

**GENERAL INSTRUCTION MANUAL****150.007**ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**

ISSUE DATE

**01/08/2011**

REPLACES

**06/12/2005**SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**

APPROVAL

**HALM**

PAGE NO.

**1 OF 10****SCOPE**

This GI specifies the requirements additional to GI 150.003 "Ionizing Radiation Protection": for handling unsealed radioactive sources and requirements to control and limit radioactive contamination. Wherever necessary, the user Department/Organization shall develop procedures specific to the type, activity and characteristics of the unsealed radioactive materials used by such Department/Organization.

**CONTENT**

1. **DEFINITIONS AND ABBREVIATIONS**
2. **CONTAMINATION CONTROL LEVELS**
3. **AIRBORNE RADIOACTIVITY CONTROL LEVELS**
4. **RULES FOR LABORATORY PRACTICE AND USING UNSEALED RADIOACTIVE SOURCES**
5. **WORKERS CONTAMINATION CONTROL**
6. **MONITORING FOR PERSONNEL CONTAMINATION**
7. **GUIDELINES FOR PERSONNEL CONTAMINATION MONITORING WITH HAND-HELD SURVEY INSTRUMENTS**
8. **PERFORMANCE OF MONITORING**
9. **RADIOACTIVE SPILLS DECONTAMINATION**
- \*\*10. REFERENCES**

**1. DEFINITIONS AND ABBREVIATIONS:**

**ALARA:** Acronym for "As Low As Reasonably Achievable" which means making every reasonable effort to maintain exposures to ionizing radiation as far below the dose limits as practical, consistent with the permitted utilization of the radiation source, taking into account the state of technology, the economics of improvements in relation to the state of technology, the economics of improvements in relation to benefits to public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of radiation based technologies in the company's interest.

**Annual limit on intake (ALI):** the amount of intake in one year of a specific radionuclide in the Reference Man by way of ingestion, inhalation or through the skin which may lead to a committed effective dose equal to the annual effective dose limit.

**Authorized Person:** An individual who is authorized in writing by his management to control certain activities.

**Contamination:** the deposition of unwanted radioactive material on the surfaces of structures, areas, objects, or people. It may also be airborne, external, or internal (inside components or people).

**Contamination area:** any area where contamination levels are greater than the values specified in Table 2, but less than or equal to 100 times those values.

**Decontamination:** the reduction or removal of contaminating radioactive material from a structure, area, object, or person by physical or chemical process.

**Derived Air Concentration (DAC):** the concentration of a given radionuclide in air which, if breathed by Reference Man for a working year of 2,000 hours under conditions of light work, results in an intake of one Annual limit on intake (ALI).

**\*Fixed surface contamination:** any type of contamination other than removable contamination, where the radioactivity cannot be transmitted to personnel, and the hazard, consequently, is that of external radiation. Therefore, the degree of acceptable contamination is directly related to the external radiation dose rate.

**High contamination area:** any area where contamination levels are greater than 100 times the values specified in Table 2, of this GI.

**Radiological buffer area:** an intermediate area established to prevent the spread of radioactive contamination and to protect personnel from radiation exposure.

**GENERAL INSTRUCTION MANUAL****150.007**ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**ISSUE DATE  
**01/08/2011**REPLACES  
**06/12/2005**SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**APPROVAL  
**HALM**PAGE NO.  
**2 OF 10**

**Reference Man:** a person with the anatomical and physiological characteristics of an average individual, which is used in calculations assessing internal dose (also may be called "Standard Man") as defined by ICRP 23.

**Removable (loose) surface contamination:** the contamination which can be removed off the surface during normal handling processes and it can rub from a surface onto another on contact.

**Surface radioactive contamination:** the presence of a radioactive material on a certain surface in excess of limits specified by Table 1 of this GI.

**Wipe sample:** a sample made for the purpose of determining the presence of removable radioactive contamination on a surface. It is done by wiping, with slight pressure, a piece of soft filter paper over a representative surface area. It is also known as a "swipe or smear" sample.

