equipment Performance Control and Evaluation**

Evaluating limitations and applicants of new equipment and techniques

**Quality Control**

Quality Control Managers

Quality Control Documentation (Procedure, Reports)

Welding Inspectors

Welder Test

Welding Procedure Test

**Personnel Qualifications:**

**Ultrasonics**

C.S.W.I.P\PCN\CIP

E.R.S.

A.S.N.T.

**Welding**

C.S.W.I.P\PCN\CIP

E.R.S.

**MPI**

C.S.W.I.P\PCN\CIP

E.R.S.

A.S.N.T

**Radiography**

C.S.W.I.P\PCN\CIP

E.R.S.

A.S.N.T.



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<b>Penetrant</b>	C.S.W.I.P.\PCN\CIP E.R.S. A.S.N.T
<b>Painting</b>	Provision of Painting Inspectors and Technologists
<b>Fabrication\Surveillance</b>	
<b>On-Site Inspection Surveys</b>	Full on site provision of techniques, equipment and consumables.
<b>Welding</b>	Provision of welding inspectors and quality control inspectors.
<b>Safety</b>	All personnel have attended an RPII approved safety course in University College, Galway



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EIS Ltd is aware of the hazards and potential dangers of their business. All operatives \ technicians performing tasks must be experienced, trained or under instruction to perform such functions. EIS Ltd has a substantial commitment to identify the training needs of their employees.

Jimmy Byrne, Inspection Services Manager shall identify the training needs of operatives and technicians. The scope of work undertaken by EIS Ltd require that rigid safety procedures are adhered to. When such work is being performed it shall be carried out by qualified and trained personnel. No employee will attempt a potentially hazardous task without the proper instruction.

While undergoing training substantial emphasis will be placed on the safety and health aspects.

*Training Programmes the company is currently operating:-*

Radiography, Ultrasonics, Magnetic Particle Inspection, Dye Penetrant Inspection, Practical Welding, Welding Technology and Fire Safety.

*Sources of Training*

Enterprise Irl., FAS Training Centre, Apex Fire Safety, DIT Bolton Street, Lavender International and TWI

The nature of our industry dictates that special emphasis be placed on manual handling and the movement of equipment. To that end all employees are inducted and trained in manual handling techniques.



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Radiation Training

All employees will be given specific risk awareness training. This training will be subject to refresher courses.

Additional in house training will be provided for any employees appointed as radiography assistants, RPOs or authorised source changers, or drivers.

10.0 SUB-CONTRACTORS AND SELF EMPLOYED PERSONS

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1. Self-employed persons must ensure that they are aware of the obligations placed upon them with regard to Health and Safety.
2. Self-employed persons must be competent and suitably qualified to perform their appropriate functions.
3. All self-employed persons have a duty to report any defect in the plant or equipment, place work or system of work without unreasonable delay.
4. Self-employed persons and others under their care must ensure they are wearing protective clothing and equipment as appropriate.
5. Self-employed persons shall comply with the requirements of this safety statement, and co-operate with management in providing a safe system of operation.
6. Self-employed persons have a duty to bring the attention of Jimmy Byrne, Inspection Services Manager of EIS Ltd and anyone else who may be effected by any process or use of material which may endanger health and safety.
7. Self-employed persons must produce evidence when requested showing that appropriate employers liability and public liability insurance is in place.
8. Self-employed persons must confirm generally with the duties and responsibilities as for employees.
9. Self-employed persons must provide their safety statement when requested to do so.





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**II.0 IDENTIFICATION OF HAZARDS & PREVENTATIVE  
PROCEDURES**

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The hazards and risks associated with the NDT Service Industry are many.

It is not possible nor practical to set forth in writing full and complete instructions covering all safety practices that may arise.

The following pages identify the main hazards and risks along with the preventative procedures associated with the NDT Industry.

Note for specific Radiation Levels etc, please see attached schedule 1 from EIS Licence No: included in this manual – section 16.

**HAZARD – RADIATION EXPOSURE**

**ROUTINE RADIATION SAFETY CHECKS - RPO**

**DAILY**

1. Maintain isotope logbook and daily movement book
2. Allocate work as appropriate
3. Raise consignment note for all isotope shipments involving transport.
4. Ensure vehicle signs are supplied and fitted
5. Maintain health records
6. HASS records completion and dispatch to RPII as required.

**MONTHLY**

1. Issue and return of TLDs



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2. Examine dose record reports and electronic dosimeter results
3. Check the operation of all beepers and their general condition.
4. Check calibration of monitors is in date
5. Check equipment certificates are in date
6. Check movement records in daily isotope movement log
7. Audit transport documents
8. Carry out the manufacturers recommended safety checks on windouts, tubes and containers and record these.
9. Check X-ray units - tube head, panel bulbs and meters, all cables and warning systems. All faults are to be repaired or the equipment must be withdrawn from use. These inspections are to be recorded.

**QUARTERLY**

1. Check validity of medical records where appropriate
2. Arrange medicals as appropriate
3. Check training requirements for employees.

**ANNUAL**

1. Check Isotope register and audit entries
2. RPA appointment renewal
3. RPA report -action
4. Radiation safety manual annual review
5. Ensure annual maintenance on isotope containers
6. Ensure leak test on dU every 2 years
7. HASS record to RPII
8. Check employee document records (licenses, certs etc).

**NEW EMPLOYEE**

1. New employee to read RADIATION SAFETY MANUAL and sign .



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2. Obtain copy of health record from previous employer.
3. Arrange pre-employment medical and classify as cat A worker ( provide a letter).
4. Issue personal safety equipment and TLD badge and direct reading dosimeter
5. Arrange in-house training or course, as required.

