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UNITED
NATIONS

Economic and Social
Council

Distr.
RESTRICTED

Informal document No. 3 (2004)
23 March 2004

ENGLISH ONLY

ECONOMIC COMMISSION FOR EUROPE

Group of Experts on Monitoring of Radiologically Contaminated Scrap Metal
(First session, 5-7 April 2004
agenda item 4 a))

EXPERIENCES IN THE MONITORING OF RADIOLOGICALLY CONTAMINATED SCRAP METAL

Country experiences

Prepared by the UNECE secretariat

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Analysis of Responses to Questionnaire Circulated by the United Nations Economic Commission for Europe to Relevant Member States and Organizations on the Subject of

Responses Analyzed for Submittal Received through 17 March 2004

The following summarizes the responses provided to the Questionnaire received through 17 March 2003[1]. The analysis was prepared as follows:

1. The responses to each question asked are summarized graphically, and then any comments provided by the responders are provided. The summaries were prepared as follows
    - For questions with a "yes"/"no" response:
        i. the number responding "yes" or "no" is what is depicted graphically,
        ii. a lack of response (i.e. neither "yes" nor "no" marked), an "N/A" (i.e. not applicable) noted in the text, or a "no" response are all counted as a "no").
    - For questions requesting only a written response, the number of countries responding/not responding are depicted in text form only.
2. Some countries provided two separate responses (e.g., a regulator and a customs agency). The graphical summaries represent only one answer per country. Any discrepancies in responses between the two are noted in the comments provided.
3. All written responses provided by a country for each question have been listed by country under that question. In the interest of saving space, if there was no response, that country is not listed.
4. The presentation of the data is provided for the six general areas noted in the questionnaire, i.e. for:
    - **Regulatory Infrastructure** – 7 questions identified as Q RI 1 through Q RI 7 respectively,
    - **Monitoring** – 18 questions identified as Q M 1 through Q M 18 respectively,
    - **Dispositioning** – 6 questions identified as Q D 1 through Q D 6 respectively,
    - **Contractual** – 5 questions identified as Q C 1 through Q C 5 respectively,
    - **Reporting** – 6 questions identified as Q R 1 through Q R 6 respectively, and
    - **Experience**– 1 opportunity to describe experience identified as Q E 1.

[1] One additional response, from Vietnam, was received following 17 March 2004. The answers to questions from that response have not been included in the statistics provided here, but the textual comments have been included.

5. The consultant has provided observations as appropriate.
6. The following 39 countries responded to the Monitoring of Radiologically Contaminated Scrap Metal Questionnaire (all but Vietnam have been included in the statistics – see footnote 1):

Azerbaijan	Bangladesh	Belarus
Belgium	Bulgaria	Croatia
Czech Republic	Denmark	Dominican Republic
Estonia (Customs)	Finland	France
Germany	Hungary	Indonesia
Ireland	Italy	Latvia
Kazakhstan	Lithuania	Luxembourg
Malaysia	Netherlands	New Zealand
Norway	Philippines	Poland
Portugal	Romania	Russian Federation
Serbia and Montenegro	Slovenia	Sweden
Switzerland	Tajikistan	Turkey
United Kingdom	U.S.A.	Vietnam (see footnote 1)

7. General observations are:
    - For many of the "yes"/ "no" questions, positive ("yes") response rates were generally high (above 60 percent). A high positive response rate would indicate that the process is being developed in a sound fashion.
    - Exceptions were found to the high positive response rate in the following areas:
        - The second question on **Monitoring**, i.e. question Q M 2 "*Is there a regulatory requirement regarding monitoring imported and/or exported scrap metals for radioactivity?*", for which the positive response rate was only 42 percent. Thus, it would appear that further consideration may be needed with regard to the the regulatory regime requiring monitoring of scrap metals being imported and/or exported.
        - The latter four questions in **Monitoring** (Q M 15 through Q M 18) also had low positive response rates (ranging from 37 to 45 percent). These questions deal with issues at metal processing facilities.
        - In the **Dispositioning** area, question Q D 2 "*Is there a free of charge disposal facility or a return to manufacturer program?*" had a low response rate of only 29 percent.

- In the **Contractual** area, the latter four questions (Q D 2 through Q D 5) had low positive response rates ranging from as low as 21 percent to slightly more than 50 percent). The questions dealt with constraints on contractual arrangements with processors and producers of metal products that might strengthen controls on the production of contaminated metals.
- In the **Reporting** area, three questions (Q R 1, Q R 4 and Q R 6) had low response rates (55, 53 and 39 percent respectively). These questions dealt with reporting and investigating incidents at producing facilities, and the allowed (controlled or uncontrolled) accumulation of detected radioactive material.

- The last question in **Regulatory Infrastructure** (Q RI 7) may have led to responses which were not necessarily desired.

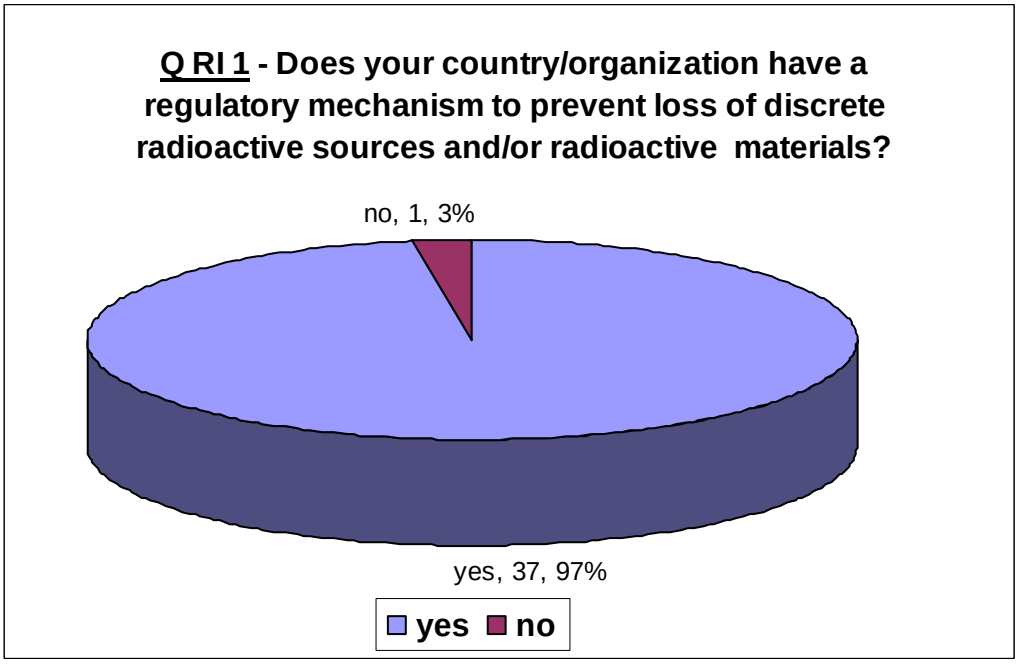
  The question was worded as follows: "*Are materials from nuclear facilities, with very low levels of radioactivity, released in accordance with a national regulation?*" Nuclear material is defined very specifically by the IAEA through its Safeguards and Securities programme. Nuclear material is limited to those few radionuclides that are capable of sustaining a chain reaction if properly processed (uranium, plutonium, irradiated nuclear fuel and high-level waste).

  Thus a nuclear facility was probably interpreted by many responders to the questionnaire as being a facility associated with the nuclear fuel cycle (the front-end production of fresh fuel materials, the nuclear reactors that burn the fuel, and those facilities that handle discharged fuel and their reprocessed products). As a result, many responders noted that they did not have nuclear facilities in their country.

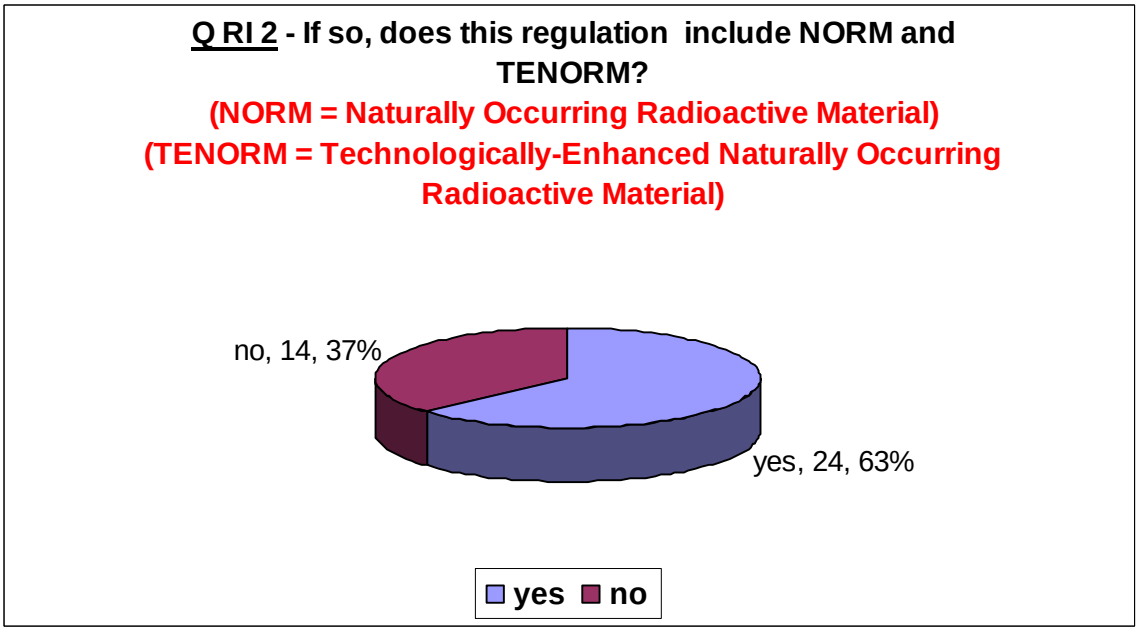
  However, there are many other radionuclides that can be produced and/or used in non-nuclear facilities in a country that can result in significant contamination of metals if inadvertently processed into them.

  Thus, the response to this question should be viewed with care.

8. The following provides the detailed review and analysis of the data received in the questionnaire.



Comments on Q RI 1	
Finland (Customs)	At the end of 2001 Customs issued instructions for the event of an alarming during radiation monitoring.



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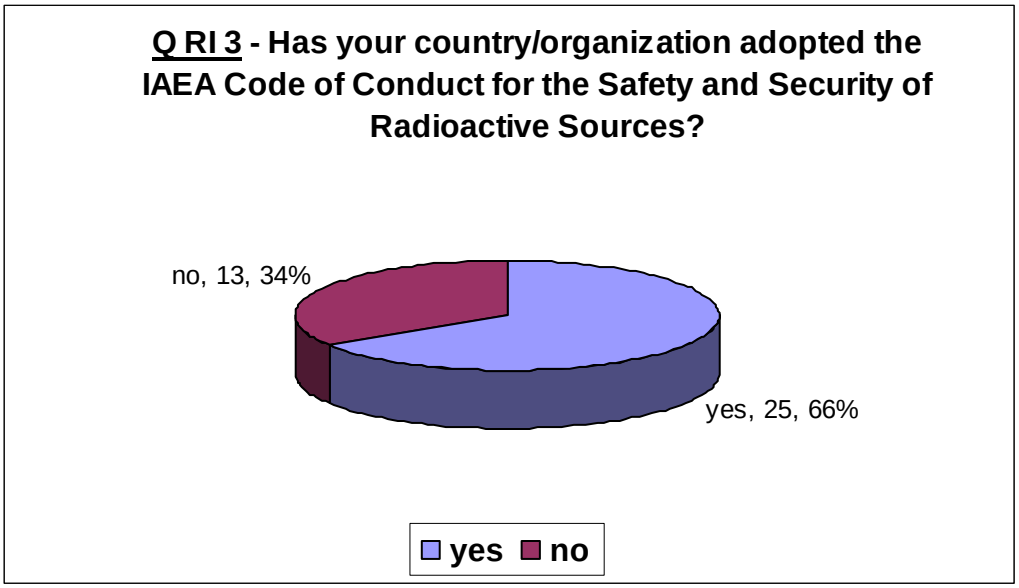
Comments on Q RI 2	
Belgium	cf. articles 4 et 9 de l'Arrêté royal du 20/7/2001
Latvia	Regulations on Radioactive Waste ("Requirements for Practices with Radioactive Waste and Materials Related Thereto") do not address NORM and TENORM explicitly; however, any material with certain specific activity is covered by these regulations.
Slovenia	Act on Ionising Radiation Protection and Nuclear Safety - 2003 "nuclear law", Article 45.



Comments on Q RI 3	
Belgium	La Belgique est membre de l'AIEA qui a adopté ce code de conduite lors de sa 47^{e} conférence générale.
Denmark	Denmark is working towards following the guidelines contained in the IAEA Rules for the safety and security of radioactive sources.
Finland (STUK)	In practice yes, but no official recognition
Hungary	It is planned.
Ireland	Ireland intends to adopt the Code of Conduct. The Regulatory Service of the RPII was the subject of a Peer Review Mission by the IAEA in Nov 2000 which concluded that the essential legal infrastructure is very well established.
Romania (CNCAN)	Implicitly.
Slovenia	Major part of Code of Conduct (published in 2001) is addressed in the 2003 "nuclear law". Some remaining issues will be covered by subsidiary regulation (under development).
U.S.A.	In principle.

NOTE: The UK responded with "mostly" to this question (which was counted as a "yes").