**\*\* ABBREVIATIONS:****DPM:** Disintegrations per minute**EPD:** Environmental Protection Department**ICRP:** International Commission on Radiological Protection**\*KACST:** King Abdulaziz City for Science and Technology (competent authority)**LPD:** Loss Prevention Department**NORM:** Naturally Occurring Radioactive Material**\*\*PMSD-SAMSO:** Preventive Medicine Services Division – SAMSO**RPO:** Radiation Protection Officer**RPU:** Radiation Protection Unit<sup>14</sup>**C:** Carbon-14<sup>137</sup>**Cs:** Cesium-137<sup>51</sup>**Cr:** Chromium-51<sup>60</sup>**Co:** Cobalt-60<sup>125</sup>**I:** Iodine-125<sup>129</sup>**I:** Iodine-129<sup>131</sup>**I:** Iodine-131<sup>32</sup>**P:** Phosphorous-32<sup>33</sup>**P:** Phosphorous-33<sup>35</sup>**S:** Sulfur-35<sup>3</sup>**H:** Tritium (hydrogen-3)**2. CONTAMINATION CONTROL LEVELS**

- 2.1 \*A surface shall be considered radioactive contaminated if the presence of a radioactive material on a certain surface in excess of 4 Becquerel/cm<sup>2</sup> (110 picocurie/cm<sup>2</sup>) for beta, gamma and low toxicity alpha emitters or 0. 4 Becquerel /cm<sup>2</sup> (11 picocurie/cm<sup>2</sup>) for all other types of alpha emitters, with the exception of NORM contamination. Low and high toxicity groups are provided in Appendices 6 & 7 of KACST's General Instruction for Ionizing Radiation Protection in the Kingdom of Saudi Arabia
- 2.2 \*The removable surface contamination with a high toxicity radioactive material on the various surfaces and objects must not exceed the limits stated in Table 1 of this GI and should be reduced as far below limits specified in Table 1 as is reasonably achievable.
- 2.3 Decontamination shall be performed when surfaces area exceeding the limits in Table 1 for total contamination and according to action levels for decontamination listed in Table 2 and section 9 of this GI
- 2.4 Radiological surveys shall be performed to detect contamination that become removable over time.

**GENERAL INSTRUCTION MANUAL****150.007**ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**ISSUE DATE  
**01/08/2011**REPLACES  
**06/12/2005**SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**APPROVAL  
**HALM**PAGE NO.  
**3 OF 10**\* Table 1: **Limits of Removable Surface Contamination for Various Objects**

Type of Surface	Maximum Concentration (Bq/cm <sup>2</sup> )	
	High Toxicity Alpha Emitters	Beta, Gamma & Low Toxicity Alpha Emitters
Various equipment, tools and surfaces	0.4 (2400)	4.0 (24000)
Skin and extremities	0.2 (1200)	2.0 (12000)
Laboratory overalls	0.4 (2400)	4.0 (24000)
Personal clothes outside laboratories	0.04 (240)	0.4 (2400)

**Note:** Numbers in brackets are in units of (dpm/100 cm<sup>2</sup>)\*Table 2: **Actions Levels for Decontamination**

Smear Results	Action
100 dpm/100cm <sup>2</sup>	No action required by RPO. Left to discretion of Authorized User.
100-350 dpm/100 cm <sup>2</sup>	The Authorized User or laboratory personnel should clean area or surfaces as soon as possible. Shoe covers and step-off pads shall be used if contamination is on floor.
350-2,000 dpm/100 cm <sup>2</sup>	Contamination should be cleaned directly under supervision of RPO. Shoe covers and step-off pads are required for entry into area. Only essential personnel will have access.
>2,000 dpm/100 cm <sup>2</sup>	Airflow should be shut off. Entry of personnel into area should be prevented until the RPO arrives. Cleanup should begin immediately by Authorized user under supervision of RPO. Shoe covers and step-off pads are required. The RPO shall without delay notify the LPD, RPU and PMSD-SAMSO about the incident. Use the form in the Appendix I to notify RPU.

**3. AIRBORNE RADIOACTIVITY CONTROL LEVELS**

- 3.1 Workers should not be exposed unnecessarily to airborne radioactivity. Use of engineering and administrative controls to reduce the potential for internal exposure should be evaluated by the RPO before allowing workers, with or without respiratory protection, to enter areas with airborne radioactivity.
- 3.2 Occupied areas with airborne radioactivity concentrations that are greater than or potentially greater than 10 percent of Derive Air Concentration shall be posted as specified in Table 3 of this GI.
- 3.3 Derive Air Concentration (DAC) in work location of any single nuclide (i) must not exceed the amount calculated according to the following formula:

$$DAC_i = [20X10^{-3}] \div [h(g)_i \times 2500] \text{ Bq/m}^3$$

Where  $h(g)_i$  is the factor for converting this nuclide's intake by inhalation into a committed effective dose for adults,  $h(g)_i$  are provided in KACST regulations manual.