**NEW ISOTOPES**

1. Check if RPII notification is required in advance with modification to licence.
2. Obtain decay charts and wipe test certificate and file.
3. Enter Isotope details in inventory
4. Monitor and store Isotope in Isotope store.
5. Complete HASS record and dispatch to RPII

**NEW EQUIPMENT – X-RAY, GAMMA OR MONITORS**

1. **Arrange operator training on equipment.**
2. **Check equipment holdings against license details.**
3. **Prior notification to RPII and schedule changes.**
4. **Identify equipment by serial number and record**
5. **Obtain calibration certificates/maintenance certificates. File and amend RECORDS as appropriate.**

**SAFETY CHECKS BY RADIOGRAPHER:**

**– ANY FAULT MUST BE REPORTED TO THE RPO**

**MONITOR CHECKS:**

DAILY -Operators to carry out battery and functional check.

WEEKLY -Radiographers to carry out functional check and check battery Condition

**GAMMA EQUIPMENT**



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**DAILY**                      Operator to ensure equipment is serviceable prior to commencing radiography and report any faults to the Senior Radiographer.

1. The container should be cleaned after use.
2. Any screws or nuts should be checked for tightness.
3. Any moving parts should be lubricated periodically with the correct lubricant.
4. Winding cables and extension tubes should not be creased or bent.
5. The threads on screw type connections should be checked regularly. If the threads are crossed the container should be serviced.

In addition to the above, all containers should be checked to ensure that it bears the relevant serial numbers and warning symbol, including company name and telephone number in case of loss or theft.

**X-RAY EQUIPMENT**

**DAILY**                      Operator to ensure equipment is serviceable, prior to commencing radiography and report any faults to the RPO.

1. All cables should be checked frequently for cuts or damage.
2. All connections should be correctly and securely coupled including earth
3. Protective type caps on plugs and sockets should be replaced after use to prevent ingress of dust and moisture.
4. Water-tight connection should be used on extension leads.
5. The efficient operation of warning devices should be checked.



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**PERSONAL PROTECTIVE EQUIPMENT**

**DAILY**                      The operator to whom the personal alarm is used is to carry out operational and battery checks.

**MAINTENANCE:**

The equipment will be repaired by a qualified engineer, a certification of inspection will be required for this service.

*Preventative Procedures*

1.      TLD's

TLD's are to be worn by all classified personnel for radiation monitoring purposes. TLD's are changed on a monthly basis, unless otherwise notified. If for some reason or other your TLD is mislaid or damaged you are bound to inform your radiation supervisor in order that they can investigate same. A written explanation must be submitted prior to replacement of same. When taking more than two days leave **Your TLD must be given to the Assistant RPO.**

TLD's are obtained by the company from an approved laboratory, - MEDRAY . After they are used they are returned for examination and the results are returned for recording, with a copy being retained by the RPII. The results are available for inspection on request by all personnel

2.      Radiation Dose Record



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This book contains the name and addresses, the maximum permissible dose and the dose indicated by TLD's for each classified worker.

3. Personal Electronic Dosimeters

Personal Electronic Dosimeters are worn by classified personnel whenever carrying out Radiography as a means of having an immediate indication of possible doses. **If your electronic dosimeter records a body dose in excess of 30microsieverts, your TLD must be submitted immediately for processing.**

**Each individual is required to record their daily electronic dosemeter result in their timesheet when working with radiation.**

Periodic Medical Examination

All radiographers and assistant radiographers are classified as category A exposed workers.

This will entail a pre-employment medical examination for all new employees, and **a routine medical review for all employees at a frequency not exceeding 12 months. EIS will notify persons that they have been designated a Category A worker.**

**EIS must notify the Dosimetry Service that the individual is a Category A worker. Their radiation dose records will be retained until the individual reaches the age of 75 or for 50 years, whichever is the longer.**

**The doctor should be provided with the dosimetry results, health records and sickness/absence records for the individual.**

**The doctor will designate the worker as fit, subject to certain conditions, or unfit to work with ionising radiation and record the information in a health record.**

**The appointed doctor for EIS personnel is:**

\_\_\_\_\_.



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**DUTIES OF RADIOGRAPHERS AS CATEGORY A WORKERS:**

- **All personnel will be supplied with a pocket dosimeter and TLD. The TLD will be worn for a four week period before replacement. These items will be worn at all times during working hours. Each individual must log the results from the alarming dosemeter. This will be checked by the RPO.**
- **If a TLD badge is lost the RPO must notify the RPII Dosimetry Service, so that a replacement can be issued (an estimation of dose may be required for part or all of the wearing period).**
- **Any dose exceeding 35 $\mu$ Sv per day or 0.5mSv/mth will be investigated by the RPO. A written investigation must be carried out and the individual notified.**
- **If there is any reason to suspect that any person has received an overexposure, the procedures detailed in the contingency plans must be followed.**
- The RPO will investigate the circumstances for lost or damaged TLD's.
- All classified personnel will undergo an annual medical examination. In the event of a person receiving or suspected of having received a dose in excess of the RPII recommendation, a full report of the circumstances forwarded to the RPII.