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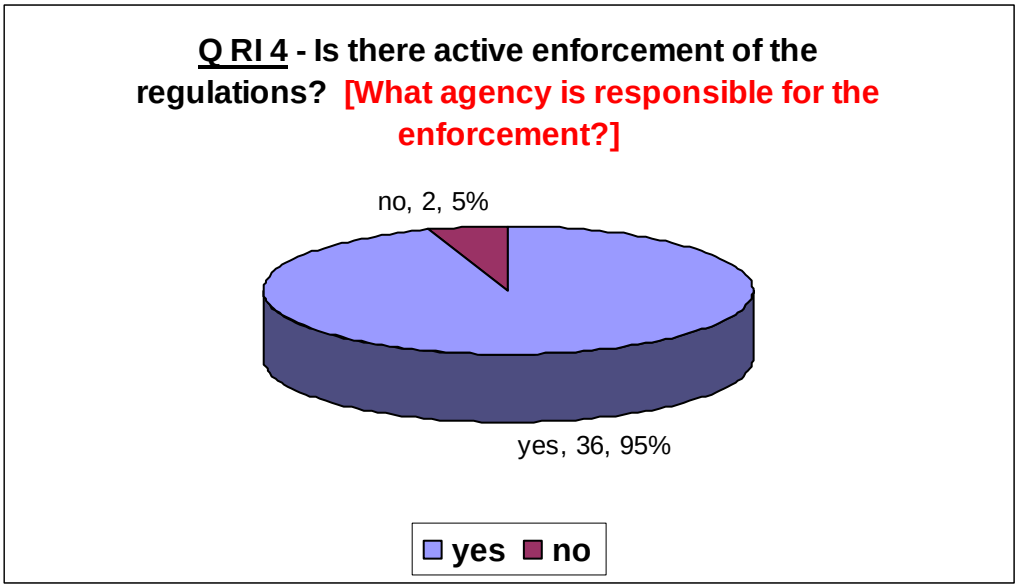

Comments on Q RI 4	
Azerbaijan	State Technical Inspection, State Sanitary Inspection.
Bangladesh	Bangladesh Atomic Energy Commission.
Belarus	Department for Supervision of Industrial and Nuclear Safety, Ministry of Health (sanitary bodies)
Belgium	L'Agence fédérale de contrôle nucléaire (AFCN) est responsable de l'application de l'Arrêté royal du 20/7/2001. Des dispositions à cet effet sont incluses dans l'Arrêté Royal du 20/7/2001 portant règlement général de la protection de la population, des travailleurs et de l'environnement contre le danger des rayonnements ionisants.
Bulgaria	Nuclear Regulatory Agency to the Council of Ministers.
Croatia	Ministry of Health and Welfare, Croatian Institute for Radiation Protection.
Czech Republic	SUJB
Denmark	National Institute of Radiation Hygiene (NIRH).
Dominican Republic	Comisión National de Asuntos Nucleares (CNAN) National Commission for Nuclear Affairs
Estonia (Customs)	Ministry of the Environment.
Estonia (ERPC)	Ministry of the Environment
Finland (Customs)	*Both STUK (Radiation and Nuclear Safety Authority) and Customs are responsible for enforcement by virtue of provisions on supervising the international traffic of radioactive materialsthat are included in the Radiation Act and the Radiation Decree, the Nuclear Energy Act and the Nuclear Energy Decree as well as in the Act on Transport of Dangerous Goods.*
Finland (STUK)	*STUK (Radiation and Nuclear Safety Authority)*
France	*La France a pour projet d'adopter ce Code de conduite (son adoption définitive est très récente)*
Germany	*Ministry for the Environment, Nature Conservation and Nuclear*

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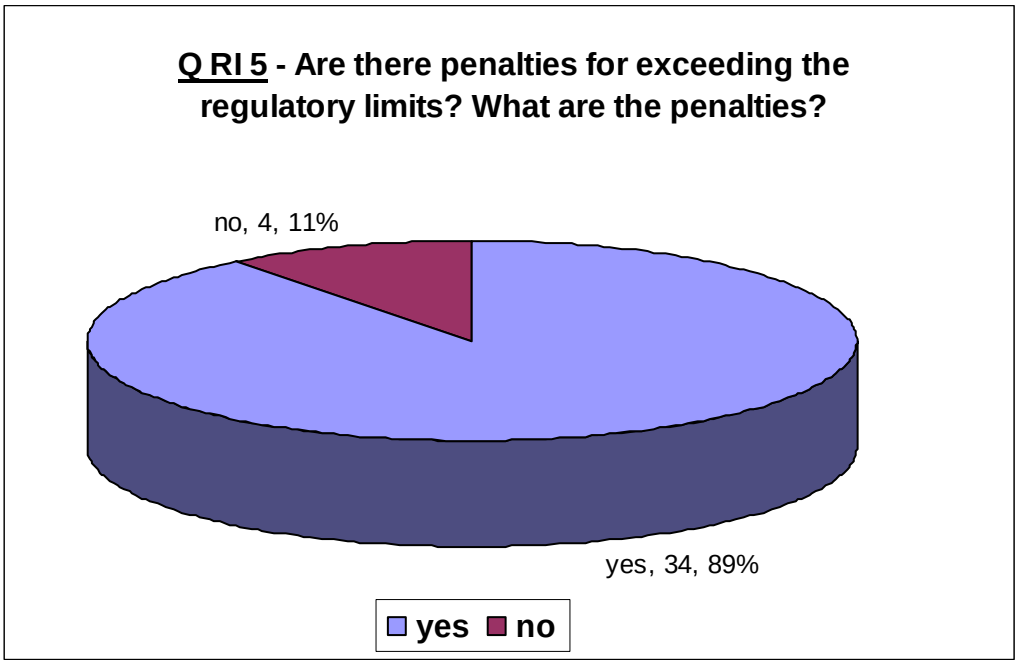
	Safety
Hungary	*State Public Health and Medical Officer's Service (SPHMOS) Hungarian Atomic Energy Authority (HAGA)*
Indonesia	*Interdepartmental institutions, such as police, attorney, judges and BAPETEN.*
Ireland	*Yes. The Radiological Protection Institute of Ireland is the enforcing authority. It carries out regular inspections to monitor compliance with regulations and licence conditions. To date it has undertaken 31 prosecutions for various breaches of Regulations and or licence conditions.*
Italy	*APAT (Italian Agency for the Environment Protection and Technical Services).*
Kazakhstan	*Надзор за соблюдением санитарных норм и правил осуществляют Санитарно-эпидемиологические органы Минздрава Республики Казахстан(РК). Комитет по Атомной энергетике(КАЭ) выполняет надзор за сохранностью источников в рамках надзорной деятельности по соблюдению условий действия лицензий по обращению с источниками ионизирующего излучения(ИИИ). Органы Министерства внутренних дел ведут надзор за соблюдением условий хранения ИИИ. Органы Агентства РК по Чрезвычайным Ситуациям (ЧС) за сохранностью ИИИ при аварийных ситуациях.*
Lithuania	*Yes, there is. The Radiation Protection Centre of the Lithuania and other State institutions according to their competence.*
Luxembourg	*L'organisme de contrôle est la Division de la Radioprotection de la Direction de la Santé, qui est placée sous la tutelle du Ministre de la Santé*
Malaysia	*Atomic Energy Licensing Board (Malaysia).*
Netherlands (IMHSPE)	*Inspectorate of the Ministry of Housing, Spatial Planning and the Environment.*
New Zealand	*National Radiation Laboratory/Ministry of Health.*
Norway	*Norwegian Radiation Protection Authority.*
Philippines	*Philippine Nuclear Research Institute through its Nuclear Regulations, Licensing and Safeguards Division*
Poland	*National Atomic Energy Agency (NAEA).*
Romania (Customs)	*National Commission for Nuclear Activities Control (CNCAN) / Ministry of Waters, Forest and Environmental Protection.*
Romania (CNCAN)	*National Commission for Nuclear Activities Control (CNCAN).*
Russian Federation (Customs)	*Ministry of Health, COSAMNODZOR RF*
Russian Federation (CRIISI)	*Ministry of Health; GOSATOMNADZOR RF*
Serbia and Montenegro	Ministry for Protection of Natural Resources and Environment.
Slovenia	Slovenian Nuclear Safety Administration (SNSA) and Slovenian Radiation Protection Administration (SRPA), based on the nature of an incident.
Sweden	Swedish Radiation Protection Authority (SSI).
Switzerland	Suva (address see above), regulatory authority. [Suva, Swiss National Accident Insurance Fund,

	Physics Department, CH-6002 Lucerne.]
Tajikistan	Nuclear and Radiation Safety Agency of the Academy of Sciences of the Republic of Tajikistan.
Turkey	Turkish Atomic Energy Authority (TAEK).
United Kingdom	UK has 4 relevant agencies Environment Agency (England & Wales); Scottish Environment Protection Agency (Scotland); Environment & Heritage Service (N. Ireland); Health and Safety Executive – for personnel and public safety issues.
U.S.A.	U.S. Nuclear Regulatory Commission, U.S. Department of Transportation, U.S. Customs



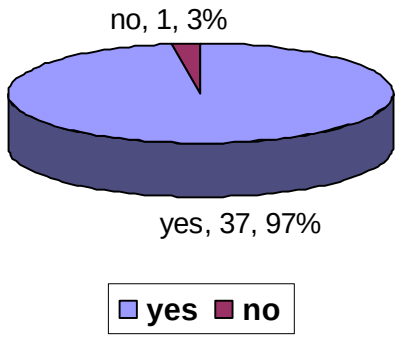
Comments on Q RI 5	
Azerbaijan	Administrative, penal.
Bangladesh	Minimum 3 years RI with fine.
Belarus	Penalties according to the Code for Administrative Infringements
Belgium	Graduelles selon les infractions.
Bulgaria	Act On The Safe Use Of Nuclear Energy (ASUNE) (Promulgated in the State Gazette No. 63 of June 28, 2002); Chapter XI "Adminstrative Penalty Provisions"
Croatia	There are penalties in the range 2.500 – 1.000.000 kunas (cca 300 – 150.000 €), depending on the violation made.
Czech Republic	up to 1 million CZK (approx. 30 000 EUR)
Dominican Republic	Ranging from penalties to confiscation of the sources
Estonia (Customs)	According to Penal Code: § 411. Unlawful radiation practice (1) Engagement in radiation practices without a corresponding licence

	is punishable by a pecuniary punishment or up to one year of imprisonment. (2) The same act, if committed by a legal person, is punishable by a pecuniary punishment. § 412. Violation of requirements for handling radiation sources (1) Violation of the requirements for storage, use, transportation or other handling of a radiation source, if such violation causes a danger to the life or health of a large number of people, is punishable by a pecuniary punishment or up to 5 years' imprisonment. (2) The same act, if committed by a legal person, is punishable by a pecuniary punishment. Radiation Act: 32^{1}. Violation of requirements determined by radiation practice licence (1) Violation of the requirements determined by a radiation practice licence is punishable by a fine of up to 100 fine units. (2) The same act, if committed by a legal person, is punishable by a fine of up to 30 000 kroons.
Estonia (ERPC)	According to Penal Code: § 411. Unlawful radiation practice (1) Engagement in radiation practices without a corresponding licence is punishable by a pecuniary punishment or up to one year of imprisonment. (2) The same act, if committed by a legal person, is punishable by a pecuniary punishment. § 412. Violation of requirements for handling radiation sources (1) Violation of the requirements for storage, use, transportation or other handling of a radiation source, if such violation causes a danger to the life or health of a large number of people, is punishable by a pecuniary punishment or up to 5 years' imprisonment. (2) The same act, if committed by a legal person, is punishable by a pecuniary punishment. Radiation Act: 32^{1}. Violation of requirements determined by radiation practice licence (1) Violation of the requirements determined by a radiation practice licence is punishable by a fine of up to 100 fine units. (2) The same act, if committed by a legal person, is punishable by a fine of up to 30 000 kroons.
Finland (STUK)	No automatic penalties. However, the responsible party can be sentenced by court decision to a fine or imprisonment for violation of the Radiation Act.
France	Pénalités pénales (non respect d'autorisation de détention de sources)
Germany	Not fulfillment of duties entails a penalty.
Hungary	(1) Imposition of a fine; (2) Suspension or withdrawal of licence; (3) Court trial.
Indonesia	Fines sentences to jail & administrative sanctions which include revocation and suspension of license and written warnings.
Ireland	Yes. Inspectors have the power to issue directions, enforcement

	notices and prohibitions. Items can also be seized if appropriate. If a prosecution is undertaken and a conviction is secured then fines of up to €1300 per charge may be imposed.
Italy	The amount of penalties is regulated by articles 136, 137, 138, 139, 140, 141, 142 of the Legislative Decree n. 230 of March the 17th , 1995.
Kazakhstan	Согласно статей 315, 316, 477 Кодекса РК «Об административных правонарушения» физические и юридические лица за нарушения нормативных ограничений могут подвергаться штрафу от 10 до 250 месячных расчетных показателей(МРП). МРП в 2004 году составляет 919 тенге.
Latvia	Administrative penalties, including suspension and withdrawing of license for practices with radiation sources
Lithuania	The penalties for exceeding the regulatory limits are given in the Code on Administrative Law Violations. The fines for breach of requirements of radiation protection legal acts are imposed, if : - requirements of hygiene standards and other regulation are not followed or if they are violated; - legitimate requirements of inspectors of the Radiation Protection Centre are not followed or exercise of the radiation protection state supervision and control is inhibited; - the environment is polluted with radioactive materials, if the radioactive material is transported into or out Lithuania without the proper permit; - intentional brake of lead (seal) was performed. The magnitude of fine might vary from 100 to 4000 litas.
Luxembourg	Conformément à la loi du 25 mars 1963 concernant la protection de la population contre les dangers résultant des radiations ionisantes, les infractions sont punies d'un emprisonnement de huit jours à un an et d'une amende ou d'une des peines seulement.
Malaysia	US 26,000 or 10 years jailed or both.
Netherlands (IMHSPE)	Fines, ban on activities, closing firms, obligations, warnings.
New Zealand	Maximum fine of NZ$ 10,000 and NZ$ 500 per day for continuing offence.
Norway	Penalties are determined in court and the radiation protection act set no limit. Maximum imprisonment for violation of radiation protection act is 2 years.
Philippines	Modification, suspension or revocation of license for authorized users. However, generally scrap metal dealers, importers/exporters are not subject to regulatory control of PNRI .
Poland	Withdrawing of license. Financial penalty – not exceeding the five fold average monthly pay in national economy sector.
Romania (CNCAN)	Fines for infringements.
Russian Federation (Customs)	Administrative and criminal prosecution.
Russian Federation (CRIISI)	Up to criminal penalty.
Serbia and	Economic violation - financial fine.

Montenegro	
Slovenia	A financial penalty between 300,000 and 30,000,000 Slovenian Tolars may be imposed on a legal person (app. 1,260 to 126,000 €).
Sweden	Given in the Swedish Radiation Protection Act !988:220 §§ 35-42 (in English at http://www.ssi.se/english/english_activities.html).
Switzerland	Imprisonment or a fine up to 20000 Swiss francs.
Turkey	If illicit trafficking is intended, there are penalties related to this crime, but radioactive sources in scrap metals are not considered as this type of crime. Necessary warnings are given to the relevant companies and other parts involved in these incidents.
United Kingdom	On indictment – maximum of 5 years imprisonment, £20 000 fine (US$28 000); less in a lower court.
U.S.A.	49 Code of Federal Regulations (CFR) Part 110 (Penalties) Transportation of Hazardous Materials allows for both civil and criminal penalties (fines and imprisonment for illegally shipping radioactive materials). 10 CFR Part 30 and 40 Nuclear Regulatory Commission penalties.

