



Australian Government
**Australian Customs and
Border Protection Service**

INSTRUCTIONS AND GUIDELINES

FILE NO: N08/02023

Title : Air Cargo - Procedures for Managing
Radiological Hazards in the Workplace

Date : February 2009

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THIS INSTRUCTION AND GUIDELINE REFERS TO:

PRACTICE STATEMENT NO:

PS2008/08 Inspection and Examination of Air Cargo – Imports

PS2008/30 Inspection and Examination of Air Cargo - Exports

PUBLISHED DATE:

AVAILABILITY: INTERNAL AND EXTERNAL

SUBJECT: Procedures for managing radiological hazards in the workplace.

PURPOSE: To provide guidance to staff in dealing with radiological hazards in the workplace or if they are detected in air cargo consignments.

OWNER: NATIONAL MANAGER CARGO OPERATIONS NORTH

CATEGORY: OPERATIONAL

CONTACT: DIRECTOR CARGO BUSINESS IMPROVEMENT (AIR)

SUMMARY OF MAIN POINTS

This Instruction and Guideline has been developed to provide guidance to staff in dealing with radiological hazards in the workplace or if they are detected in air cargo consignments.

It also details general procedures relating to Occupational Health and Safety (OH&S) considerations, COMCARE reporting, Customs Incident Reporting Centre (CIRC) and Employee Assistance Providers (EAP).

It is important to read the complete Instruction and Guideline before proceeding.

INTRODUCTION

The intended policy outcomes of this document are to ensure that Customs meets its legislative obligations and duty of care to successfully manage radiological hazard risks in the workplace and ensure a safe and healthy work environment.

Using, storing, transporting and correctly disposing of radioactive materials has potential for exposure to ionising radiation. Industry uses many radioactive materials in research and medicine and employees may encounter shipments of radioactive material. Activities

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involving such hazards are strictly governed by legislation, national standards and codes of practice, as are other dangerous goods.

Illegal or criminal activity could also result in radiological exposure. This group of hazards includes nuclear devices, but may include radioactive isotopes, or 'dirty bombs' (otherwise 'standard' bombs designed to spread radioactive particles using conventional explosive).

Customs staff are more likely than most public servants or the general community to encounter illegal or criminal radiological hazards and incidents, due to our role in managing the integrity of Australia's borders. **Where possible, GR100 radiation detectors should be utilised in the workplace.**

This guideline recognises that:

- While the threat of the deliberate use of radiological material is relatively unlikely, it is more likely to increase than decrease (given the recent increase in terrorist activities);
- The consequences of a deliberate radiological incident are likely to be very serious, if not life-threatening;
- Technological advancements in testing and detection equipment are likely to be better ; and
- All staff should be aware of potential hazards and know what to do in the event of a radiological incident.

INSTRUCTIONS AND GUIDELINES

OH&S Considerations

Workplace safety is the responsibility of every Customs Officer.

Customs Officers are to wear OH&S issue personal protection equipment (e.g. steel cap boots, high visibility vests, etc) at all times.

Prior to commencing ***any*** examination, Customs Officers ***must*** assess the working environment and circumstances of each individual tasking to identify factors which may impact on officer's personal safety.

Officers should not rely solely on Customs and associated documentation/declarations when determining the contents of a consignment.

Physical deconstruction should not proceed until a full visual assessment of the whole consignment has been completed and where necessary safety issues have been mitigated.

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Officers are to handle cargo according to safe lifting guidelines (*OH&S Hazard Instruction & Guideline – Manual Handling*) and where applicable, use team lifting or mechanical devices to prevent injury.

Customs Supervisors and Managers are to ensure that sufficient First Aid trained officers are available in the workplace.

Comcare

All injuries or incidents are to be reported in Human Resource Information System (HRIS), to a supervisor and to Comcare via the '*Notification and Report of an Incident*' form. The Regional OH&S Coordinator should also be informed.