**DESIGNATED RADIATION CONTROLLED AREAS:**

**FIXED CONTROLLED AREAS**

**The following areas are designated as Controlled Areas:-**

- (i) The entire NDT enclosure, bounded by the walls and entrance**
- (ii) The first floor area and roof during an exposure**

**Entry to the above Controlled Areas is prohibited except:-**



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- (i) As cat A workers, radiographers can enter the NDT enclosure when the exposure has terminated.**
- (ii) Non-classified persons such as maintenance engineers may enter either Controlled Area under the appropriate system of work below:-**

**Persons who have not been designated as Cat A workers may enter the NDT enclosure providing that either**

- (i) The person is accompanied by a cat A radiographer at all times**

**or**

- (ii) The key to any x-ray panel in use within the enclosure has been removed and the source projectors have been locked away. All keys must be in the custody of the RPO.**

**DESIGNATION OF CONTROLLED AREAS DURING SITE RADIOGRAPHY AND SYSTEMS OF WORK**

During site radiography, the radiographer will estimate the extent of the Controlled Area prior to commencing work. Appropriate barriers, warning pennants and notice boards will be erected to designate the area.

During the first exposure, dose-rates at the barriers will be measured to ensure they are below  $2.5\mu\text{Svh}^{-1}$ . If necessary, the barriers will be relocated. The area is de-designated only when work is completed, barriers and signs have been removed and the source is locked in the projector.

- (i) Radiographers, can enter the area when the exposure has terminated.**
- (ii) No other person is allowed in the area until the work has been completed, the barriers and signs removed and the source is locked in the projector/ X-ray unit disconnected from the panel and the power source.**

**NDT ENCLOSURE - RADIOGRAPHY USING SOURCE PROJECTOR**





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**( There are no safety systems fitted to the enclosure, as a result it should be treated as open shop radiography.)**

**(1) The equipment should not be used without a collimator fitted. The collimator chosen should minimise the beam size to that required for the workpiece under investigation.**

**(2) Radiography will only proceed when -**

**(i) a fully operational emergency kit is available**

**(ii) an operational and calibrated dose-rate meter is available**

**(iii) the operator has visually confirmed that no one is in the enclosure or on the first floor/roof**

**(iv) warning lights operate**

**(v) access to the first floor is prevented ( locked off)**

**The operator must be positioned outside the entrance to the enclosure, during windout and exposure.**

**Prior to exposing the source, a klaxon should be sounded for 10 seconds. When the source is exposed the flashing warning light should be activated.**

**(3) After each exposure, a check should be carried out with the dose-rate meter to ensure that the source has fully retracted into its shielded container.**

**(4) Upon completion of work, the source should be returned to the storage container in the enclosure.**

**Isotopes must not be left out of the Isotope store without supervision.**

**RULES FOR SITE RADIOGRAPHY USING SEALED SOURCES**

**A radiographer is to be available during all radiography work.**



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1. **Carry out Site Risk Assessment and Security Assessment and produce Method statement.**
2. Copy of METHOD STATEMENT for the site to customer before work commences.
3. Ensure signs are fitted to vehicle, vehicle driver and crew are equipped and transport documents are completed in accordance with the radiation safety manual .
4. **The radiographer will check the following:**
  - a) **The radiation emission at the surface of the projector must not exceed 2mSv/hr or 100uSv/hr at 1m.** If so, an alternative camera will be used and the abnormality reported to the radiological protection officer.
  - b) That the camera locks and safety plugs are in position and functioning properly.
  - c) The pigtail connector and the visible end of the pigtail wire for any signs of wear or damage.
  - d) The winding mechanism, paying particular attention to the connector. Check that the clearance in the gap is in order. This can be checked by means of a clearance gauge. Check the first '6' of the inner cable for signs of wear or damage. Also check the cranking mechanism and outer cables for signs of damage.
  - e) Check the head (front) tube for kinks which could restrict the source movement and cause it to jam.
  - f) If everything on the above checklist is order, the equipment may be removed from storage. If not, the radiological protection officer should be notified and alternative equipment used.
5. Load Isotope and container into van last.
6. Collect equipment required, i.e. monitor, barrier tapes, notices, warning lights, and emergency kit. Ensure monitor is suitable for gamma radiation, and that the calibration is in date. Make sure a copy of the companies contingency plans are included.
7. Select and sign out the appropriate source(s), and copy of decay chart(s) – noting customer or the site address.
8. Comply with transport rules during journey and when unloading. On arrival at site, define and mark the controlled area –as stated in the method statement using barrier



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tapes, notices and warning lights, i.e. an area in which levels of ionising radiations are likely to exceed 2.5uSv/hr. Monitor and complete the form.

9. Use physical lock up of access points as an addition to warning signs and barriers. **A sketch of site showing position of barrier and dose levels at the barrier must be completed.**
10. **A collimator or castle must be used on all site radiographic examinations. When using wind-out containers, the monitor must be used to confirm that the isotope had been properly returned to the container. This must be done after each exposure.**
11. The controlled area barriered off must not be left unattended whilst radiography is in progress. The Isotope must not be left unattended whilst on site, one radiographer must be with it at all times.
12. Ensure that no employees are working in obscure areas within the controlled area, i.e. on roof, offices, large vessels on shop floor or segregated areas near the exposure point.
13. Carry out radiography as per the method statement.
14. Removed controlled area on completion of work.
15. Isotope is to be removed from customer's premises and returned to its proper store on completion of each shift.
16. Secure Isotope in store and to sign it back in the source register.
17. Check all warning labels and source tag details for legibility.
18. Check connections between the exposure device and cables for secure connections.
19. Check functionality of all radiation monitoring equipment.
20. Ensure that 2 radiographers or radiographer and assistant are present during radiography operations one of which must hold a PCN level 2 or equivalent qualification.