Q RI 6 -Are there any levels below which material is exempted from regulatory control? If so, what are these levels?



Comments on Q RI 6	
Azerbaijan	Levels according to the Main Standards and Regulations on Radiation Safety.
Bangladesh	We adopted the IAEA BSS-115, 1996.
Belarus	Less than 0.3 kBk/kg
Belgium	Des niveaux d'exemption sont définis dans l'annexe I.A de l'Arrêté royal du 20/7/2001.

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Bulgaria	ASUNE, Section VI "Practices with other sources of ionizing radiation"; Regulation on Basic Norms for Radiation Protection 2000 (RBNRP),Chapter II.
Croatia	Yes, there are. The levels are set up according to European regulations , IAEA, BSS (completely harmonized).
Czech Republic	Nuclide depended – based on ICRP recommendation.
Denmark	Only for naturally occurring radionuclides.
Dominican Republic	Effective dose to public ≤ 10 μsv/year or effective collective dose ≤ 1 μsv/person
Estonia (Customs)	The limits for total quantities of radioactive substances and the limits for specific activities of such substances are established by a regulation of the Government of the Republic; in the case of values below such limits, no radiation practice licence is required. The levels are established in accordance with the Basic Safety Standards. (Regulation of the Government: Limits for the Total Amounts of Radioactive Substances and Limits for the Specific Activity thereof Exempted from the Requirement of Licensing for Activity Involving Radiation; RT I 1998, 11, 36)
Estonia (ERPC)	The limits for total quantities of radioactive substances and the limits for specific activities of such substances are established by a regulation of the Government of the Republic; in the case of values below such limits, no radiation practice licence is required. The levels are established in accordance with the Basic Safety Standards. (Regulation of the Government: Limits for the Total Amounts of Radioactive Substances and Limits for the Specific Activity thereof Exempted from the Requirement of Licensing for Activity Involving Radiation; RT I 1998, 11, 36)
Finland (Customs)	Exemption limits as given in the EU BSS directive.
Finland (STUK)	Exemption limits as given in the EU BSS directive.
France	Seuils d'exemption de la directive Euratom 96/29 (uniquement pour des quantités inférieures à 1 tonne) ; traitement au cas par cas au delà.
Germany	The exemption levels of the European directive 96/29/EURATOM, e.g. the clearance levels of the German Radiation Protection Ordinance.
Hungary	Defined in THG 23/1997 (VII.18.) NM Decree of Minister for Public Welfare in accordance with IAEA Safety Series N° 115.1996.Edition.
Indonesia	Exemption and clearance level.
Ireland	Yes, these are radionuclide specific and are cited in the Radiological Protection Act, 1991 (Ionising Radiation) Order, 2000, S.I. No. 125 of 2000. The exemption values are those specified in the European Commission Basic Safety Standards 96/29 EURATOM.
Italy	We use limit dose levels (10 micro Sv/Y, 1 Man Sv/Y).
Kazakhstan	Не подлежат нормативному контролю материалы (вещества), сырье и изделия при наличии в них удельной активности радионуклидов менее 0,3 кБк/кг.
Latvia	The same as in IAEA Basic Safety standard and EU Directive 29/96
Lithuania	Yes. The exemption levels (radionuclide quantities and activity concentration values, below which the material is exempted froé regulatory control) are established by the Lithuanian Hygiene Standard HN 73:2001). They are in accordance with the European

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	Council Directive 96/29 Euratom of 13 May 1996 Basic safety standards for the protection of the health of workers and the general publics against the dangers arising from ionizing radiation. The exemption criteria are the following: - practice and radioactive substances within practice may be exempted from the requirements of protection where quantities and activity concentration values, as appropriate, of the relevant radionuclides do not exceed exemption values; - in individual circumstances the Radiation Protection Centre may decide that a practise may be exempted without further consideration, even if a quantity and activity concentration of the relevant radionuclides exceed the exemption values, provided that the following criteria are met: • effective dose to be incurred by any member of public due to exempted practice does not exceed 10μSv/year. • collective effective dose does not exceed 1 man Sv, • assessment of optimization of protection shows that exemption is the optimum option. Exemption shall apply for practices involving the following sources: • equipment containing radioactive substances exceeding amounts or concentrations, however: • it is of a type approved by the regulatory authority; • it meets requirements for the sealed source; • equivalent dose rate under normal operating conditions does not exceed 1μSv/h, at a distance of 0,1 m from any surface of the equipment, • necessary conditions for disposal have been specified by regulatory authority.
Luxembourg	La législation prévoit des niveaux d'exclusion. Ces niveaux sont fixés pour chaque radionucléide. Le niveau d'exclusion et fixé à 1/100 des niveaux d'exemption tels que définis par la directive 90/641/Euratom du Conseil du 13 mai 1996 fixant les normes de base relatives à la protection sanitaire de la population et des travailleurs contre les dangers résultant des rayonnements ionisants, sous condition cependant que la masse totale des matériaux ne dépasse pas les 1000 kilogrammes.
Malaysia	Check source.
Netherlands (IMHSPE)	Different levels per nuclide.
New Zealand	Reference should be made to the New Zealand Radiation Protection ADR 1965, Radiation Protection Regulations 1982 and gazetted notices.
Norway	NORM (scale) exemption levels: 10Bq/g for Ra-226, Ra-228 and Pb-210.
Philippines	70 kBq/kg
Poland	Exemption levels specified in BSS of the IAEA.

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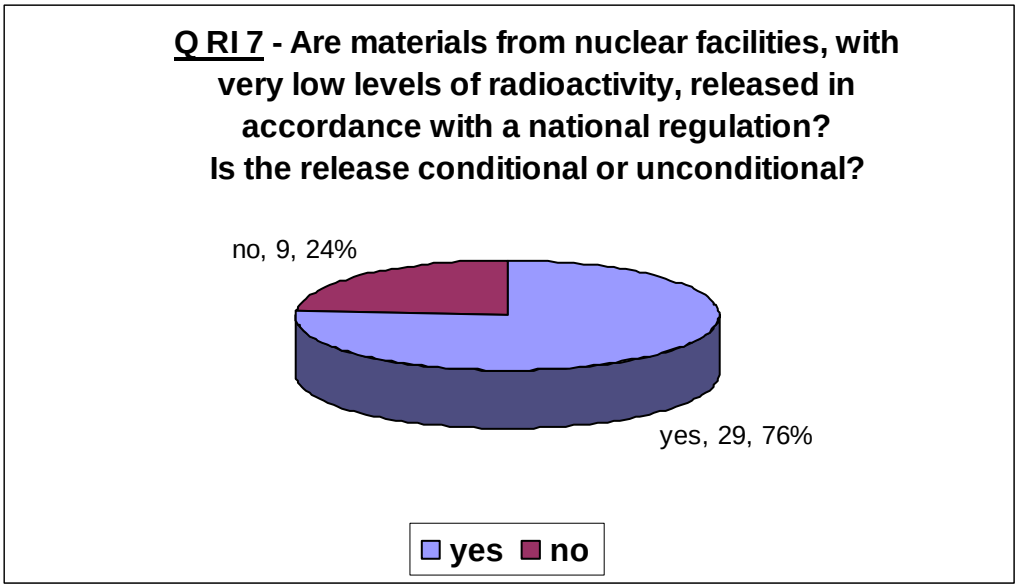
Portugal	The exemption levels are regulated by Regulatory Decree nº 9/90 of Ministry for Health
Romania (CNCAN)	- authorization levels according IAEA SS-115. - exclusion levels: generally 1-2 times lower than authorization levels.
Romania (Customs)	None
Russian Federation (Customs)	These levels correspond IAEA levels.
Russian Federation (CRIISI)	These levels correspond to the levels prescribed by IAEA.
Serbia and Montenegro	BSS (Safety series 115), 1 μSv/h.
Slovenia	Regulation "Z-4" (Off.Gazz. 40/86) determines four groups of radioisotopes, based on their radiotoxicity. Below these levels (specific activity and total activity), items are concerned as non-radioactive (e.g. for Am-241: A_{sp}= 74 Bq/g, A_{tot}= 3,700 Bq/g).
Sweden	In accordance with The Swedish Radiation Protection Ordinance 1988:293 (based on the EG-directive 96/29/EURATOM, BSS).
Switzerland	Exemption limits according to "Swiss Legislation on Radiological Protection".
Tajikistan	At present, Russian documents and old (Soviet) regulations are being used.
Turkey	BSS115 (Basic Safety Standards 115) exemption levels are adapted to our national regulations.
United Kingdom	Varies according to radionuclide – down to 0.37 Bq per gram.
U.S.A.	For transportation purposes, activity must be <2NCi/gm, check sources are usually exempt. 10 CFR 30 Source Materials, 10 CFR 40 byproduct materials, 49 CFR 173-179 Transportation.



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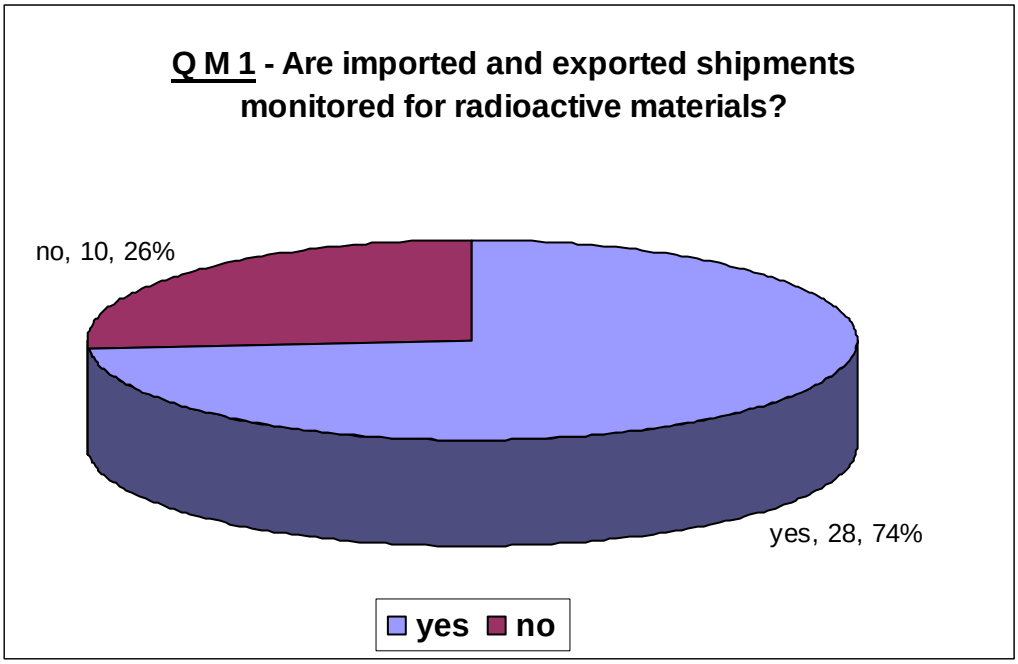
Comments on Q RI 7	
Azerbaijan	As there are no nuclear facilities in the country, national legislation does not address this issue.
Bangladesh	Conditional.
Belarus	Unconditional
Belgium	Sans conditions. Des niveaux de libération sont définis dans l'annexe I.B de l'Arrêté royal de 20/7/2001.
Croatia	There are no nuclear facilities in Croatia.
Czech Republic	Unconditional
Dominican Republic	Conditional
Estonia (Customs)	No nuclear facilities in operation.
Estonia (ERPC)	No nuclear facilities in operation at present.
Finland (Customs)	Either conditional/restricted or unconditional/unrestricted (explained in STUK's guide YVL 8.2).
Finland (STUK)	Either conditional/restricted or unconditional/unrestricted (explained in STUK's guide YVL 8.2).
France	Par principe, pas de seuils de libération inconditionnelle en France. Possibilité éventuelle d'autorisation ponctuelle de libération conditionnelle (pas utilisée actuellement)
Germany	Both: conditional (waste for disposal in a landfill, for bunring in a waste incineration plant, metals for recycling) and unconditional on the basis of fixed values
Hungary	Conditional (corresponding conditions are defined in the operating licence).
Indonesia	Conditonal according to SSS 115.
Ireland	Ireland has no nuclear facilities. However, disposal of unsealed radionuclides from hospitals and laboratories is undertaken in accordance with the licence conditions
Italy	The release is conditioned by the authorization of the Regulatory Body.
Latvia	Both options are used depending of future practices with these materials as declared.
Kazakhstan	В соответствии с Законом РК «Об использовании атомной энергии» радиоактивные вещества из ядерных установок с уровнем активности менее «уровня изъятия», регламентируемого нормами радиационной безопасности освобождаются из под контроля. В настоящий момент это условие окончательное.
Lithuania	Yes. The release limits for solid radioactive waste are established by the Lithuanian Environmental Normative Document LAND 34-2000 "Clearance Levels of Radionuclides; Conditions for Reuse of Materials and Disposal of Waste". They are unconditional ones. However, on the initiative of the licensee, the conditional clearance levels, which exceed the conditional one, may be set. These levels are set for the defined means of reuse or disposal of substance and waste, and they can be applied only after the approval by the Ministry of

	Environment with the agreement of the Radiation Protection Centre.
Luxembourg	La législation fixe des niveaux de libération pour les matériaux issus d'une pratique autorisée ou déclarée. Cette libération est inconditionnelle.
Malaysia	Not Applicable
Netherlands (IMHSPE)	Conditional.
New Zealand	There are no nuclear facilities as such i.e. power stations, research reactors in New Zealand.
Norway	Conditional, requires a discharge permission.
Philippines	Clearance levels are established both for unrestricted and restricted use
Poland	Conditional.
Portugal	There are limits for liquid discharges for medical facilities according Decree Law nº 180/2002 of Ministry for Health
Romania (CNCAN)	The clearance levels are established by CNCAN case by case according to the art. 11 of Fundamentals norms for radiological safety. CNCAN shall soon issue clearance levels regulations. The release is both conditional and unconditional. Clearance levels are between the authorization levels and exclusion levels.
Russian Federation (CRIISI)	The releases are both conditional and unconditional.
Serbia and Montenegro	We do not have nuclear facilities. It is not done.
Slovenia	The SNSA issued an order to the nuclear power plant, where prescribed the conditions for the clearance in accordance with the national regulation.
Sweden	Both conditional and unconditional (to dump sites).
Switzerland	Conditional.
Tajikistan	According to the regulations in force, radioactive materials with very low levels of radioactivity are exempted from control
United Kingdom	Unconditional
U.S.A.	Release can be either and is determined on a case-by-case basis, requiring US Nuclear Regulatory Commission approval (10 CFR 20 Section 2002)



Comments on Q M 1	
Finland (Customs)	In the first place, imported shipments are monitored. In the future, Customs officers will be able to monitor partially also export shipments using their pocket-size portable radiometers at the place of export clearance. Both entering and departing trains will be controlled with fixed radiation monitoring equipment at border crossings for train traffic.
Finland (STUK)	In facilities both imported and exported metal, on borders only imported shipments by the authorities.
Ireland	Not routinely. However if it is believed that a ship or aircraft is carrying radioactive material, without the appropriate authorization, then monitoring may be carried out
Luxembourg	Les substances ou matériaux radioactives importées ou exportées et qui dépassent le seuil d'exclusion sont soumis à une autorisation ou à une déclaration. Il incombe au détenteur ou au destinataire de se conformer aux prescriptions réglementaire régissant la matière. Le transporteur des substances ou matériaux radioactifs doit se conformer aux prescriptions internationales régissant le transport (RID, ADR, IATA.). Un contrôle physique systématique de toutes les cargaisons ne s'impose pas. Cependant, des contrôles sporadiques sont effectués par les douanes et par la Division de la Radioprotection.
Philippines	Upon request.
Romania (CNCAN)	Partially.
Slovenia	Ironworks/private sector: Yes, partly Border control (customs/police): Yes, partly – using pocket detectors – "pagers".