**GENERAL INSTRUCTION MANUAL****150.007**ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**ISSUE DATE  
**01/08/2011**REPLACES  
**06/12/2005**SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**APPROVAL  
**HALM**PAGE NO.  
**4 OF 10****Table. 3:** Criteria for Posting Contamination, High Contamination and Airborne Radioactivity Areas.

AREA	CRITERIA	POSTING
<b>Contamination</b>	Contamination levels (dpm/100 cm <sup>2</sup> ) > 1 time but < 100 times Table 2 values	"CAUTION, CONTAMINATION AREA"
<b>High Contamination</b>	Contamination levels (dpm/100 cm <sup>2</sup> ) > 100 times Table 2 values	"DANGER, HIGH CONTAMINATION AREA"
<b>Airborne Radioactivity</b>	Concentrations (Ci/cm <sup>3</sup> ) > 10% of any DAC value	"CAUTION, AIRBORNE CONTAMINATION AREA"

**4. RULES FOR LABORATORY PRACTICE AND USING UNSEALED RADIOACTIVE SOURCES**

All facilities' new equipments that contain or deal with radioactive material must receive approval from the Radiation Protection Unit/Environmental Protection Department prior to usage/implementation.

The following general rules are recommended for laboratories where radioisotopes and unsealed radioactive sources are used:

- 4.1 The laboratory/facility where open radioactive sources are used should house only equipment/materials necessary for the functions of the laboratory. Unnecessary equipment/materials should not be brought in or stored in such laboratories/facilities.
- 4.2 The movement and storage of radioactive material must be under the control of the authorized person.
- 4.3 Sample preparation shall not be done in counting rooms.
- 4.4 Minimize time of exposure by performing the experiment or the procedure as quickly and as efficiently as possible.
- 4.5 Minimize your potential external radiation exposure by positioning yourself as far as possible away from the radiation source.
- 4.6 When working with radioactive material, place shielding between yourself and a source of penetrating radiation to decrease your dose. Shielding is not necessary for low energy beta emitters e.g. <sup>3</sup>H, <sup>14</sup>C, <sup>33</sup>P, and <sup>35</sup>S. For high-energy beta emitter's such as <sup>32</sup>P, and for gamma or x-ray emitters such as <sup>51</sup>Cr and <sup>125</sup>I, adequate shielding shall be used. Exact dimensions/specifications of required shielding shall be determined by a competent specialist in radiation protection.
- 4.7 When using potentially volatile compounds a chemical fume hood, which has been certified for radioactive materials work shall be used.
- 4.8 Dispose of syringes and pipettes promptly and in appropriate containers.
- 4.9 Solid and liquid waste materials must be put into suitable labeled receptacles prior to permanent disposal.
- 4.10 Guard against glass breakage and puncture injury during use and disposal.
- 4.11 Do not attempt to recap needles before disposal.
- 4.12 Never introduce any food or drink into a posted restricted area, even for temporary storage.
- 4.13 Do not eat or drink in any area where radionuclide are used, and never store food and drinks in a cold room or refrigerator that is designated for radioactive material storage.
- 4.14 \*No mouth operations are allowed, e.g. pipettes, wash-bottles, and labels must not put to the mouth. Use remote pipeting devices and aerosol resistant tips. Preferably, at least one set of pipettes dedicated for radioisotope usage only.
- 4.15 Eye protection, (e.g. goggles, face shield) shall be used to prevent contamination of the eyes. This is particularly important for individuals wearing contact lenses since some lenses will absorb and concentrate radiochemical.
- 4.16 Wear protective non-permeable gloves at all times when working with radioactive materials.
- 4.17 Change gloves frequently during the work, disposing of the used gloves as radioactive waste.