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**RULES FOR SITE RADIOGRAPHY USING X-RAY SETS**

Radiographers will be present for the duration of all exposures on site. A copy of the company's METHOD STATEMENT will be supplied before work commences and after the RISK ASSESSMENTS have been carried out.

1. Carry out risk assessment
2. Complete METHOD STATEMENT as required.
3. Select appropriate x-ray set and copy of exposure chart if applicable.
4. Check that all cables and other equipment are serviceable.
5. Collect equipment required, i.e. monitor, barrier tapes, notices, warning lights. Make sure you have a copy of the contingency plans.
6. Check monitor is suitable for the radiation present, and that the calibration is in date.
7. On arrival at site, define and mark the controlled area iaw the method statement using barrier tapes, notices and warning lights, i.e. an area in which levels of ionising radiations are likely to exceed 2.5uSv/hr. In defining the controlled area, refer to fixed features such as walls, buildings etc. If this is not practical, make reference to distance and direction from set or the object to be irradiated.
8. Use physical lock up of access points as an addition to warning signs and barriers if possible.



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9. **A sketch of site showing position of barriers and dose levels at the barrier must be completed.**
10. Diaphragms or cones must be used on all x-ray sets for all site radiographic examination.
11. Ensure the controlled area is clear and secure prior to all exposures.
12. Ensure that no employees are working in obscure areas within the controlled area, i.e. on roof, offices, etc near exposure point.
13. The controlled area barriered off must not be left unattended whilst radiography is in progress.
14. A serviceable dose rate meter must be used at all times to monitor the action of the x-ray generator.
15. All x-ray equipment must be used as per the manufacturer instructions at all times.
16. Terminate exposures and notify the RPO of any incident or occurrence whilst carrying out radiography.
17. All equipment, i.e. x-ray sets, diaphragms, barrier tapes, warning notices, warning lights, radiation monitors, RAMs are to be returned to their respective stores after completion of the job.

*Monitoring Equipment and Work Area*



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Each radiographic crew shall be equipped with a dose rate meter. All meters are to be checked prior to operating, in particular the battery test operation. It is also essential to check the condition of the batteries occasionally as faulty batteries may corrode your monitor.

The meter is used to achieve the following objectives:-

1. To check that the safety barriers are positioned where the dose rate is at a safe level (2.5uSv h-1 microsieverts) when radiographic work is being carried out.
2. To monitor the dose rate at the safety barriers particularly when the radiographic technique varies.
3. To check that a source exposure container is fully closed after use.
4. To help locate a lost source.
5. To monitor working conditions.

Radiation monitors shall be tested at intervals not exceeding 12 months after each, meter servicing. A current test certificate must be available.

**RULES FOR ISOTOPE CHANGING**

This work must be carried out within the compound.

**Only the RPO or assistant RPO may carry out isotope changes.**

A serviceable radiation monitor must be used at all times to assess the actual position of the radioactive source.

Extreme care must be taken and a radiation monitor must be used at all times.



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The procedure to be followed should be that laid down by the manufacturers.

The area within the radiography enclosure must be worn, abiding by the rules for “**NDT ENCLOSURE - RADIOGRAPHY USING SOURCE PROJECTOR**”.

*Source Control*

It is of the utmost importance that the whereabouts of every sealed source is known at all times. At the back of this manual, a typical example of record sheet is attached, indicating source types, serial nos, activity and daily location.

On removing a source from the store this log must be completed and authorized. On completion of radiographic work, the source is returned by the same technician. At no time can a source be exchanged from one technician to another with completing the necessary documentation.

*Transport of Sources*

- **The source projector should be placed in the goods compartment of the vehicle.**
- **Only authorized EIS staff may travel in the vehicle and they must have a radiation monitor.**
- **Appropriate Class 7 placards should be placed on the sides and rear of the vehicle.**
- **An orange plate should be displayed on the front and rear of the vehicle.**
- **The source container should have two labels attached to it (one on each side). The appropriate label can be determined from Table I below by taking two dose-rate measurements -one on the surface and one at a distance of one metre from**

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**the source projector. The labels should be completed with the TI, radionuclide present and activity.**

- **A Consignors certificate should be completed and be on display in the vehicle.**
- **ADR “Instructions in writing” should be carried**
- **The source projector must be logged out and in of the source store.**

**Table I - Determination of Category Label**

Transport Index (Dose-Rate in mR/hr at 1m or in $\mu\text{Sv/hr}$ at $1\text{m} \div 10$ )	Maximum Dose-Rate on Surface of Source Projector		Category
	mR/hr	$\mu\text{Sv/hr}$	
0 (ie dose rate $< 0.5 \mu\text{Sv/hr}$ at 1m)	Not more than 0.5	Not more than 5	WHITE 1
Greater than 0 but less than 1	Greater than .5 but less than 50	Greater than 5 but less than 500	YELLOW - II
Greater than 1 but less than 10	Greater than 50 but less than 200	Greater than 500 but less than 2000	YELLOW - III

**Where a source is being returned to HTSL an IATA dangerous goods note will be required and an EU transfrontier shipment of sealed sources form 1493/93 must be completed by the RPO. Copies of these forms, duly completed, will be maintained on file at all times.**

- The vehicle carrying the radiography source should not be parked en route unless absolutely necessary. The vehicle must be locked and the alarm set and the vehicle supervised.