United Kingdom	In a few cases
U.S.A.	Currently 3 pilot studies for imported scrap, none at the vessel for exported scrap

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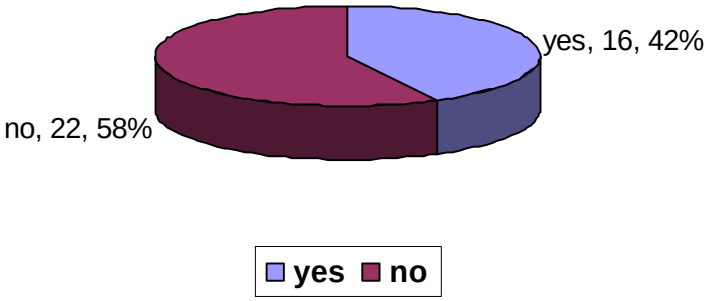
Q M 2 - Is there a regulatory requirement regarding monitoring imported and/or exported scrap metals for radioactivity? [If so, please explain.]



Comments on Q M 2	
Belarus	Radiation above the natural background, contamination with α- and β-particles. Basic sanitary regulations on radiation safety (OSP-2002), sanitary norms and regulations 2.6.1.8-2-2003, hygienic requirements on radiation safety when processing and selling metal scrap
Bulgaria	118 Council of Ministers Decree (Promulgated in the State Gazette No. 53 of July 01, 1994).
Croatia	In the case of suspicion survey can be conducted. No monitoring is performed.
Estonia (Customs)	There is the "Law of Waste".
Estonia (ERPC)	No special regulatory requirements regarding scrap metals radioactivity monitoring
Finland (Customs)	Certificates are not widely used. However, Russian importers do have a certificate concerning the radiation level of product.
Finland (STUK)	No requirements, implemented by voluntary basis by all major facilities.
Germany	Customs authorities have been instructed to measure the metal scrap imports with regard to radioactivity (Instruction of the Federal Ministry of Finance (Erlass des Bundesministeriums der Finanzen) of 22.11.1994, III B 2 - SV 8100 - 55/94).
Hungary	We do not have explicit regulatory requirement.

MONITORING

Indonesia	All scrap metal shall be licensed and subject to inspection.
Ireland	No. Not yet. However, Council Directive 2003/122/Euratom of 22 December 2003 on the control of high-activity sealed sources and orphan sources will require Ireland to introduce regulations in this area. Article 9 of this Directive stipulates that Member State shall encourage the establishment of systems aimed at detecting orphan sources in places such as large metal scrap yards and major scrap metal recycling installations. The RPII is currently developing plans for monitoring for the presence of orphan sources.
Italy	It is required by the metal industries by article 157 of the Legislative Decree n. 230 of March the 17th , 1995.
Kazakhstan	В РК действует «Методика дозиметрического контроля радиоактивного загрязнения металлолома». Данная методика предусматривает порядок и нормативные требования по определению загрязнения металлолома. Она реализуется грузоотправителями(грузополучателями) при входном (выходном) контроле металлолома и контролируется надзорными санитарно-эпидемиологическими органами на транспорте, находящимися под методическим руководством Минздрава РК. В настоящее время на стадии утверждения «Правила проведения радиационного контроля таможенными органами республики на государственной границе Республики Казахстан». Одной из задач радиационного контроля таможенных служб будет обнаружение бесхозных локальных источников в металлоломе и контроль его радиационного загрязнения с помощью стационарных систем наблюдения.
Latvia	Regulations for scrap metal dealers, which introduce requirements for monitoring at scrap metal yards by stationary and/or portable monitors – the type of control depends from amount of scrap processed annually. Addition to these regulations also Regulations on radiometric control of cargo on state borders, which require monitoring of all goods.
Lithuania	Yes. The provisions that the scrap metal shall be at the metal yards checked for radioactive contamination is approved by the Order N° 49 of the Minister of Economy of the Republic of Lithuania “On the Order of Procurement, Accounting and Storage of the Base Metal Scrap and Waste” (2002).
Luxembourg	Actuellement, il n’existe pas de condition réglementaire pour un contrôle des ferrailles importées ou exportées. Les industries qui procèdent à un tel contrôle le font sur base volontaire. Cependant, dans le cadre de la directive 2003/122 Euratom du 22.12.2003 relative au contrôle des sources radioactives scellées de haute activité et de sources orphelines, il est prévu de créer une telle base juridique.
Malaysia	Detector was installed to monitor incoming scrap for radioactivity.
Netherlands (Customs)	Yes, random checks based on risk-analyses.
Netherlands (IMHSPE)	Since 2003 firms who trade in scrap above a certain level are obliged to use equipment to measure radioactive substances in scrap. The firms need to register the measurements and have to arrange financial securities and have a radiation specialist working for the firm.

	Furthermore, in case of alarms they need to report this to the Inspectorate.
New Zealand	Not as such/import export prohibition apply 100 %.
Philippines	Monitoring is only requested to meet the regulatory requirement of the importing countries.
Poland	Decision is made by local authorities.
Portugal	ITN/DPRSN can monitor scrap metal on request.
Romania (Customs)	Law No. 141/1999 regarding the Customs Code of Romania, Art. 176: Art. 176: Crossing the border of arms, ammunitions, explosives or radioactive materials, of narcotic drugs and psychotropic substances, of precursors and essential chemical substances, of toxic products and substances is considered as qualified smuggling and is punished with imprisonment from 3 to 12 years as well as forbidding some rights, if criminal law does not foresee a higher punishment." Law No. 111/1996 regarding safe nuclear activity.
Russian Federation (Customs)	There are medical standards.
Russian Federation (CRIISI)	There are medical standards which contain regulatory requirements concerning scrap metal and control.
Serbia and Montenegro	Law on Protection from Ionizing Radiation ("Official Gazette of FRY", no. 46/96). According to the regulations, the levels of radioactive contamination of imported goods cannot be bigger than the proscribed level of radioactive contamination of corresponding domestic products.
Slovenia	The customs is fully responsible for the import and export control.
Switzerland	Individual license for the scrap metal processing facility exporting scrap metal to Italy.
Tajikistan	Control is carried out at Customs posts.
Turkey	Foreign Trade Undersecretary has some regulations concerning metal scrap import. For example, the company that imports scrap metal should have proper documentation stating the scrap metal be radioactive free.

Q M 3 – At what point in the distribution chain is the scrap metal monitored?

- **33 countries (87 percent of those responding) provided answers to this question.**

Comments on Q M 3	
Azerbaijan	Upon loading, at metal scrap yards.
Bangladesh	Not applicable.

MONITORING

Belarus	Upon loading/unloading, at Customs border crossings
Belgium	Soit chez les grandes et moyennes entreprises de ferraille, soit en bout de chaîne (fonderie, usine métallurgique).
Bulgaria	Upon export, import and at the smelting facilities.
Croatia	It is not monitored on regular basis.
Czech Republic	At the entrance to metal processing facilities and at some border crossings.
Dominican Republic	At the production plants and at measuring points
Estonia (Customs)	Scrap metal is monitored at road and railway gates of the scrap metal companies. Imported scrap metal from Russia is monitored at eastern border.
Estonia (ERPC)	The scrap metal is monitored when it reaches the territory of our company.
Finland (Customs)	The limit set by companies is significantly lower than the limit set by authorities for importation. An accepted level of radioactivity is in the interest of the metal processing company.
Finland (STUK)	At border crossings (by Customs authorities), on scrap yards and smelting facilities (by the operators).
Germany	At transit points, harbours.
Hungary	Truck terminals, rail border crossing stations.
Ireland	Scrap metal is currently not routinely monitored for radioactivity levels in Ireland since the closure of Irish Ispat Ltd (a steel making plant which melted scrap steel)) in Cork in June 2001. The majority of the metal that is collected by scrap yards is now sent abroad for recycling. A portal radiation detection system was used at Irish Ispat Ltd while the company was in operation.
Italy	At metal scrap dealer and at metal processing facilities.
Kazakhstan	При отправке(получении) металлолома выходной(входной) контроль выполняется грузоотправителями(грузополучателями) В обязанности контрольных санитарно-эпидемиологических органов Минздрава входит надзор за результатами выходного(входного) контроля грузоотправителей(грузополучателей) с выдачей соответствующего заключения (справки).
Latvia	Entrance/exit of scrap metal yard and during the segregation of scrap.
Lithuania	At state borders control points, Customs control points (automatic dose rate measurement equipment), in metal scrap yards, scrap reprocessing plants.
Luxembourg	Pour la ferraille importée, le contrôle est effectué par le destinataire luxembourgeois lors de la réception de la ferraille. Le plus souvent, la ferraille importée par le Luxembourg a déjà passé un contrôle par le fournisseur étranger. Il nous est inconnu à quel stade de la chaîne de distribution ce fournisseur étranger contrôle sa ferraille, mais il nous semble que ce contrôle se fasse souvent après le chargement de la ferraille dans les wagons ou camions. Il n'existe pas encore un contrôle systématique de la ferraille produite dans le pays. Les quelques petits parcs à ferraille d'origine luxembourgeoise ne sont pas équipés pour effectuer un contrôle systématique. Cependant, ces parcs sont soit directement liés à l'industrie sidérurgique qui procède à des contrôles systématiques, soit ils sont liés à de grands ferrailleurs

	étrangers qui eux aussi procèdent souvent à des contrôles systématiques.
Malaysia	Main entrance gate.
Netherlands (Customs)	At the moment that the customs accept a customs-declaration for import or export and during patrol.
Netherlands (IMHSPE)	At the entry of the gate of the firms, gate detectors are placed. Furthermore hand-held monitors are used.
Norway	Monitoring at harbors where scrap metal is loaded. Monitoring at the Norwegian-Russian border (Storskog).
Philippines	Only upon request at entry/exit points of imported/exported scrap metal shipments.
Poland	Import – at ports of entry and border crossing points. Export – control points at selected smelters.
Portugal	The scrap metal is monitored on its arrival to the smelting facilities.
Romania (CNCAN)	- at exporter loading point. - at border crossing point.
Russian Federation (Customs)	In Customs control zones.
Russian Federation (CRIISI)	Metal scrap is subjected to monitoring at metallurgical works, scrap suppliers as well as at Customs terminals.
Serbia and Montenegro	During import, export and transit on border crossings.
Slovenia	The scrap metal is monitored at the entry to the iron-works. Semi-products and final product are checked, using hand-held devices. Some scrap dealers (scrap-yards) use hand-held devices.
Sweden	At major scrap yards and smelting facilities on there own initiative (not regulated).
Switzerland	At entrance of scrap yard (not mandatory) and before exporting to Italy (mandatory).
Tajikistan	Monitoring is performed when Customs inspections are made and Customs documents are cleared.
Turkey	Entering at the border points, entering to the metal melting process. Scrap metal is monitored at border crossing points while entering the country and every company that imports scrap metal should monitor every consignment while entering its sea-port or facility.
United Kingdom	Usually only at the top of the supply chain – the largest scrap dealers or the metal melters.
U.S.A.	Many metal processing facilities have radiation monitors at their entrances. At the three ports in the pilot program, the scrap is monitored as it is off-loaded by the grapple.

Q M 4 – What are the specifications of the radiation detectors used?

- **34 countries (89 percent of those responding) provided answers to this question.**

Comments on Q M 4	
Azerbaijan	Scintillation detectors and Geiger-Muller counters are used.
Bangladesh	Not applicable.
Belarus	Specifications correspond to the IAAE requirements
Belgium	Le choix du détecteur est laissé à l'appréciation de l'exploitant
Bulgaria	Generally the sensitivity is set up to about 8% above local background, or similar low values.
Croatia	No detector installed
Czech Republic	Border crossings: portal monitors and/or hand-held instr., rad. pagers. Metal processing facilities: portal monitors and/or hand-held instr.
Dominican Republic	None
Estonia (Customs)	Scrap metal companies have stationary monitors with plastic detectors (specifications are not known for customs). Stationary monitors at Estonian-Russian border have mostly 4 plastic detectors 4,75 cubic litres each. Estonian Customs has a lot of belt-held radiation pagers.
Estonia (ERPC)	We use manufacturer`s radiation detectors that are located on the railway and at car entrance gates. We use Bicron 6000 ASM III and Exploranium GR 526.
Finland (Customs)	According to the instructions issued by Customs, the threshold limit is 0.7 microSV for imports.
Finland (STUK)	No official requirements for specifications.
Germany	Mostly portable detectors measuring gamma-rays (local dose rate)
Hungary	Large volume scintillation detectors in portal monitors.
Ireland	Not applicable at present.
Italy	The specifications aren't standardized, therefore they are not available.
Kazakhstan	Достоверное определение мощности эквивалентной дозы (МЭД) над естественным фоном не более 0,05 мкЗв/час. Достоверное определение поверхностного потока бета-излучения, превышающего 0,4 частицы/(см^{2}х сек), достоверное определение поверхностного потока альфа-излучения, превышающего 0,04 частицы/(см^{2}х сек)
Latvia	Stationary if amount of scrap exceeds 100 000 tons and portable or only portable monitors if amount is less than 100 000 tons per year. Monitors shall be useable for gamma energy 60 keV-1.5 MeV; stationary equipment capable to detect 0.1 μSv/h, portable – 0.05 μSv/h.