Note that there are legal reporting timeframes when reporting to Comcare about instances of death, serious personal injury, incapacity or a dangerous occurrence.

Notifiable workplace incidents are to be reported to Comcare via facsimile on telephone **1300 305 916**. Timeframes as follows:

Death	-within 2 hours
Serious Personal Injury	-within 24 hours
Incapacity greater than 30 days	-within 24 hours of becoming aware of duration
Dangerous Occurrence	-within 24 hours

All hazards are to be reported according to the OH&S Hazard Reporting Process. Specifically, hazards are reported to an immediate supervisor and to the Regional OH&S Coordinator on the *Hazard Report Form* where the hazard cannot be immediately eliminated, or further action is required.

N.B. Failure to comply with the above timeframes is a breach of section 68 of the *Occupational Health and Safety Act 1991* and regulation 37A of the *Occupational Health and Safety (Safety Arrangements) Regulation 1991*.

Customs Incident Reporting Centre (CIRC)

Any incidents that arise during an examination that have the capacity to interrupt or affect Customs business, including security incidents, must be reported to the Customs Incident Reporting Centre (CIRC) on telephone **1800 303 387**.

Employee Assistance Provider (EAP)

If required, the Customs Employee Assistance Provider (EAP), PPC Worldwide, is available to work with staff involved in a critical incident. Trained counsellors can be deployed to a workplace within 2 hours. The PPC contact number is **1300 361 008**, 24 hours - 7 days.

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Procedures

Identify the Hazard

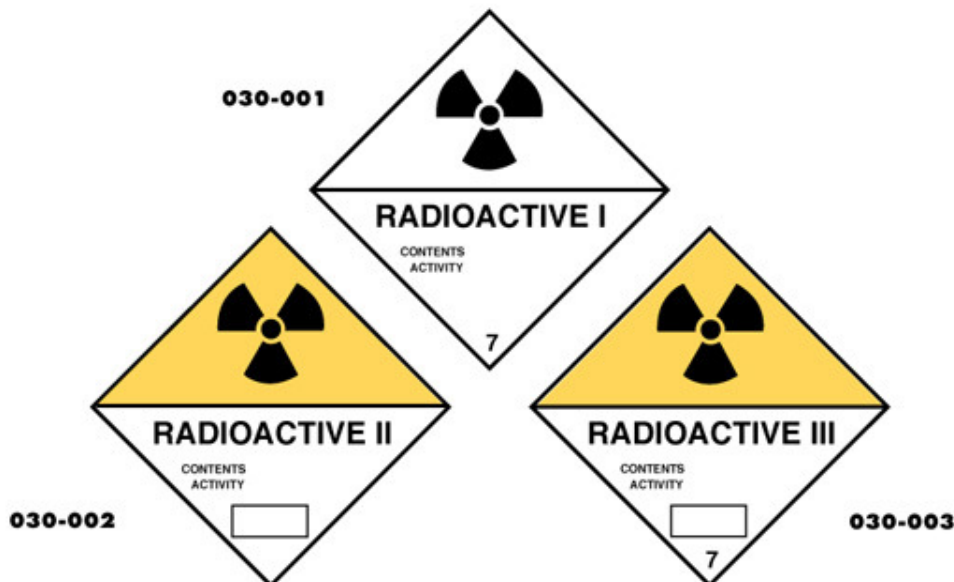
Human senses cannot detect radiological materials. There are two ways to identify radiological hazards :

- Through shipment/package markings
- By using monitoring equipment.

Radiation is measured in μSv (micro sieverts) per hour. The recommended dose limit applied by the National Health and Medical Research Council is 1 milli sievert per year. The equivalent dose per hour in terms of exposure should not generally exceed 5 micro sieverts per hour ($5\mu\text{Sv}$ per hour). Short-term exposure of up to 20 micro sieverts per hour ($20\mu\text{Sv}$ per hour) can be safely tolerated for up to 15 minutes per hour as part of the radiation testing process (for example when using the GR135 radiation pager).