**THE FOLLOWING ITEMS ARE THE MANDATORY EQUIPMENT OR DOCUMENTATION THAT IS REQUIRED TO ACCOMPANY ANY VEHICLE TRANSPORTING RADIOACTIVE MATERIAL.**





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**DRIVER,**

Copy of his training certificate or authorized driver permit.

Photo ID or passport,

Torch

Reflective vest and gloves

Consignment note for the package

Emergency written instructions for the package

Mobile phone

**CREWMEMBER**

Photo ID or passport

Training certificate

Torch

Reflective vest

**VEHICLE**

ADR signs and class 7 placards

Fitted with alarm

Equipped with emergency equipment-

- 2 x 2 Kg. Dry powder fire extinguishers
- 2 x warning signs.
- 1 x Wheel chock suitable for the vehicle.

Radiological emergency equipment

- Barrier rope
- Warning signs
- Lead shot bags

Vehicles transporting the above items must be accompanied by the Cat A radiographer.

During Transportation, if a stop is necessary between your office and site location, safe and secure parking must be obtained. The vehicle must be fitted with a Car Alarm Security System parked and securely locked in any of the following places.

1. Garda Station
2. Supervised Car Park



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Theft of Radioactive Source must be reported to the Garda Siochana immediately and then your radiation supervisor who in turn will report the incident directly to the RPII.

*Loss of Sealed Sources*

The purpose of keeping records of sources is to prevent as far as possible their disappearance, and to provide up to date information on the last known whereabouts of a source if it should be lost or mislaid.

It is your duty to notify your supervisor forthwith if there are any reasonable grounds for believing that a sealed source has been lost or mislaid.

In addition to the above all units should be checked to ensure that it bears the relevant serial number and company name including telephone number.

*Sealed Source and Storage Pit*

All sealed sources, and X-Ray units are clearly identified and except, when not in transit or in use must be securely stored. Sources are stored in the Isotope Storage Pit, the source being locked in the Storage Pit, which is accessible through the locked entrance to the compound.

If a storage compound is not available on site a secure temporary facility must be used. Storage facilities shall be constructed to give a maximum reading of 0.25 microsieverts per hour at the nearest point to the source container.

Isotope Storage Compounds consist of a locked storage pit, enclosed by a fence with lockable gate and both it, and the pit shall be kept locked. As all access to sources and compounds is by means of appropriate keys, all technicians are requested to have available for their own use sets of such keys. X-Ray units shall be securely stored in the storeroom.



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*Safety Equipment – Radiation*

Each classified Radiographic Technician carrying out Radiography shall have as standard equipment:-

1. 1 no Radiation Survey Meter
2. 2 Red Flashing Lights
3. 1 Roll of Orange Coloured Cordon, including 10 Radiation Pendants.
4. 4 Radiation Warning Boards, with the following information in Black Print on Yellow or Florescent Background with the Radiation Symbol:

**KEEP CLEAR – RADIATION**

5. 1 Radiation Monitoring TLD in Holder
6. 1 Electronic Dosimeter and Log Book for Recording same.
7. 1 Copy of Safety Manual
8. 1 set of keys for Source Container, Pit and Compound.
9. Radiation Warning sign for transport including Radiation Symbol.
10. Copy of Company Directory Card
11. Back Up Survey Meter
12. Emergency Equipment such as cutters and tongs and emergency transport container.

**Note:**

**When classified workers are taking more than two consecutive days leave they must return their TLD Dosimeter to the Assistant RPO.**

*Emergency Procedures*



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When carrying out X-Radiography, the competent person must always be close enough to the control panel to switch off the X-Ray set should the unexpected occur.

The most likely type of emergency with X-Ray equipment is the exposure of persons to X-Rays, as a result of either the machine being energized unintentionally or persons getting past the barriers unnoticed.

Action:-

1. Switch off the machine.
2. Leave everything exactly as it was until seen by competent authorities.
3. Ask any persons who may have been on site for interrogation by competent authorities. If this is not possible, obtain their names and addresses and telephone numbers.
4. Inform the person in charge on site of what has happened, also tell the Garda Siochana of the public who were involved.
5. Contact your Radiation Supervisor.

Summary

If it is not possible to lease all as per No 2 above or if it is unavoidable that equipment be moved, its position must be marked to ensure that the circumstances prevailing at the time of the emergency can be reproduced.

Manual Handling of Material

The primitive method of lifting used the back to lift and this may lead to serious injuries.



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General Risks:

1. Lifting loads which are too heavy\awkward loads.
2. Using improper lifting methods.
3. Not being able to grip properly.
4. Dropping loads that are too heavy.
5. Over-reaching.
6. Handling gamma cameras
7. Gripping sharp objects causing injuries to hand
8. Loading onto High\Low Platform.

Stacking:

1. Check objects which may roll such as drums.
2. Inspect pallets.
3. Never lean on stacks.
4. Never destack by throwing items from the top or by pulling them down.

EIS Ltd will organize work so that manual handling of loads is avoided whenever possible. Where handling is unavoidable, the work will be planned or equipment provided to reduce



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the risks to a minimum. (There is no longer a defined work maim limit on the weights that employees may handle)

In planning how the work is to be done EIS will assess the risks presented by the working environment, the particular load, the physical effort required, the distance involved and the frequency of the task.

Employees will be given all relevant information on loads including weights, center of gravity and any special handling requirement as applicable. EIS Ltd will take account of whether the employee is physically suited and had adequate knowledge or training for the job to be done.