Lithuania	In general, different types of radiation detectors are used for measuring and indication of radioactivity levels. The main specifications are following: easy to use, quick ability to detect the gamma radiation, range of measurable dose rate at starts at background level, devices are sensitive to photon radiation in the range 60 KeV-1.25 KeV. These specifications are not applied to the dedicated instrument, such as portal monitors. Automatic devices at the state border control point are available. Some scrap metal yards use the portable spectrometers that are able to measure surface contamination levels and to radionuclide content (in Sv/h, Gy/h, cpm, cps). For all the radiation detectors the range of measurable gamma dose rate levels varies from 0.2 μSv/h to 9.9 Sv/h (for portable spectrometers – from 0.01 μSv/h to 0.1 Sv/h).
Luxembourg	Pour le contrôle des camions et wagons des portiques fixes de mesure et d'alerte automatique sont utilisées. Ces portiques sont équipés de quatre détecteurs à scintillation en plastique (2 de chaque coté) avec les spécifications suivantes : • dimensions d'un détecteur [cm] : 122 x 46 x 5 • distinction entre rayonnement naturel et artificiel • soustraction automatique du bruit de fond du rayonnement naturel • prise en compte de l'effet de blindage du camion ou du wagon sur le du • bruit de fond du rayonnement naturel
Malaysia	Refer to exploranium catalog.
Netherlands (Customs)	See annex 1.
Netherlands (IMHSPE)	Different specifications for several gate detectors.
New Zealand	No equipment is currently deployed/capital purchase of detection equipment is currently being progressed.
Norway	Storskog: Plastic scintillation gamma detectors and H3 tubes for neutron detection. Others: Large plastic scintillators of portal type.
Philippines	Portable contamination monitors RM6 SN 1121 with external alpha, beta, gamma detector Probe BP7/4A SN 908, Teletector Survey Meter 611B SN 35613, MCA Canberra ESPEC-2 SN 12982503, Gamma Counting System with Ge-Li Detecto ; Dose rate monitors.
Poland	Gamma radiation – GM and scintillation detectors. Neutron radiation – proportional (He-3) detectors.
Portugal	The detectors installed are portal detectors BICRON
Romania (CNCAN)	- gamma radiation portable monitors - portal gamma monitors - sometimes exporters supplement gamma monitoring performed by notified laboratories with gamma spectrometry.
Russian Federation (Customs)	Fixed system "Yantar" with j and n channels, hand-held devices.
Russian Federation (CRIISI)	Stationary monitoring systems "Yantar", "Simmet", "Eberline", Exploranium" are used as well as mobile devices "DKC", "MKC"

	"CPM" and others.
Serbia and Montenegro	KOMO TL, KOMO TN, AD-b ~ 1 nSv/h. Their efficiency depends on geometry.
Slovenia	Portal monitors: different types (e.g. Exploranium GR-526, RADOS RTM910) Hand-held devices: Berthold LB-123 Pocket detectors - "pagers": Sensor Technology Inc.
Switzerland	The detector has to be able to detect variances less than 5 % of the background within 30 seconds per measuring point.
Tajikistan	Dosimeters are used.
Turkey	Radiation detectors should cover at least all the "Technical /functional specifications for border radiation monitoring equipment draft. Rev. 17.0 October 2003, based on IAEA consultants meeting in Vienna on 17-21 march 2003 and ISPRA test of test prosedures, JRC ISPRA, Italy 22 April-2 May".
United Kingdom	These are not prescribed by regulation, but set according to judgments made by the operators. A wide variety of specifications exist – from handheld GM to large plastic scintillator devices.
U.S.A.	There are no regulatory requirements for detectors. Grapple-mounted gamma and neutron plastic scintillation detectors are being used at the pilot ports. At metal processing facilities, portal gamma detectors or NaI detectors are used and they typically detect at 3 standard deviations above background.

Q M 5 – Where are the detectors physically located in relation to the scrap metal?

- **32 countries (84 percent of those responding) provided answers to this question.**

Comments on Q M 5	
Azerbaijan	It depends on the means of transport, but as close to the vehicle carrying the scrap metal as possible.
Bangladesh	Not applicable.
Belarus	At a distance 0.1 - 0.5 m from the scrap
Belgium	Il s'agit le plus souvent de portiques : le chargement passe en camion ou en train entre deux détecteurs.
Bulgaria	At smelting facilities for incoming scrap and at 3 border check points.
Croatia	No detectors installed
Czech Republic	Portal monitors at the entrance to metal processing facilities – road or railroad, vehicles pass between the detectors.
Dominican Republic	Mobile detectors

MONITORING

Estonia (Customs)	Scrap metal is monitored at road and railway gates of the scrap metal companies. Imported scrap metal from Russia is monitored at eastern border (2 roads and 3 railways, soon the border of the EU). There are also the same type of monitors at southern border with Latvia, accept the joint border point Veclaicene, where it is missing. Pagers are used as at border as everywhere around the customs territory.
Estonia (ERPC)	The detectors are located on the railways entering our territory on the borderline of territory and at car entrance gates on the borderline of the territory.
Finland (STUK)	The facilities have chosen the points of detection based on their own estimation and optimization.
Germany	Containers (train, truck) have to pass a portable detector.
Hungary	On the entry side of border crossing points.
Ireland	While Irish Ispat was in operation the Exploration detectors used by that company were located on each side of the internal roadway and positioned to ensure that all items in trucks and from ships were screened prior to processing.
Italy	At the exit point of metal scrap dealer, at the enter point of metal processing facilities before melting and after melting.
Kazakhstan	При поиске локальных источников гамма-излучения передвижными средствами измерения на поверхности транспортных средств и на расстоянии10 см от поверхности металлолома, при установлении загрязнения бета- и альфа-излучателями- выборочные измерения на поверхности металлолома.
Latvia	Stationary monitors are located at entrance/exit, portable are used for screening and investigations
Lithuania	Usually, the distance of 0.1 m from the surface of the scrap metal is used. This distance is applied to portable monitors.
Luxembourg	Au cas où la ferraille importée est transportée par route ou par voie ferroviaire, le contrôle est effectué à l'entrée des sites industriels du destinataire, p.ex au niveau des bascules avant le déchargement de la ferraille. Pour les importations de ferrailles transportées par bateau, le contrôle se fait au niveau du grappin lors du déchargement de la ferraille. La ferraille ainsi déchargée des bateaux est transportée par route ou par voie ferroviaire au site de production ou il est procédé à un deuxième contrôle.
Malaysia	Main entrance before receiving/weighing.
Netherlands (Customs)	The detectors are located and in use by special trained custom-officers and also in use by trained custom-officers who are responsible for examining the goods.
Netherlands (IMHSPE)	At the entry of the gate of the firms gate detectors are placed. Furthermore, hand-held monitors are used.
Norway	At entrance of each scrapyard. Scrap metal is passing through portals.
Philippines	Almost in contact with the scrap metal at various locations prior to loading in container vans.
Poland	Control points at entrance/exit of selected scrap yards and smelters.
Portugal	The portal detectors are located at entrance points of the facilities. Trucks or trains pass through the portal detectors
Russian Federation	At the entrance of the Customs control zone.

(Customs)	
Russian Federation (CRIISI)	The detectors ca be mounted on scales used for weighing trucks or railway cars with metal scrap along the sides of scrap carrying vehicles.
Serbia and Montenegro	Portable detectors are used. Setting-up stationary detectors is in plan.
Slovenia	Ironworks/private sector: Entrances (e.g. railway line). Border control (customs/police): The pagers are used at the Slovenian border crossings.
Switzerland	Generally, there is not a stationary location of the detectors. Each carriage is scanned with a detector by an employee of the metal scrap company at different points and at a distance of 20 cm of the transport container.
Tajikistan	There are no stationary detectors at Customs posts. Portable dosimeters and radiometers are used.
Turkey	Our country has 38 fixed radiation detection systems at 13 points of entry (including some sea-ports, airport and border gates). In addition, every scrap metal company that has melting facilities should have their own systems for radiation detection.
United Kingdom	Usually at the weighbridge if at all, or in "Goods Received" bays. Some operators have handheld monitors as well as installed equipment.
U.S.A.	Usually portal monitors for trucks and railcars at entrance to facility. In port pilot project, detectors are mounted inside the grapple on the cranes that off-load the ships.

<u>Q M 6</u> – What percentage of imported and exported material is monitored?

- **30 countries (79 percent of those responding) provided answers to this question.**

Comments on Q M 6	
Bangladesh	Not applicable.
Belarus	100 % is monitored at border crossings equipped with stationary detectors (9 out 32 road crossings and 1 out of 19 railway crossings)
Belgium	Pas de données disponibles.
Bulgaria	About 50-60% at border control and 100% at smelting facilities.
Czech Republic	Non available.
Estonia (Customs)	Probably 100% of consignments.
Estonia (ERPC)	100%
Finland (Customs)	Monitoring takes place at all border crossings.

MONITORING

Finland (STUK)	> 90 % (rough estimation, whole country).
Germany	Controls are based on risk assessment. Percentages cannot be reported as control measures are reported in general terms, not based on type of goods.
Hungary	100% of imported materials.
Ireland	Currently none.
Italy	100%.
Kazakhstan	Производственный выходной (входной) контроль-100%. Санитарно-эпидемиологический контроль при экспорте 100%. При импорте контроль санитарных органов выборочный. Радиационный контроль таможенных органов на границе РК с помощью стационарных систем планируется 100%.
Latvia	Should be all, but small dealers do not always meet the requirements
Lithuania	Near 100 % of all scrap metal, imported and exported through the state border of Lithuania is monitored.
Luxembourg	La ferraille importée destinée à l'industrie sidérurgique est contrôlée à 100 % et s'élève à 2.000.000 tonnes/année. Pour l'aluminium recyclé, il n'existe pas de données statistiques fiables, mais il est estimé que plus de 50 % de l'aluminium importé sont systématiquement contrôlés. Pour les exportations, il n'existe pas de statistiques.
Malaysia	Imported scrap was monitored 100 %.
Netherlands (Customs)	Its a minimum percentage, but I can give the numbers from import, export and during patrol. See annex II.
Netherlands (IMHSPE)	Specific figures are not known.
New Zealand	100 % of export - import entries for good are screened electronically- Permit requirements for legitimate movements are pursuant to Basel Convention.
Norway	We have no statistics, but have the impression that the majority of scrap metal is monitored at import.
Philippines	Data is not available to PNRI on the total imported/exported materials.
Poland	Imported – approx. 100%, Exported – approx. 50%.
Portugal	All scrap entering the facilities is monitored
Romania (CNCAN)	~ 5 % There are only 2 portal monitors at 2 border crossing points.
Russian Federation (Customs)	100 per cent.
Serbia and Montenegro	All raw materials, semi-products and already made metal products are controlled for radioactivity on import, export and transit.
Slovenia	Ironworks/private sector: Complete data not available, some organizations control 100% of incoming and out-coming goods. One organization particularly controls all foreign shipments, using hand-held devices.
Switzerland	> 90 %.
Tajikistan	About 50 % .
Turkey	For import: 70 % monitored; for export: 0 % monitored.
United Kingdom	Estimate for monitoring at border- 10 per cent export; 5 per cent import. However, this rises to 95 per cent (by tonnage) for imports when monitoring further up the supply chain is also considered.

U.S.A.	Most larger scrap yards and almost all steel mills monitor incoming material for radiation. Smaller scrap yards may not have radiation detectors. At the 3 ports in the pilot program, all incoming scrap is being monitored (as of Jan, 2004 about 900,000 tons). Incoming scrap at other U.S. ports is not being monitored

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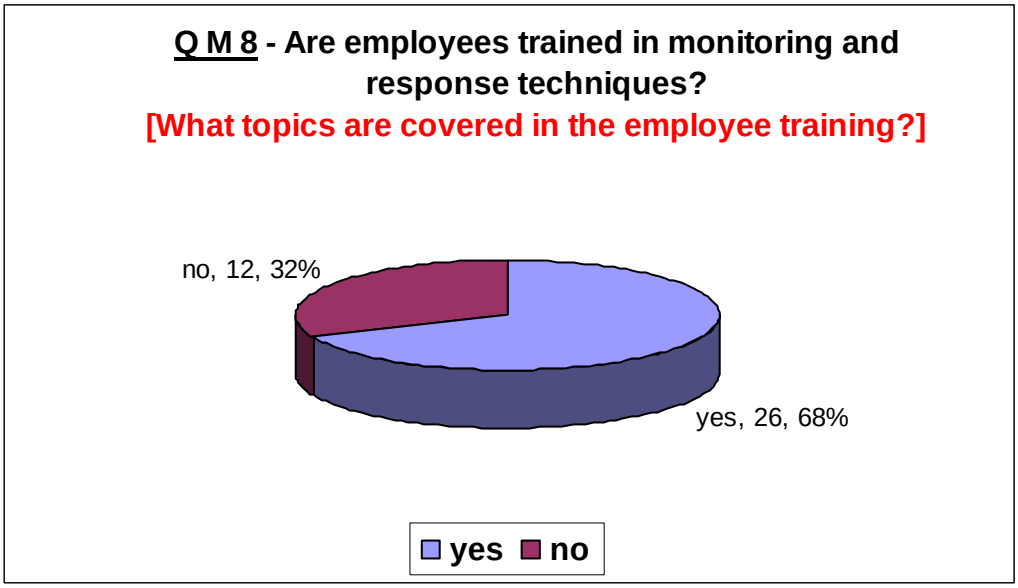
Q M 7 – Explain QA (quality assurance) procedures for the operation of the radiation detectors.