**GENERAL INSTRUCTION MANUAL****150.007**ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**ISSUE DATE  
**01/08/2011**REPLACES  
**06/12/2005**SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**APPROVAL  
**HALM**PAGE NO.  
**5 OF 10**

- 4.18 Wash hands after using radioactive materials and monitor the hands for contamination, especially before eating or smoking, and prior to leaving the laboratory.
- 4.19 Laboratory coats, disposable gloves, and protective eyeglasses must be used in the laboratories.
- 4.20 After working with radioactive material gloves, clothing, apparatus and benches must be surveyed with a suitable radiation detector.
- 4.21 Appropriate personnel monitoring badges and finger rings must be used at all times whilst working with radioactive material.
- 4.22 Radioactive work should not be undertaken if a person has any open wounds.
- 4.23 "Caution Radioactive Material" signs or labels, with the standard radiation warning symbol must be posted in Arabic and English, on doors, centrifuges, incubators, freezers, refrigerators, hoods, glassware, and other containers holding radioactive substances in excess of the following limits:

Material	Activity (Micro curies)	Activity (Becquerel)
Any radionuclide other than alpha emitting radionuclide, or mixture of beta emitters of known composition	0.1	3700
Any alpha emitting radionuclide, or mixtures of beta emitters of unknown composition	0.01	370

- 4.24 Lockable radioactive nuclides storage boxes, which can be properly secured to refrigerator or freezer, should be used.
- 4.25 Laboratory record book for maintaining inventories, surveys, and spill incidents should be kept at the lab.
- 4.26 Copy of the applicable radiation safety procedure should be kept at the lab.
- 4.27 Calibrated survey meters and materials for conducting wipe tests should be used.
- 4.28 Contamination surveys of radiation work areas shall be done daily or at the conclusion of work. Monthly surveys are sufficient when only small quantities are used (less than values listed in 4.23). Waste storage and other areas shall be surveyed weekly. Records of all surveys shall be maintained.
- 4.29 Spill kit in each room where radioactive nuclides are used should be clearly labeled.

**5. WORKERS CONTAMINATION CONTROL**

- 5.1 Personnel exiting Contamination Areas, High Contamination Areas, Airborne Radioactivity Areas or Radiological Buffer Area established for contamination shall be frisked for contamination as required by section 6 of this GI. This does not apply to personnel exiting areas containing only radionuclide, such as tritium, that cannot be detected using hand-held or automatic frisking equipment.
- 5.2 Monitoring for contamination should be performed using frisking equipment that under laboratory conditions can detect total contamination of at least the values specified in Table 1 of this GI. Use of automatic monitoring units that meet the above requirements is encouraged.
- 5.3 Personnel found with detectable contamination on their skin or personal clothing, other than noble gases or natural background radioactivity, should be promptly decontaminated.

**GENERAL INSTRUCTION MANUAL****150.007**ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**ISSUE DATE  
**01/08/2011**REPLACES  
**06/12/2005**SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**APPROVAL  
**HALM**PAGE NO.  
**6 OF 10****6. MONITORING FOR PERSONNEL CONTAMINATION**

6.1 Personnel shall perform a whole body frisk under the following conditions:

- A. upon entry into an uncontaminated area after exiting Contamination Areas and Airborne Radioactivity Areas
- B. As directed by the RPO.

6.2 Personnel shall perform a hand and foot frisk after exiting a Radiological Buffer Area containing Contamination, or Airborne Radioactivity Areas.

6.3 Personnel frisking shall be performed after removal of protective clothing and prior to washing or showering.

6.4 Personnel frisking shall be performed using instruments that meet the minimum detection requirements of 5.2. Guidelines for personnel frisking are provided in section 7.

6.5 The use of automated personnel contamination monitors is encouraged.

6.6 Personal items, such as notebooks, papers and flashlights, shall be subject to the same frisking requirements as the person carrying them.

6.7 Instructions for personnel frisking should be posted adjacent to personnel frisking instruments or monitors.

6.8 The personnel frisking requirements contained in this section are not applicable at those facilities that contain only radionuclide, such as tritium, that cannot be detected by currently available hand-held or automated frisking instrumentation. At such facilities, additional emphasis should be placed on worker bioassay programs and routine contamination and air sampling programs.

**7. GUIDELINES FOR CONTAMINATION MONITORING WITH HAND-HELD SURVEY INSTRUMENTS:**

The whole body frisk should be performed carefully and should take at least two to three minutes. The following procedure shall be followed:

- 7.1 Verify that the instrument is suitable for type and level of radiation to be detected.
- 7.2 Verify that the instrument is adequately operational, set to the proper scale and the audio output can be heard during frisking.
- 7.3 Hold the probe less than ½ inches from surface being surveyed for beta and gamma contamination, approximately ¼ inch for alpha contamination.
- 7.4 Move the probe slowly over the surface, approximately 2 inches per second.
- 7.5 If the count rate increases during frisking, pause for 5 to 10 seconds over the area to provide adequate time for instrument response.
- 7.6 If the count rate increases to a value greater than contamination limits as specified by section 2 of this GI or the instrument alarms, remain in the area and notify the RPO.