**HAZARD - FIRE**



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*Preventative Procedures*

Sites must have the right number and type of Fire Extinguishers, and must be positioned in correct places. There must be adequate escape routes and they must be kept clear. Workers must know what to do in an emergency.

Flammable liquids, compressed Gases and other hazardous materials must not be stored with radioactive materials.

*Flammable Liquids*

There must be a proper store area.

The amount of flammable liquid on site should be kept to a minimum for the days work.

Smoking must be prohibited and other ignition sources must be kept away from flammable liquids.

Properly constructed safety containers must be used.

Flammable liquids must not be stored with radioactive materials.

*Compressed Gases (eg LPG Acetylene)*

Cylinders must be stored properly.

The cylinder valve must be fully closed when the cylinder is not in use.

Cylinders should be located outside site buildings such as Offices, Canteens, Drying Rooms etc.

Compressed Gases must not be stored with radioactive materials.

*Other Consumable Materials*

There must be proper waste receptacles.



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Waste material should be moved regularly.

Hazardous materials must not be stored with radioactive materials.

**HAZARD – UNSAFE EGRESS**

*Preventative Accident Procedure*

Everyone must be able to reach their place of work safely i.e. good roads, gangways, passageways, passenger hoists, staircases, ladders and scaffolds.

All walkways must be stable and free from obstruction such as stored material and waste.

Adequate Barriers or other edge protection to prevent falls from open side of buildings, gangways will be provided etc.

Holes and Openings will be securely fenced off or securely fixed covers should be provided.

Adequate artificial lighting should be provided when work is carried on after dark or inside buildings.

The site should be kept tidy and materials stored safely.

Proper arrangements will be provided for collecting and disposing of scrap.

Nails and Timber will be hammered down or removed.





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**HAZARD – TRANSPORT ACCIDENTS**

*Preventative Procedures*

Vehicles will be kept in good repair. The Steering, Handbrake and Footbrake should work properly.

Operators should receive proper training if not competent when recruited.

Employees under 18 years of age should not be permitted to operate mobile plate\transport vehicles.

Vehicles should be driven safely.

Vehicles should be securely loaded.

Passengers should be prevented from riding in dangerous positions on vehicles or being carried on vehicles that are unsuitable for passengers.

If there are any tipping lorries, workers should never reach under the raised body unless it has been properly propped.

There must be a system to control the movement of vehicles on site to avoid danger to workers and others.

Where vehicles are reversing, they must be controlled by properly trained people.



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**HAZARD – RISK TO HEALTH**

*Preventative Procedure*

Harmful materials eg asbestos, lead must be identified and precautions taken.

Safety Information sheets should be available from the supplier.

Safety Equipment must be provided and used.

Other workers who are not protected must be kept out of danger areas.

In confined spaces, the atmosphere must be tested and a fresh air supply provided if necessary. Emergency Procedure must be in place for rescue from the confined space.

*Protective Clothing*

Protective Clothing is provided as appropriate including Helmets, Dust Masks, Ear Muffs, Waterproof Clothing, Safety Glasses etc.



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**HAZARDS – INADEQUATE WELFARE FACILITIES**

*Preventative Procedures*

Suitable Toilet Facilities must be provided.

Adequate Washing Facilities must be provided.

There should be a hut where clothes can be dried.

Wet Weather gear should be provided for those who have to work in wet conditions.

Suitable accommodation should be provided where workers can take meals and shelter from bad weather.

There must be a suitable first aid box with the required contents.

There should be an adequate supply of wholesome drinking water.



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**OFFICE HAZARDS – FIRE**

**Hazard:** Electrical faults, waste paper.

*Preventative Procedures:*

1. Waste Paper must be put in bins
2. Bins must be emptied everyday
3. Keep waste paper away from naked flames and electrical equipment.
4. Under New 2003 Regulations, smoking is **Not permitted** within the workplace.

**OFFICE HAZARDS – FALLS/TRIPS**



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**Hazard:** Goods\Trolleys in passage way, poor lighting in Stairs\Corridors, rushing and carrying.

Preventative Procedures

1. Never leave anything in corridors\walkways.
2. If you see anything report it to the Head of Dept. or Safety Officer.
3. Lights must be kept on where daylight is inadequate.
4. Do not rush on stairways.
5. Do not carry anything which obstructs your view.

**OFFICE HAZARDS – LIFTING\CARRYING**

**Hazard:** Heavy Loads, Paper\Post Bags, Equipment

Preventative Procedures

1. Use Trolleys
2. Get help
3. Follow instructions
4. If in doubt, leave it out.

**OFFICE HAZARDS – VISUAL DISPLAY UNITS LIGHTING**



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**Hazard:** Inadequate lighting, glare reflections, poor screen definition, seating or work station.

*Preventative Procedures*

1. Adjust Lighting to suit.
2. Use blinds to filter sunlight
3. Position VDU to reduce glare
4. Adjust to improve definition
5. Report to Head of Dept or Safety Officer.
6. Use seats with adjustable seat and back rest – adjust to suit.
7. Move VDU, Keyboard to suit, alternate work.



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When an accident occurs the following procedure must be followed:-

The General Manager\Safety Representative or immediate supervisor must be notified immediately. The appropriate\nominated person must take charge of the proceedings as follows:

1. Observe accident location and status of injured person.
2. If there is a risk of further injury move injured person to safety.
3. Call for immediate medical assistance or emergency service.
4. See that First Aid is administered as required.
5. If ambulance is called, make sure exact location is given and that ambulance can access site as near as possible to the injured person.
6. Establish location of Hospital and appoint a suitable person to travel with the injured person.
7. Notify family of injured person and if required arrange for transport for them to go to the hospital
8. Gather all information immediately about the accident and what caused it.
9. Obtain statements from witnesses, write them down as they are given.