- **29 countries (76 percent of those responding) provided answers to this question.**

Comments on Q M 7	
Azerbaijan	Obligatory regular technical checks, calibration and inspection.
Bangladesh	Not applicable.
Belarus	Annual inspection and other measures in line with the national accreditation system
Belgium	Pas de données disponibles.
Bulgaria	In accordance with the technical requirements of the manufacturer, national legislation – periodic tests and calibration.
Czech Republic	Based on detector manufacturers recommendation, performed by service organizations and/or detector users. Portal monitors on border crossings are metrologically certificated by authorized organization every two years as well as the hand-held devices.
Estonia (Customs)	The specialized company maintains all stationary monitors twice in month.
Estonia (ERPC)	The manufacturer monitors our detectors twice a month via internet. Once a year, the monitoring of detectors is done by a licensed Finnish company.
Finland (Customs)	Comparison measurements are performed between fixed and portable equipment at least once a year.
Finland (STUK)	No requirements
Hungary	Regular maintenance (including calibration and verification) is performed by the supplier of the portal monitor.
Indonesia	No QA.
Ireland	None in use.
Italy	Not available.
Kazakhstan	Ежегодная метрологическая поверка переносных дозиметрических (радиометрических) средств измерений. Техническое обслуживание и ремонт в соответствии с инструкциями по гарантии качества. Техническое обслуживание стационарных систем таможенного радиационного контроля

	реализуется в соответствии с Регламентом обеспечения качества обслуживания систем стационарного обнаружения.
Latvia	Monitors shall be annually calibrated, personnel shall be trained appropriately
Lithuania	Once per year, the metrological check of the equipment is performed. Technical maintenance and repair works are carried out by the manufacturer. All the instruments shall be checked by user according to instructions given by manufacturer.
Luxembourg	Comme indiqué ci-dessus, les détecteurs utilisés pour le contrôle des métaux recyclés sont des portiques de mesures et d'alerte automatiques disponibles dans le commerce. L'assurance-qualité des définie par les utilisateurs de ces détecteurs et elle s'inscrit normalement dans les procédures internes pour la certification selon des normes EN ou ISO. Ces procédures prévoient : - le contrôle et la maintenance technique de l'équipement, - la vérification et la calibration régulière des détecteurs, - des épreuves de sensibilité régulières de l'équipement.
Malaysia	Refer to attached procedure.
Netherlands (Customs)	First of all the Customs authorities have the responsibility to check the permits who are needed by import- or export declaration. The Customs officers will examine the goods during the transport based on risk-analyses. In case of irregularity, the Custom officers must stop the transport and contact the authority at the Ministry of VROM through intervention of their experts.
Netherlands (IMHSPE)	Yearly tests. Calibration: Once in three years. Monitoring of background level: Daily
Norway	Storskog: Built-in procedures for exploranium detectors. Sensitivity checks and calibration. Others: This is the responsibility of each operator. We do not know their procedures. The same applies for the rest of the questions about monitoring.
Philippines	The monitoring instruments are calibrated periodically in the PNRI National Secondary Standards Dosimetry Laboratory (SSDL) that certifies radiation survey and monitoring instruments for radiation protection level measurements.
Poland	Procedures and instructions for users of radiation detectors.
Romania (CNCAN)	The monitoring laboratories used by exporters have QA procedures according to EN-45001. Customs authorities have not yet implemented QA procedures.
Russian Federation (Customs)	Every 6 months testing with standard sources. Metrological services for hand-held devices.
Russian Federation (CRIISI)	Metrological services check monitoring systems at least once a year. Current testing is performed with the help of standards sources by the staff running these systems.
Serbia and Montenegro	SSDL
Slovenia	Ironworks/private sector: Regular calibration (quarterly/yearly), supervision over the system during use, working procedures, training, annual testing, reports, database(s). Border control (customs/police): QA principles were adopted.

Switzerland	There exist for each company internal directives validated by the regulatory authority.
Turkey	Radiation systems are inspected annually by Turkish Atomic Energy Authority (including border gates monitoring systems and the systems located in the private scrap metal companies).
United Kingdom	The operator, not the regulator, determines these. Vary from daily instrument checks with a small source, to annual maintenance under contract.
U.S.A.	There is no U.S. QA protocol. The pilot port project requires daily functionality checks with a check source. At metal processing facilities, the frequency of the functionality checks is set by the facility, and may be performed infrequently.



Comments on Q M 8	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	Radiation safety, radiation control: equipment and techniques
Belgium	Des experts d'organismes agréés par notre Agence peuvent intervenir en cas d'alarme. Ils possèdent une formation en radioprotection et peuvent caractériser les sources découvertes
Bulgaria	Radiation protection training, pertinent legislation and acquaintance with the equipment operation.
Czech Republic	Border crossings – custom staff: basic maintenance, regular training in preparation. Metal processing facilities: basic maintenance, training is not regular. Licensed organization staff: trained in radiation protection, tested by SUJB.
Dominican Republic	Use of teams and some basic knowledge of radiological protection
Estonia (Customs)	Training system in scrap metal companies is not known for the

	Estonian Customs. Radiation control is a part of the training of Customs officers. Officers who manage this field of control are passed special courses in Estonia and in some foreign countries.
Estonia (ERPC)	Radiation control is a part of the training of customs officers. Officers who manage this field of control are passed special courses in Estonia and in some foreign countries (STUK and the IAEA courses). Covered topics: basics about radioactivity and radiation, radiation protection, radiation sources and their detection, transport rules, radiation monitoring arrangements, practical exercises. Yes they are. The training has been carried out by local specialists. Topics are the same as mentioned above.
Finland (STUK)	Regular training for customs officers by STUK, in facilities dealing with scrap metal internal training and training by STUK.
Germany	Safety and security of radioactive sources, health effects of ionizing radiation, radiation protection measures, competent authorities, "what to do if the detector shows alarm".
Hungary	Topics : Elements of the local response scenario, including notification channels.
Italy	Only personnel dedicated to controls – Only internal procedures are available.
Kazakhstan	Проводится ежегодное обучение производственного персонала служб входного (выходного) контроля по углублению знаний норм и правил по радиационной безопасности, а также проверке знаний «Методики дозиметрического контроля радиоактивного загрязнения металлолома». Планируется ежегодное бучение персонала служб радиационного контроля Агентства Таможенного контроля (АТК) «Правилам проведения радиационного контроля таможенными органами республики на государственной границе РК».
Latvia	Training on practical uses and basic radiation safety provisions is mandatory__ Response is ensured by Radiation Safety Centre and Radioactive waste management agency.
Lithuania	Yes. The national training centres offer, for example, training courses on "Radiation, chemical and pyrotechnical control of scrap metal control" for employees. Main topics: radiation, radiation protection, types, means for its detection etc. Instructions for use of monitoring techniques are provided by manufacturer's recommendations. Moreover, help has been provided by Sweden, United States of America in organizing training courses to detect illicit radioactive materials in Lithuania.
Luxembourg	L'industrie sidérurgique dispose de personnel qualifié en radioprotection pour gérer le contrôle et la gestion de solutions. Etant un petit pays, le Luxembourg ne saurait offrir une formation adéquate de ce personnel. Les personnes responsables pour la protection radiologique suivent un cours de formation dans un des pays voisins. Cette formation est celle des « personnes compétentes » des pays voisins. Le curriculum de cette formation varie selon le pays. Les petites entreprises qui ne savent garantir la mise en œuvre de ressources humaines compétentes sont accompagnées par la Division

	de la Radioprotection dans leurs démarches.
Malaysia	Trained by NDT instrument Malaysia Sdn Bhd. Trained on maintenance of detector equipment. All related employees were trained on response technique as QA procedures.
Netherlands (IMHSPE)	Since 2003 firms who trade in scrap metal above a certain level are, among others, obliged to have a radiation specialist working for the firm. Other topics are regulation, radiation, way of monitoring (hand held).
New Zealand	Training for officers is being developed currently.
Norway	Employees are trained in theory and practical use of the instruments.
Philippines	Yes. The training includes detection and measurement of radiation, dose rate monitoring and assessment.
Poland	Training is based on measuring instrument manual.
Romania (CNCAN)	- General knowledge on radiation; - Measuring techniques of the devices; - Acceptance criteria.
Russian Federation (Customs)	Special training programme for Customs personnel.
Russian Federation (CRIISI)	The subjects in which personnel training is undertaken are the following: Radiation safety, regulatory documents, methods and facilities for radiation monitoring.
Slovenia	Employees: Yes, users of devices are fairly trained (basic knowledge) by the producers of detectors. Customs and police officers have a training on radiation, radiation protection, sources and use of "pagers"). The SNSA is providing an expert advice through 24-hour on-duty service.
Switzerland	At least one person of the company has to pass a radioprotection training course for 3 days. The topics are: radioactivity, radiation, legal background, detectors, statistical variation of the background, procedure how to scan a transport container, what to do when a radioactive source is found.
Tajikistan	There is no systematic training, but some Customs officials have participated in IAEA training courses.
Turkey	Use of equipments, radiation protection, source measurement techniques, examining response plans.
United Kingdom	British Metals Recycling Association provides training to its members. Includes basic physics, instrumentation theory and practice, radiation safety, legal aspects, notification procedures, etc. Also, on site training provided in many cases.
U.S.A.	Training is dependent on the facility. The minimal training at most sites is a two hour course on using a hand-held monitor.

<u>Q M 9</u> – What is the protocol (including organizational structure and coordination) for response to a radiation alarm?

- **35 countries (92 percent of those responding) provided answers to this question.**

Comments on Q M 9	
Azerbaijan	Detection of increased radioactivity, suspension of the process, notifying the enforcement agency and joint investigation.
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	The vehicle is placed at a special parking, sanitary bodies and bodies of the Department for Supervision of Industrial and Nuclear Safety are notified OSP-2002, sanitary norms and regulations 2.6.1.8-2-2003
Belgium	Un protocole détaillé est en train d'être élaboré par notre Agence. Dans la pratique actuelle, la plupart des exploitants renvoient le chargement de ferraille vers leur expéditeur en cas d'alarme.
Bulgaria	Compulsory emergency response plans and 24 hour notification of the responsible control organizations.
Croatia	The protocol is under preparation.
Czech Republic	By SUJB Recommendation: report to the SUJB (to its Regional centers) and/or to the Czech Police.
Dominican Republic	Companies requesting authorization, use standard protocols with regard to the practice concerned
Estonia (Customs)	Estonian Customs. At the border response is made according to the regulations for such causes, established by Estonian Customs. In case of the illegal consignments the response from Customs started from level 0,3 µSv/h and Rescue Board or/and Ministry of Environment (Radiation Protection Center) is involved. Coordination of radiation activities at border is not legally stated.
Estonia (ERPC)	If there is a radiation alarm, the source must be found and responsible person in the company informed. Rescue Board and the Radiation Protection Center are also informed, they take radioactive source into their possession and organize the storage.
Finland (STUK)	STUK has published and distributed to all scrap metal dealers a leaflet recommending the following procedure: 1: isolate the source avoiding the excess dose 2: call for expert help (STUK). (contact information is given in the leaflet)
Germany	Involvment of competent radiation protection authority is required as of a threshold level of 1 microsievert per hour. As of a level of 5 microsievert per hour, the consignment ill be returned at the border.
Indonesia	No response yet, it is still in preparation.
Ireland	Following the closure of Irish Ispat and the termination of the

	importation of scrap steel to the Irish Ispat site, the on-site portal monitoring system was deactivated. When it was operational the nominated Radiation Protection Officer for Irish Ispat carried out an investigation and made on-site measurements of the radiation levels in and around the vehicle and its contents, which was either isolated or marked for return to sender. The Regulatory Service of the RPII was informed and provided advice or an inspection team depending on the dose rates detected. If radioactivity should be detected in any existing scrap-yards a similar procedure would be adopted. Outside of office hours the RPII has a duty officer on call who will initiate the appropriate response.
Italy	It is described by article 157 of the Legislative Decree n. 230 of March the 17th , 1995.
Kazakhstan	При обнаружении дозиметрическими(радиометрическими) средствами измерения радиоактивного загрязнения металлолома при внутренних перевозках или на государственной границе об этом ставятся в известность местные органы самоуправления, включая местные органы санитано-эпидемиологического надзора и органы Агентства РК по ЧС. О фактах нелегального перемещения радиоактивно загрязнённого металлолома информируется Комитет по атомной энергетике. Местными органами самоуправления принимаются меры по локализации загрязнения и недопущения облучения населения выше пределов, регламентированных нормами радиационной безопасности.
Latvia	Notification of Radiation Safety Centre and/or Radioactive waste management agency, which provides response in case of real alarms. To distinguish between nuisance and real alarms, each alarm should be investigated by use of portable monitors.
Lithuania	According to legal requirements, there will be measures foreseen to provide information in case radioactive material in scrap metal is detected. The organizational scheme is provided in the joint ministerial (Ministry of Health and Ministry of Environment) order N° 76/238 “On procedures of decontamination of illicit radioactive materials or contaminated objects” (1995).
Luxembourg	Le protocole de réaction après le déclenchement d’une alarme comporte les éléments suivants : - immobilisation et isolement du camion ou du wagon en fonction du débit de dose, - information du responsable du site, - information de la personne responsable de la radioprotection, - information des autorités compétentes (Division de la radioprotection), - information des douanes (dans certains cas seulement), - mesurages avec des appareils portatifs (débit de dose, gamma-spectrométrie in situ), - confirmation des résultats par l’autorité compétente, - mise sous scellée du chargement par les douanes (dans certains cas seulement).
Malaysia	The guard security is monitoring. The setting alarm and report to

	safety department. The radiation alarm is printed out every day for monitoring and recording.
Netherlands (IMHSPE)	Based on the Dutch nuclear energy act, firms are obliged to inform the Inspectorate when they become in the possession of radioactive substances.
New Zealand	C.I.Ms-National Emergency Management response is applied - detection equipment can be deployed.
Norway	Storskog: Contact NRPA.
Philippines	A response team will be activated within the framework of the National Radiological Emergency Plan.
Poland	Notification of services of appropriate region governor and competent authority (NAEA President).
Portugal	There are no protocols, but when an alarm occurs the facility requests experts from ITN/DPRSN.
Romania (CNCAN)	In the case of radiation alarm customs officers isolate the loading and warn the competent authorities (CNCAN and the General Directorate for Countering Organized Crime and Antidrug).
Russian Federation (Customs)	Protocol of Customs examination.
Russian Federation (CRIISI)	Requirements for the protocol are listed in special rules (medical standards).
Serbia and Montenegro	Informing the Ministry for Protection of Natural Resources and Environment and intervention (decontamination) by authorized legal persons - expert institutions.
Slovenia	Ironworks, other industry, scrap-yards: After the alarm at the portal monitor, they perform a verification using hand-held devices. If an elevated dose rate is confirmed, they contact an outside expert support. Customs and police: after verification of the alarm, they call on-duty officer at the SNSA who provides the first advice and recommends further steps.
Switzerland	The regulatory authority has to be informed.
Tajikistan	To notify the radiological service of the Ministry for Emergency.
Turkey	Every private scrap metal company has its own response plan. For the border gates response plan is given as attachment (including incident notification form and the procedures that custom enforcement officers should have to follow.
United Kingdom	The operator determines first response. Environment Agency has an understanding with the industry so that significant finds are notified promptly to the regulator. If there are significant safety issues, the safety regulator will also normally be notified.
U.S.A.	- At a metal processing facility, the scale operator notifies the Health and Safety Officer (HSO) of the alarm. The HSO notifies facility management and the State Radiation Official. There is usually 100% rejection of the domestic material, which is sent back to the originator, who is responsible for proper disposal. International shipments arriving by vessel are usually, but not always, accepted, decontaminated, and handled at port of discharge, with the shipper being financially responsible. - At the pilot ports, a consultant is immediately notified when the

	alarm is activated, as well as the State Radiation Official and the U.S. Environmental Protection Agency. The radioactive material is isolated from the other scrap in the grapple and is transported to a secure location. The material is not rejected and sent back to the originator because there are many other U.S. ports that do not monitor imports of scrap metal. The material is disposed of usually by the buyer, with financial responsibility to the seller.