Employees **must not** remain in a location where the dose rate is higher than $20\mu\text{Sv}$ per hour or spend more than 15 minutes total in any location where the dose rate is between $5\text{-}20\mu\text{Sv}$ per hour.

Radioactive materials are transported in solid, liquid or gaseous form and usually encapsulated so leakage cannot occur. Their special transport packaging can withstand substantial damage without compromising the containment. The packaging may include a shielded source container and a robust outer container. In some cases, low-level radioactive material is transported in large quantities in bulk containment. All legitimate containers should have stickers or labels displaying the international trefoil symbol for radioactive materials. For example ;



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Some work areas use radiation detection equipment to check legitimate consignments of radiological materials and identify any illegal radioactive material. The most likely cause of disseminated radiological material would be an explosion using a 'dirty bomb'. This would include some radioactive material, such as medical or industrial isotopes, combined with some explosive or incendiary material.

There are three common types of radiation:

- Alpha: Travels only centimetres, generally will not penetrate skin.
- Beta: More penetrating than alpha, may cause burns to skin, travels only a few metres.
- Gamma: Very penetrating, will travel tens to hundreds of metres depending on strength.

Situations where Customs staff may encounter radiological hazards include:

- Testing and examining shipping containers;
- Undertaking ship searches;
- Testing legitimate consignments of radiological materials;
- Examining international cargo;
- Examining and processing postal items;
- Searching or handling passenger baggage; and
- Wharf patrol and counter terrorist activities.

Assess the Risk

Radiological hazards have the potential to be a serious threat to employees, customers, assets, operations and facilities.

The chance of accidents or illness from an incident varies but the potential consequences are usually relatively serious. The risk from exposure to ionising radiation is considered proportional to the dose received. Effects might include: vomiting, fatigue, skin burns and lesions, bleeding, increased risk of infection, hair loss, and perhaps death.

Due to the potential consequences most incidents are likely to fall into the high or medium risk category. It is therefore important that this risk assessment process is conducted speedily and decisively and a move to control the risk/s is made as soon as practicable.

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Control the Risk

It will be difficult to eliminate most radiological hazards once identified, so staff will need to react quickly to the incident and implement control measures that will minimise or negate the risk to themselves and others. The most common control methods are likely to involve:

- Modifying the hazard – neutralising or reducing the risk associated with the hazard;
- Isolating the hazard – by evacuating people from around the hazard; and
- Using Personal Protective Equipment – to minimise exposure.

Where an employee searching a vessel or cargo, encounters a package apparently containing radioactive material and has reason to suspect it contains a prohibited import, radiation detection equipment such as the GR100 Radiation Pager or GR135 Radiation Identifier should be utilised in the first instance to measure radiation levels. Employees should not remain in the vicinity of such material or undertake any further physical examination until it has been deemed safe.

Only officers who are undertaking or have completed the relevant training courses in the use of these technologies should complete the testing.

It should be noted that in instances where dosage rates exceeds 20 μ Sv per hour, only a representative of the relevant State/Territory Authority or certain authorised individuals can open the package. For example, a representative from the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

Where radiation detection equipment shows a cargo (legal or illegal) has a high radioactive dose rate (in excess of 20 μ Sv per hour) the '*Radioactive Contamination Response*' I & G must be applied. Any employee who believes they may have been close to, or contaminated by, radioactive materials should immediately discontinue the operation and tell their Team Leader or manager then complete the following steps as applicable:

- Reduce exposure time by keeping away from the source. The further away from the radioactive material, the better;
- Cover yourself with heavy or thick material to shield you from radiation;
- Place a handkerchief over your mouth if you think there are airborne radioactive particles and move upwind;
- Consider removing outer clothing if you think radioactive particles have lodged in your clothing;
- Wash exposed skin and hair areas;
- Seek medical advice; and
- Follow emergency procedures (below).