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10. Complete accident report book and report form and check with Managing Director\Inspection Services Manager before sending to Health and Safety Authority as required. This is necessary only if the injured person is out of work for three or more days.
11. Take sketches\photographs of area where the accident happened.
12. If the Health and Safety Authority are to inspect the site and location of the accident, do not move anything unless further risks have to be avoided.
13. Seek guidance on further reports, investigations and the position of the Company.
14. Where necessary notify the appropriate authorities regarding hazardous substances i.e. Radioactive Materials should transport vehicles be involved in serious road traffic accidents.

**13.0 FIRST AID REQUIREMENTS**

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Contents of First Aid Boxes or Cases:

1. A copy of the leaflet (Form 1033) giving advise on Fist Aid Treatment.
2. A sufficient number (not less than 6) of small sterilized unmedicated dressings for injured fingers.
3. A sufficient number (not less than 3) of medium sized sterilized unmedicated dressings for injured hands or feet.
4. A sufficient number (not less than 3) of large sterilized unmedicated dressings for other injured parts.
5. A sufficient number (not less than 12) of adhesive wound dressings of a suitable type of assorted sizes.
6. A sufficient number (not less than 2) of Triangular Bandages of unbleached calico, the longest side of which measures not less than 51 inches and each of the other sides not less than 36 inches.
7. A sufficient supply of adhesive plaster.
8. A sufficient supply of absorbent sterilized cotton wool in ½ ounce packets.
9. A sufficient supply of approved eye ointment in a container of an approved size or type.
10. A sufficient number (not less than 2) of sterilized eye pads in separate sealed packets.
11. A rubber bandage or pressure bandage.
12. Safety Pins.

**14.0 EMERGENCY PROCEDURES**

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If an incident arises where a source becomes dislodged or fails to return to its container, the following action must be taken:-

1. Measure the Radiation intensity with a dose rate meter.
2. Reposition barriers / warning signs if required in order to keep dose rate at or below 2.5 uSv/hr at the barrier. No person must be allowed past the barrier, except those engaged in recovery or rescue operation. Detain any persons who may have been inside the barrier. If this is not possible, obtain their name, address and telephone number.
3. Contact your Radiation Supervisor and ensure that all barriers, warning signals and notices are kept in position until assistance arrives.
4. Plan a course of action, this is to be done outside the barrier. It will include obtaining proper handling equipment, shielding material, cutting equipment etc..
5. Inform the responsible person on site what has happened and what you propose to do. If the public is potentially at risk, inform the Garda Siochana and advise them on action to be taken.
6. Using proper handling equipment at arms length and working quickly try to replace the source into its container. If this operation is successful, monitor container and area before giving the **“ALL CLEAR”**
7. If No. 6 fails to rectify the emergency, attenuate the radiation by means of lead or other solid matter, taking care whenever possible to keep all parts of the body at arms length from the source. Monitor the dose recorded on your personal electronic dosimeter during these operations.

An efficient emergency plan is essential during any emergency. Everybody will know what to do thereby cutting down on wasted time which may be vital in saving lives\injuries.

The RPII shall be informed of any incident as soon as possible or no later than 24 hours following the incident. See RPII 2009 Guidance on the reporting of incidents to the RPII.



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*Establishment of Emergency Plan*

1. Establish the location of assembly point for the purpose of head count during the emergency.
2. In the case of fire a siren will sound and the building will be evacuated immediately.
3. The personnel will proceed to the designated meeting point after switching off all electrical equipment and closing door on route.
4. Each supervisor as appropriate is responsible for ensuring that all their staff have left the building
5. The Managing Director or his delegate must ensure that all visitors are accounted for and clear of the building.
6. A roll call will be held at the meeting point to ensure all personnel are accounted for.
7. This exercise will be performed without prior notice at least twice a year and records of such are maintained in the safety file.

*Accidents*



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Accidents involving possible damage to a source container i.e. road accident or collapse of steel on container on site etc. Similar emergency action must be taken as described under emergency procedures, but first consideration is the rescue of injured or trapped persons.

*Fire*

Sources and containers are not combustible and are designed to withstand quite severe fire conditions, without damage. Fire services must be informed of their presence. Sealed sources should be removed from the area, if this can be done without risk.

*Missing and Stolen Sources*

The following action must be taken:-

1. Begin an immediate search, using your monitor, while carrying out a visual check.
2. If the source is not located within 1 hour inform the Garda Siochana and your Radiation Supervisor and the RPII.

*Sources lost in Transit*

Contact the Garda Siochana, and the RPO immediately including the RPII.

*Stolen Vehicles containing Sealed Sources*

Contact the Garda Siochana and the RPO and also the RPII





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LICENCE NUMBER 2234-1920-13

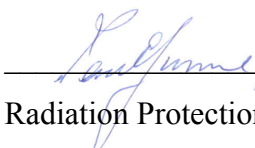
RADIOGRAPHIC PROTECTION OFFICER Mr Paul Dunne  
Tel: 087 9311999 – Mobile  
01-8381472 – Home  
01-8612011 – Work

ASSISTANT RPO Mr Jimmy Byrne  
Tel: 087-9311888 – Mobile  
045-903008 – Home  
01-8612011 – Work

RADIOLOGICAL PROTECTION ADVISOR Estelle Walker  
Tel +44 38 217 58704/ +44 7764 533496

**RADIOLOGICAL PROTECTION INSTITUTE OF IRELAND**

CONTACT Mr Hugh Synott  
Tel: 01-2697766  
Mr Jarliath Duffy  
Tel: 01-2697766

Signed   
Radiation Protection Officer

**ARRANGEMENTS FOR EMERGENCY PROCEDURES**

**DEFINITION:**

An emergency is defined as an unforeseen circumstance or combination, circumstances involving life or property or the environment that requires immediate action to establish control over the incident.