**8. PERFORMANCE OF MONITORING**

8.1 Frisk the hands before picking up the probe.

8.2 Perform the frisk in the following order:

- Head (pause at mouth and nose for approximately 5 seconds)
- Neck and shoulders
- Arms (pause at each elbow)
- Chest and abdomen
- Back, hips and seat of pants
- Legs (pause at each knee)
- Shoe tops
- Shoe bottoms (pause at sole and heel)



**GENERAL INSTRUCTION MANUAL****150.007**ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**ISSUE DATE  
**01/08/2011**REPLACES  
**06/12/2005**SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**APPROVAL  
**HALM**PAGE NO.  
**7 OF 10**

- Personnel and supplemental dosimeters.
- 8.3 Return the probe to its holder and leave the area. The probe should be placed on the side or face up to allow the next person to monitor their hands before handling the probe.

**9. RADIOACTIVE SPILLS DECONTAMINATION**

- 9.1 When radioactive material spill occurs, instantly notify all occupants of the laboratory about the spill.
- 9.2 Only individuals who are trained on decontamination and will participate in the decontamination process shall be allowed to stay in the contaminated laboratory. All other individuals shall be evacuated from the lab after being frisked for contamination by a suitable radiation survey meter.
- 9.3 Have someone who is not contaminated notify the RPO immediately.
- 9.4 Wear protective clothing, such as disposable coveralls that are made of impermeable material, shoe covers, and gloves before starting containment and clean up of the spills. Eye protection, (e.g. goggles, face shield) shall be used to prevent contamination of the eyes. This is particularly important for individuals wearing contact lenses since some lenses will absorb and concentrate radiochemical. In addition to the above,
- Remove watches; wear shoe covers over the shoe.
  - Ensure that the legs of the coveralls cover the shoe covers. The elastic strap of the coverall legs must be worn on the outside of the shoe covers across the bottom of the foot.
  - Wear cotton or surgical gloves (optional). Ensure that the gloves are tucked under the coveralls at the wrist.
  - Wear rubber or neoprene gloves, pull the gloves over the wrist of the coverall and seal the gloves to the coveralls with tape. Note that the glove selection should be suitable to the chemical composition of the material being handled to prevent permeation through the glove.
  - Wear rubber shoe covers over shoe covers.
- 9.5 Cover the spill with absorbent material as quickly and as completely as possible to prevent spreading. To localize the contamination, wipe inward toward the center of the spill. Do not wipe back and forth or randomly.
- 9.6 If a biological agent is involved, soak the area with a disinfectant for at least 30 minutes to inactivate the agent, and wash your hands and arms thoroughly with soap or an appropriate disinfectant. Scrub your hands for several minutes and rinse them thoroughly.
- 9.7 Prior to leaving the contaminated area remove your gloves, shoes, and laboratory coats; segregate them as radioactive waste before leaving the laboratory.
- 9.8 After removing protective clothing, wash all contaminated areas of skin thoroughly, without vigorous scrubbing, with cool water and mild soap for five to ten minutes. Do this as soon as possible after the accident.
- 9.9 Remove all clothing, which may have been contaminated.
- 9.10 Workers should take care not to re-contaminate themselves after they have thoroughly washed.
- 9.11 Workers should not leave the area or go to the PMSD-SAMSO until RPO has determined that they have been successfully decontaminated.
- 9.12 \*\*If incident (Smear Results >2,000 dpm/100 cm<sup>2</sup>) occurred, promptly notify EPD/RPU by telephone call, then fill up form in appendix I and email or fax it to EPD/RPU.