Q M 10 - What is the detection alarm threshold setting?

- **31 countries (82 percent of those responding) provided answers to this question.**

Comments on Q M 10	
Azerbaijan	According to the current regulations, the alarm threshold should be set 0,2 microZv/h over the natural background.
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	Dose rate above the background
Belgium	Il est le plus souvent fixé à 56.
Bulgaria	As a rule twice the local background.
Czech Republic	As a rule 20 – 25% above background.
Estonia (Customs)	+30 % upon the background.
Estonia (ERPC)	5% above the background.
Finland (STUK)	Depends on the local conditions (background radiation, etc.), typically 10 % over the background level.
Germany	See above.
Hungary	Close to the national background. Correction for the homogeneity of the cargo is performed.
Indonesia	It has not yet been determined.
Ireland	It was set at just above background levels of the order of 0.1 to 0.2 µSv / h.
Italy	Not available.
Kazakhstan	Мощность эквивалентной дозы(МЭД) в 0,2 мкЗв/час на расстоянии 10 см от поверхности партии (транспортного средства) металлолома. При радиационном контроле на государственной границе с помощью стационарных средств обнаружения- превышение МЭД в 0,5раз над натуральным(естественным) фоном (НФ) или в 3 среднеквадратические ошибки измерения над НФ-в зависимости от используемой системы обнаружения.
Latvia	30-50% above natural background (recommended 30%, but common practice is to use 50%)

Lithuania	The detection alarm threshold setting is 0,3 μSv/h on border and 50 percent above background in metal scrap yards and metal reprocessing plants. The alarm level of 0.7 μSv/h for mineral fertilizers, coal, oil products, construction materials: granite, marble, breakstone controlled on the border, expanded clay is established.
Luxembourg	Le seuil d'alarme des portiques de mesure est fixé à 2-3 sigma du bruit de fond du rayonnement naturel. Cependant les logiciels procèdent à une soustraction automatique du bruit de fond et prennent en compte l'atténuation du bruit de fond par le camion ou le wagon.
Malaysia	Refer to exploranium catalog.
Netherlands (IMHSPE)	Maximum 20 nanoSievert per hour (Co-60) above the detection limit.
Norway	Several, f.eks. 2x background counts (total).
Philippines	Detection alarm threshold – 3 times the average background level.
Poland	Approx. 2 times of local background.
Portugal	The alarms threshold is set between 40 - 50 % above the background.
Romania (CNCAN)	2 times background.
Russian Federation (CRIISI)	For most part the alarm threshold is set automatically depending on radiation background levels. In stationary monitoring systems, the alarm threshold exceeds the background by 5-15 nSv/h, while in mobile devices by 10-50 nSv/h.
Serbia and Montenegro	0,20 μSv/h.
Slovenia	For portal monitors: up to 5-fold natural background. Some monitors may detect an unshielded Co-source with the activity above 60 kBq. For hand-held devices: app. 0.3 μSv/h.
Switzerland	Import: > 50 nSv/h. Export: deviation of the background greater than 5 %.
Turkey	3 times above background radiation.
United Kingdom	Varies – set locally, to maximize sensitivity and minimise false alarms.
U.S.A.	There is not regulatory standard. It is typically 3 standard deviations above background (2-5 SD range)

Q M 11 – How often is the detection system calibrated?

- **32 countries (84 percent of those responding) provided answers to this question.**

Comments on Q M 11	
Azerbaijan	According to its technical manual.
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	Annually. For stationary detectors at Customs border crossings - permanent automatic calibration against the background
Belgium	Données indisponibles.
Bulgaria	Monthly.
Czech Republic	Portal monitors: When sensitivity decreases for 15%, service organization recommends monthly.
Dominican Republic	The frequency depends of the type of use of the equipment, but at least once per year
Estonia (Customs)	By the maintenance, two times in month (here and below the data concerns only Customs equipment).
Estonia (ERPC)	Once a year. Regular checks are performed every week.
Finland (Customs)	At least once a year.
Finland (STUK)	No requirements set (voluntary basis).
Hungary	As required by the Q.A. Programme of supplier/manufacturer.
Indonesia	Once in a year.
Ireland	Not applicable but when in use, the Irish Ispat portal monitor was calibrated on a regular basis.
Italy	Not available.
Kazakhstan	Переносные средства измерения (дозиметры ,радиометры) подлежат ежегодной калибровке(при метрологической поверке приборов) при отсутствии неисправностей приборов. Стационарные системы обнаружения калибруются в соответствии с Техническим регламентом.
Latvia	Once per year.
Lithuania	According to legal requirements, they are calibrated at the State Enterprise Vilnius Metrological Centre once per year.
Luxembourg	Les procédures prévoient une vérification moyennant un étalon au moins une fois par année. Des firmes certifiées étrangères sont chargées de façon contractuelle de cette vérification.
Malaysia	Twice a year.
Netherlands (IMHSPE)	Once in three years.
Norway	Once a year.
Philippines	The calibration system is calibrated at least once a year or immediately following repair.
Poland	Once a year.
Portugal	There is an annual calibration.
Romania (CNCAN)	Information not yet available. CNCAN has asked this information for issuing the type approval of gate monitors. After receiving the requested information type approval will be issued.
Russian Federation (Customs)	According to technical documentation.
Russian Federation (CRIISI)	As a rule, the detection system is calibrated once a year.
Serbia and Montenegro	Once a year.

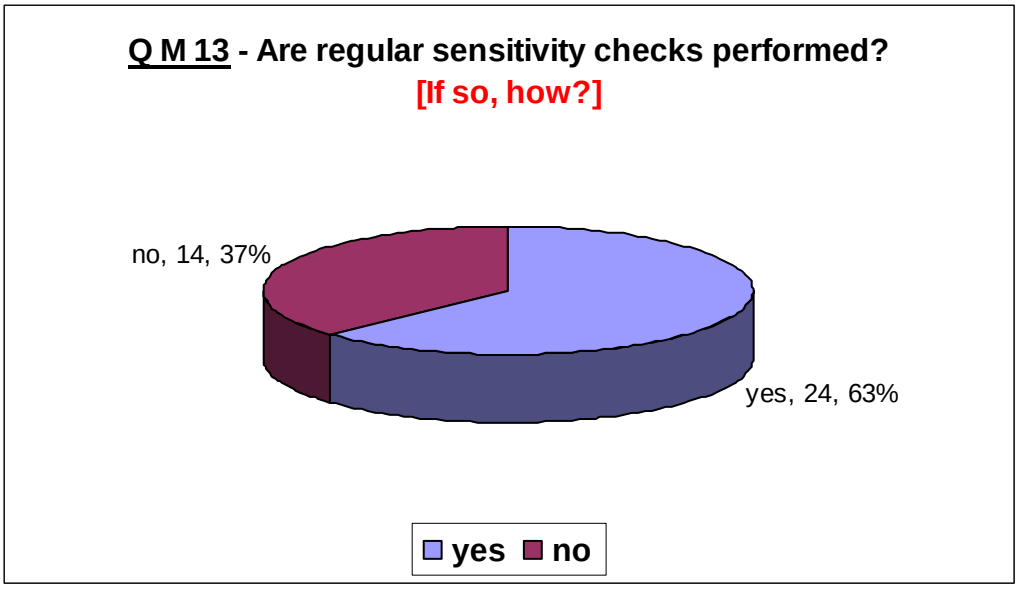
Slovenia	Ironworks, scrap-yards: portal monitors (quarterly), hand-held devices (once a month). Customs and police: once per year.
Switzerland	Yearly. Once, by the supplier of the instrument.
Tajikistan	Due to the absence of the relevant service, the detection equipment has not been calibrated for the last 10 years.
Turkey	Hand-held detectors are calibrated once a year by Turkish Atomic Energy Authority.
United Kingdom	Varies, typically 3 months but safety critical equipment must be calibrated every 14 months.
U.S.A.	No set protocol. It depends on the facility protocol, which may range from daily calibration to monthly calibration.

Q M 12 - How is it calibrated?

- **30 countries (79 percent of those responding) provided answers to this question.**

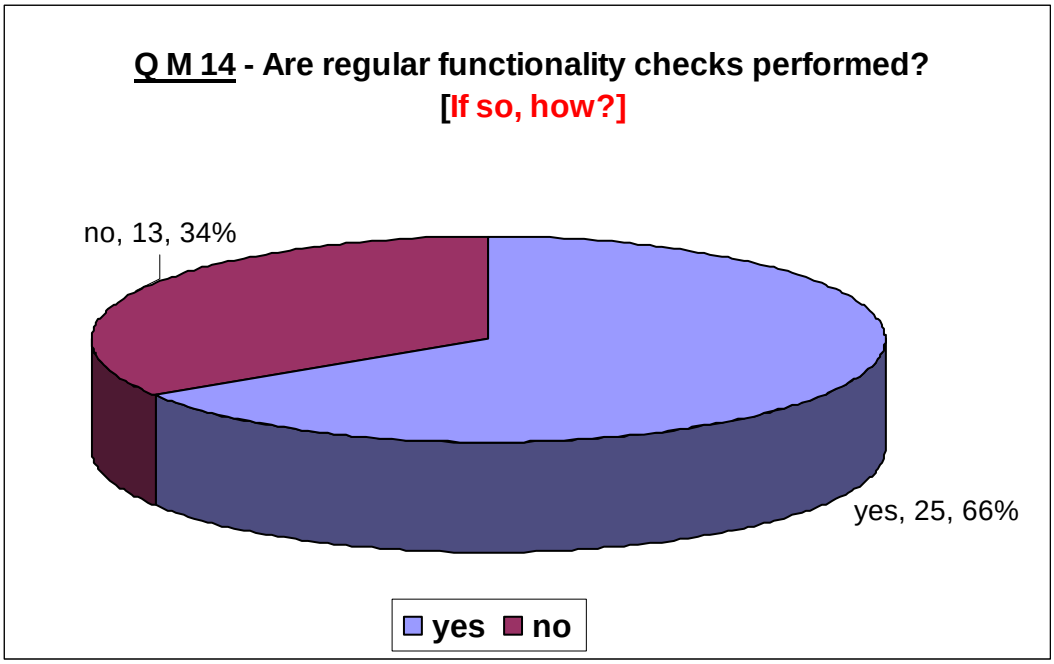
Comments on Q M 12	
Azerbaijan	By the radiation monitoring service of the laboratory for standardization.
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	In bodies for standardization and metrology, for stationary detectors - see above
Belgium	Données indisponibles.
Bulgaria	With point Cs-137 source.
Czech Republic	Using calibration source and build-in software.
Dominican Republic	By comparing with the CNAN
Estonia (Customs)	Through the menu settings, using laptops.
Estonia (ERPC)	Calibration is performed by a licensed company.
Finland (Customs)	The manufacturer of the equipment takes care of its regular maintenance. Maintenance and repair of the monitoring equipment by the supplier, if necessary.
Finland (STUK)	No requirements set (voluntary basis).
Hungary	Performed by supplier.
Indonesia	By accredited calibration body.
Ireland	It was calibrated using Cs-137 check sources.
Italy	Not available.
Kazakhstan	Калибровка переносных дозиметрических (радиометрических) приборов производится в аттестованных в законодательном

	порядке испытательных Центрах сертификации средств измерений
Latvia	National Secondary standard dosimetry laboratory uses a gamma source.
Lithuania	By standard methods using Cs-137 source.
Luxembourg	La procédure précise pour la vérification annuelle par ces firmes certifiées étrangères ne nous est pas connue en détail.
Malaysia	Calibrated by NDT instrument (refer to attached report).
Netherlands (IMHSPE)	Not regulated.
Philippines	Detection instruments are calibrated in the PNRI SSDL which is a national reference laboratory for radiation measurements.
Poland	Using gamma sources Am-241, Cs-137, Co-60 and neutron sources Pu-Be.
Portugal	The system is calibrated with a ^{137}Cs sealed source.
Romania (CNCAN)	With 2 check sources of Cs-137 of 370 kBq.
Russian Federation (Customs)	According to technical documentation.
Russian Federation (CRIISI)	With the help of standard sources.
Serbia and Montenegro	SSDL
Slovenia	Using calibration sources.
Switzerland	Generally by a Cs-137 source.
Tajikistan	Not at all.
Turkey	All calibration done in SSDL (Secondary Standards Dosimeter Lab.) at Cekmece Research Center.
United Kingdom	Attendance of manufacturer or other accredited laboratory for installed equipment; Shipment to accredited calibration lab for hand-held instruments.
U.S.A.	According to manufacturers specifications, using check sources.