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Use the following emergency procedures for every radiological incident. The actual order of each step depends on the nature and seriousness of the hazard or incident, and should be used in addition to established emergency procedures at the location.

- Remain calm;
- Survey the scene and **ensure your immediate safety** and then of others (if possible without harm to you);
- Notify the depot operator/supervisor to enable local emergency procedures to be activated. Depending on the circumstances this will be to 000 (Fire Brigade, and/or Ambulance) and/or the Customs or building Chief Warden (or deputy) and/or an appropriate First Aid officer and/or Emergency Management Australia and/or Australian Federal Police (AFP) and/or your supervisor. You should advise that:
 - There has been a radiological incident; and
 - (if applicable) you and/or others have been exposed and/or injured

Also provide:

- A description of the incident or device, including what action has been taken;
- The exact location of the incident or device such as the street address and building information;
- An estimate of the number of victims or people exposed;
- Descriptions of any symptoms or obvious injuries;
- Indications of wind direction (the direction the wind is coming from) for Radiological incidents
- Apply appropriate First Aid if safe to do so.

It is also important that appropriate medical advice is sought following injury and actual or possible exposure to Radiological materials. Having appropriate testing and management strategies is essential, as there may be no obvious symptoms or signs of exposure. This will help minimise, or negate, any injury or illness.

Monitor and Review

After a radiological exposure incident, conduct testing or investigations to determine what happened, and tell those involved as soon as possible after the incident. It is also important that staff get continuing information on any investigation, so they are fully informed of progress and outcomes affecting them.

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RELATED POLICIES AND REFERENCES

PRACTICE STATEMENTS

Customs OHS Policy – OHS Risk Management – HSMA 2
OHS Policy Guideline – Personal Protective Equipment (PPE)
OHS Policy Guideline – First Aid;

OTHER INSTRUCTIONS AND GUIDELINES

- *Customs OHS Hazard Instructions and Guidelines*
 - Hazardous substances*
 - Chemical hazards*
 - Manual Handling*
 - Radiological Hazards*

Chief Executive Instruction

- Number 4.12 refers to the use of Mobile Telephones
- Number 5.5 refers to the use of Commonwealth Vehicles

Occupational Health and Safety Act 1991

- Section 68 states the reporting timeframes for notifiable workplace incidents

Occupational Health and Safety (Safety Standards) Regulations 1994

- Regulation 37A relates to notifiable workplace incidents

Customs Act 1901

- Section 30 refers to Customs control of goods
- Section 33 refers to persons not to move goods subject to the control of Customs
- Section 50, 51 and 51A relate to prohibited imports including certain controlled substances
- Section 112 and 112A relate to prohibited exports including certain controlled substances
- Section 186 relates to the general powers of examination of goods subject to Customs control
- Section 186A relates to the power of officers to take copies of documents examined under s.186
- Section 229 relates to forfeited goods
- Section 233BAA refers to Tier 1 goods
- Section 233BAB refers to Tier 2 goods

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Customs Regulations 1926

- Regulation 179AA and Schedule 1AA relate to Tier 1 and Tier 2 goods

Customs (Prohibited Imports) Regulations 1956

Customs (Prohibited Exports) Regulations 1958

CONSULTATION

INTERNAL

The following internal stakeholders have been consulted in the development of these Instructions and Guidelines.

CARGO BRANCH
PEOPLE AND PLACE BRANCH
BORDER TECHNOLOGIES

PARTNER AGENCIES

AUSTRALIAN RADIATION PROTECTION AND NUCLEAR SAFETY AGENCY
(ARPANSA)
STATE FIRE BRIGADE/SERVICES
STATE AMBULANCE SERVICES
STATE EMERGENCY SERVICES
STATE AIRPORT AUTHORITIES

Approval

Approved on 5 February 2009 by: Jaclyne Fisher, National Director Cargo

Approving Officer

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