**\*\*10. REFERENCES**

- 10.1 General Instruction for Ionizing Radiation Protection in the Kingdom of Saudi Arabia, KACST (2007)
- 10.2 GI 150.003 "Ionizing Radiation Protection"
- 10.3 Radiation Protection Manual – 2005
- 10.4 Saudi Government Regulations issued by KACST "General Instructions of Ionizing Radiation Protection in Kingdom of Saudi Arabia" 2007

SAUDI ARABIAN OIL COMPANY (Saudi Aramco)

## GENERAL INSTRUCTION MANUAL

G. I. Number **Approved**

**150.007**

ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**

ISSUE DATE  
**01/08/2011**

REPLACES  
**06/12/2005**

SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**

APPROVAL  
**HALM**

PAGE NO.  
**8 OF 10**

- 10.5 Saudi Government Regulations issued by KACST "Instructions of Radioactive Waste Management in Kingdom of Saudi Arabia" 2007
- 10.6 International Atomic Energy Agency (IAEA) Safety Series No. 115, 1996
- 10.7 International Atomic Energy Agency (IAEA), Code of Conduct on the Safety and Security of Radioactive Sources, 2004
- 10.8 International Organization for Standardization (ISO), Radiation Protection – Sealed Radioactive Sources – General Requirements & Classification, ISO 2919:1999
- 10.9 ICRP 23 International Commission on Radiological Protection Publication 23 (ICRP Publication 23), Report on the Task Group on Reference Man.

\* CHANGE

\*\* ADDITION

NEW INSTRUCTION ☐

COMPLETE REVISION ☐



**GENERAL INSTRUCTION MANUAL****150.007**ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**ISSUE DATE  
**01/08/2011**REPLACES  
**06/12/2005**SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**APPROVAL  
**HALM**PAGE NO.  
**9 OF 10****\*\*Appendix I**RPU/EPD-9 (6/08)**Environmental Protection Department**

Environmental Compliance Division / Radiation Protection Unit

Tel: 876-0354/ 876-0357/ 876-0361, Fax: 876-0330

Emails: [rafat.nassar@aramco.com](mailto:rafat.nassar@aramco.com); [ahmed.siari@aramco.com](mailto:ahmed.siari@aramco.com); [omar.somali@aramco.com](mailto:omar.somali@aramco.com)**Radiation Incident Notification**

1.	Date & Time of Incident	Date			
		Time			
2.	Incident Location				
3.	Type of Practice	<input type="checkbox"/> Industrial Radiography	<input type="checkbox"/> Nuclear Gauges		
		<input type="checkbox"/> Well Logging	<input checked="" type="checkbox"/> Medical		
		<input type="checkbox"/> Others, specify::			
4.	Type of Incident	<input type="checkbox"/> Personal exposure	<input type="checkbox"/> Lost	<input type="checkbox"/> Stuck	
		<input type="checkbox"/> Fire	<input type="checkbox"/> Car accident	<input type="checkbox"/> Contamination	
		<input type="checkbox"/> Others, specify::			
5.	Radioactive Source Information	Radioisotope:	Activity:		
		Condition: <input type="checkbox"/> Sealed <input type="checkbox"/> Unsealed			
6.	Source Owner Information				
7.	Telephone Numbers of Source Owner				
8.	Notified EPD By	Name			
		Badge No.			
		Tel. No.			
		e-mail			
9.	Notification Date & Time	Date			
		Time			

-If incident occurred, **PROMPTLY** NOTIFY EPD/RPU by telephone call, **THEN** fill up this form and email or fax it to EPD/RPU.

SAUDI ARABIAN OIL COMPANY (Saudi Aramco)

## GENERAL INSTRUCTION MANUAL

G. I. Number **Approved**

**150.007**

ISSUING ORG. **ENVIRONMENTAL PROTECTION DEPARTMENT**

ISSUE DATE  
**01/08/2011**

REPLACES  
**06/12/2005**

SUBJECT **IONIZING RADIATION PROTECTION  
HANDLING UNSEALED RADIOACTIVE SOURCES AND  
CONTAMINATION CONTROL**

APPROVAL  
**HALM**

PAGE NO.  
**10 OF 10**

RECOMMENDED:

\_\_\_\_\_  
**MANAGER,**  
ENVIRONMENTAL PROTECTION DEPARTMENT

DATE: \_\_\_\_\_

CONCURRED:

\_\_\_\_\_  
**MANAGER,**  
RESEARCH & DEVELOPMENT CENTER

DATE: \_\_\_\_\_

CONCURRED:

\_\_\_\_\_  
**EXECUTIVE DIRECTOR,**  
SAMSO

DATE: \_\_\_\_\_

\* CHANGE

\*\* ADDITION

NEW INSTRUCTION ☐

COMPLETE REVISION ☐