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All accidents, emergencies and incidents have elements of similarity, however, no master plan will fit all operations and adequate pre-planning for such situations must be carried out at a local level. Advance planning provides several benefits, it helps eliminate conditions that could lead to a disaster, can reduce injuries, loss of life and property damage. Periodic reviews of procedures ensure suitability.

Advance planning is firstly for employee safety and secondly for facilities. All employees receive instructions on use of alarm systems, emergency procedures and required courses of action. Emergencies by their nature require a quick response, whether it is a simple accident or a major incident and plans are formulated to deal with possible problems.

#### **EMERGENCY PLANS**

Managers must:

Ensure emergency plans exist for all reasonably foreseeable incidents and consider the location of employees, risks to the public and distance from and co-ordination of the emergency services. Plans should cover accidents, explosions, floods, electrocution, loss of radioactive source, fire, broken bones, chemical spills, etc

They must also:

- a. Ensure all personnel are aware of hazards and how to put the emergency procedure into operation e.g. raise the alarm, which calls the emergency services etc.
- b. Ensure all personnel know where to go to reach safety, assembly points and where to get emergency equipment eg first aid, stretcher, extinguishers etc
- c. Appoint a competent individual to control all incidents.
- d. Ensure immediate and accurate assessment of the situation, to assess its seriousness and emergency services required.
- e. Appoint a competent individual to call the emergency services required, to relay adequate information clearly and accurately eg Supervisor, Security or Receptionist.
- f. Assist the emergency services by clearly marking the site from the road and have a simple plan indicating the location of hazardous items.
  
- g. Clearly label important items like electric isolators, X Ray machines and fire fighting equipment and keep any access ways for emergency services and all escape routes clear.
- h. As far as possible, take care not to destroy the evidence, which might be required during the investigation of the incident.



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**EMERGENCY TELEPHONE NUMBERS**

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	<b>NAME</b>	<b>TELEPHONE NO</b>
<b>DOCTOR</b>	Dr Desmond Day	01-8341299





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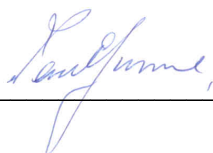
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<b>HOSPITAL</b>	Mater Misericordiae	01-8032000
<b>AMBULANCE</b>		999 OR 112
<b>FIRE BRIGADE</b>		999 OR 112
<b>GARDAI</b>	Blanchardstown	01-6667000
<b>SAFETY OFFICER</b>	Paul Dunne	087-9311999

**In case of emergency state:**

Your name, service you require, and where you are calling.  
Where you require attendance, give clear directions how to get there.  
Make sure someone is at the site entrance to direct the scene and ensure that the access is clear.

Assembly Point



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**15.0 SAFETY PLAN REQUIREMENT**

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A Safety Plan will be formulated whenever the work involved is of a duration of 30 days or 500 manhours

A Safety Plan will be incorporated into the project supervisors overall safety file.

EIS Ltd will co-operate with the project supervisor in any aspect as required by the Safety Health and Welfare at Work Construction Regulations 2006.

EIS Ltd will address and comply with the general principles of prevention as stipulated in the 3<sup>rd</sup> Schedule of the Safety, Health and Welfare at Work (Construction) Regulations 2006.

#### 16.0 ACTS AND REGULATIONS

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1955	Factories Act 1955
SI No 875	Radiological Protection Act 1991 ( Ionising Radiation) Order 2000



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SI No 3 of 1972	Factories (Electricity) Regulations 1972
SI No 283 of 1972	Factories (Manual Labour – Maximum Weights & Transport) Regulations 1972
SI No 357 of 1974	Factories (Abrasive Blasting Surfaces) Regulations 1974
SI No 238 of 1975	Factories Asbestos Processes) Regulations 1975
1975	The Construction (Safety, Health and Welfare) Regulations 1975 and 1988
SI No 280 of 1979	Factories (Protection of Eyes) regulations 1979
SI No 124 of 1979	Factories (Electricity Amendment) Regulation 1979
SI No 34 of 1989	European Communities (Protection of Workers) Exposure of Asbestos Regulations 1989
1988	Construction (Safety, Health and Welfare Amendment) Regulations 1988
1989	Safety, Health and Welfare at Work Act 1989
SI No 157 of 1990	European Communities (Protection of Workers – Exposure to Noise) Regulations 1990.
Form F1 912	Notice of Accident of Dangerous Occurrence
SI No 44 of 1993	Safety Health and Welfare at Work (General Applications)
SI No 138 of 1995	Safety Health and Welfare at Work (Construction)
SI No 349 of 2011	Carriage of Dangerous Goods by Road Regulations 2011
No 1493/93 of 8 June 1993	Council Regulation (Euratom) on Shipments of Radioactive Sources between Member States
2002	Guidelines for Reporting of Incidents, Radiological Protection Institute of Ireland , January 2002
2005	Safety, Health and Welfare at Work Act 2005



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2007

Safety, Health and Welfare at Work (General Application) Regulations  
2007