Comments on Q M 13	
Azerbaijan	By means of standard radiation sources.
Belarus	Annual metrological inspection, use of unit radiation sources
Belgium	Certains exploitants effectuent eux-mêmes des contrôles de sensibilité à l'aide de sources test. Il n'existe pas de procédure standard.
Bulgaria	According to technical requirements and instructions.
Czech Republic	By the manufacturer recommendation: monthly – using calibration source in defined position close to each detector.
Estonia (Customs)	During the every maintenance sensitivity is checked using radioactive source.
Estonia (ERPC)	Every week according to the guidelines of the manufacturer/installation company.
Finland (Customs)	Comparison measurements between various detection systems.
Finland (STUK)	No requirements set (voluntary basis).
Germany	A radiation source will be brought close to the measuring unit (only relevant for stationary detection equipment).
Hungary	Yes. By supplier.
Ireland	Not applicable.
Italy	Not available.
Kazakhstan	Чувствительность переносных измерительных приборов регулярно контролируется с помощью контрольных источников(эталонов). Чувствительность стационарных систем обнаружения контролируется в соответствии с технологическим регламентом.
Latvia	Detectors usually have check sources; operators shall verify sensitivity for portable monitors daily, stationary monitors usually are checked by a service company.
Lithuania	According to manufacturer's instructions given in the accompanying documents.
Luxembourg	Les procédures stipulent que des contrôles de sensibilité doivent être

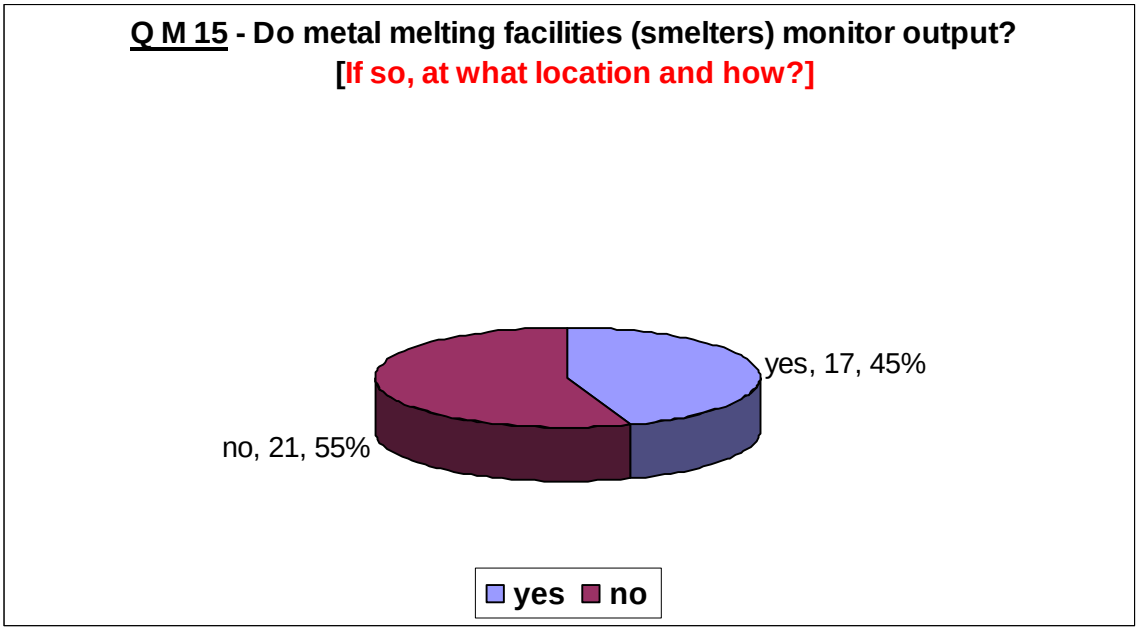
	effectués quatre fois par année. Ces vérifications sont effectuées avec des sources de référence de faible activité. La reproductibilité et la traçabilité de ces vérifications doivent être garanties par des procédures internes.
Malaysia	Once a week.
Netherlands (IMHSPE)	Once a year with a Co-60 source, 20 nanoSievert per hour above the detection limit.
Norway	Sensitivity checks are made weekly in the beginning, then each month.
Philippines	Regular sensitivity checks are performed using check sources.
Poland	Quarterly – for gamma detectors; Annually – for neutron detectors.
Portugal	The facility does its own verification monthly.
Romania (CNCAN)	Information not yet available. CNCAN has asked this information for issuing the type approval of gate monitors. After receiving the requested information type approval will be issued. In principle such test should be performed daily.
Russian Federation (Customs)	According to technical documentation.
Russian Federation (CRIISI)	During calibration.
Serbia and Montenegro	By calibration source
Slovenia	Once a month, using a weak Cs-137 source or annually (Cs, Co).
Switzerland	Yearly by a source at a defined distance to perform a check whether the instrument still indicates the same value as when it was bought.
Turkey	By using calibration sources.
United Kingdom	Not normally between calibrations.
U.S.A.	It is necessary to check for degradation of signal, photo-multiplier tubes, or detection media, but this is currently not being done at most facilities.



Comments on Q M 14	
Azerbaijan	Checks are made once a year by the laboratory for standardization, once a month a technical inspection is performed, visual control and control by means of a unit radiation source are performed daily.
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	Prior to measurements
Belgium	Cf. question précédente.
Bulgaria	According to instructions.
Czech Republic	By the manufacturer recommendation: weakly – passing between the detectors with the calibration source.
Dominican Republic	Sometimes, in line with the team's manual
Estonia (Customs)	During the every maintenance.
Estonia (ERPC)	Every week according to the guidelines of the manufacturer/installation company
Finland (Customs)	Comparison measurements between various detection systems.
Finland (STUK)	No requirements set (voluntary basis).
Germany	A radiation source will be moved along the measuring unit (only relevant for stationary detection equipment).
Hungary	Yes, in accordance with provisions of supplier.
Ireland	Not applicable.
Italy	Not available.
Kazakhstan	Нормальное функционирование оборудования устанавливается путем анализа графиков стабильности работы переносных средств измерения за определенный период времени.
Latvia	Portable monitors shall be checked according to instructions provided by suppliers.
Lithuania	According to manufacturer's instructions given in the accompanying documents.
Luxembourg	Comme pour les contrôles de sensibilité, les procédures fixent que des

	contrôles techniques doivent être effectués quatre fois par année. Ces vérifications sont effectuées par des techniciens du site. Le détail de ces contrôles techniques ne nous est pas connu en détail.
Malaysia	Once a week, check by electrician for all the equipment and fill up in checklist.
Philippines	Regular functionality tests are performed by checking battery tests and using check sources.
Poland	Continuously**.**
Romania (CNCAN)	Information not yet available. CNCAN has asked this information for issuing the type approval of gate monitors. After receiving the requested information type approval will be issued.
Russian Federation (Customs)	According to technical documentation.
Russian Federation (CRIISI)	According to the technical documentation of the device.
Slovenia	Daily, checking of functionality and operability of the system. Annually in one case.
Switzerland	With check source before every utilization. Checks: battery, background value, functionality check with a source.
Turkey	Done by law enforcement officers using calibration sources and checks if the system is working properly.
United Kingdom	Yes, normally as part of daily operations. Use of check sources.
U.S.A.	Hand-held check sources are used.

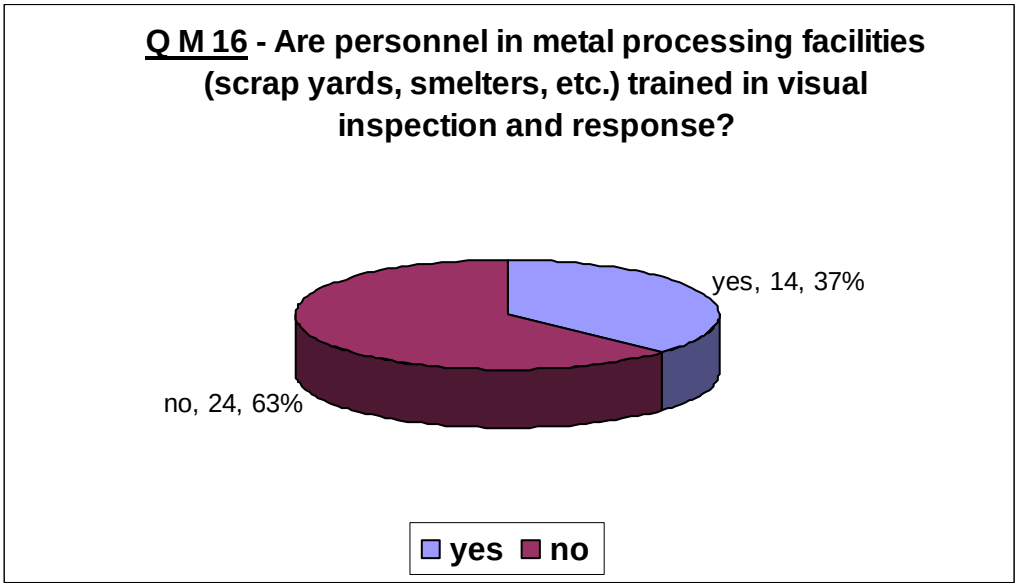
Q M 15 - Do metal melting facilities (smelters) monitor output?
[If so, at what location and how?]



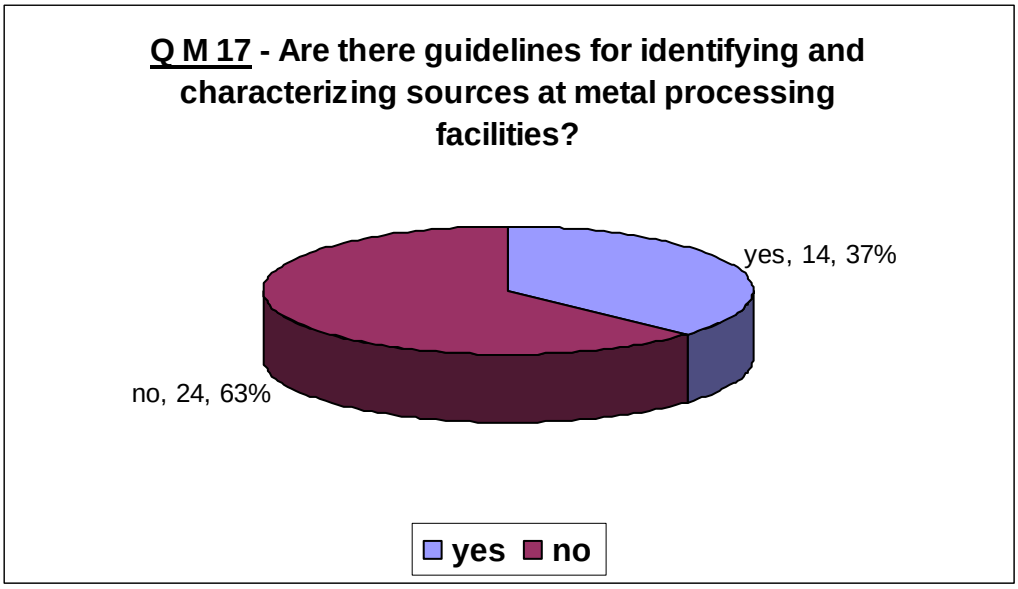
Comments on Q M 15	
Bangladesh	Not applicable.
Belarus	In line with sanitary norms and regulations 2.6.1.8-2-2003
Belgium	Pas de données disponibles.

MONITORING

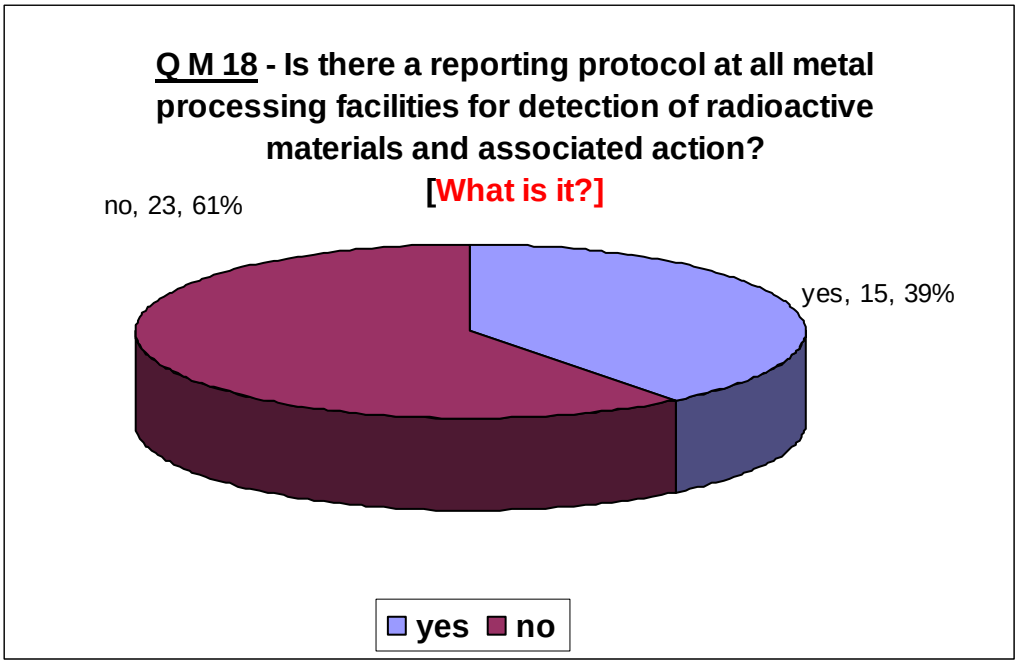
Czech Republic	Samples during the melting process and samples of the final product – spectroscopy measurement.
Estonia (ERPC)	No information about metal melting facilities.
Finland (STUK)	Continuous monitoring at output, regular laboratory analysis of material samples.
Germany	Sometimes. There is no regulatory control.
Hungary	It depends on facility. Some facilities have portal monitor at the entrance. Optional same point to monitor output.
Ireland	Not applicable.
Italy	Normally they have portal monitors at the exit point of metal and dust waste produced by steel making process.
Kazakhstan	Металлургические предприятия контролируются посредством получения регулярных Гигиенических Заключений по радиационной безопасности продукции (металла) от Санитарно-эпидемиологических органов Минздрава РК на основании санитарно-эпидемиологической экспертизы на содержанию в металле радионуклидов. Право на неограниченное использование металла обеспечивается при наличии в нем суммарной удельной активности радионуклидов менее 0,3 кБк/кг.
Latvia	Not regularly, they routinely monitor scrap before melting and occasionally afterwards
Lithuania	According to the draft order of Director of the Radiation Protection Centre it has to be controlled.
Luxembourg	Dans la sidérurgie, chaque chargement d'acier en fonte est contrôlé individuellement par moyennant un échantillon prélevé dans les poches d'acier. L'activité gamma-total est mesurée par un équipement muni d'un détecteur NaI. Seulement après vérification, l'acier en fonte peut rentrer dans le cycle de production.
Malaysia	The main entrance as a checkpoint, random output was picked and send to mint to check.
New Zealand	One major smelting plant in Auckland that exports product monitors all feed scrap material.
Philippines	Only in large commercial facilities at the gate entrance.
Poland	At the entrance/exit of selected smelters.
Russian Federation (CRIISI)	Unfortunately, only a limited number of metallurgical works conduct monitoring of their output at the laboratories based on chemical analysis of samples.
Slovenia	Yes, they monitor semi- and final products, using hand-held devices. Some ironworks control the products also by portal monitors.
Sweden	Part of the internal QA of the industry (not regulated).
Switzerland	Switzerland has (today) no metal melting facilities.
Tajikistan	Due to the absence of modern devices, control services monitor output by means of old non-calibrated detectors.
United Kingdom	In general no: However, some operators do so, by checking product and slag, for beta/gamma and alpha contamination.
U.S.A.	There is no requirement to measure output. Most large facilities monitor output at the outgoing scales, using portal monitors. Some facilities have installed baghouse (off-gas system) monitors.



Comments on Q M 16	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Finland (STUK)	Internal training in major facilities, STUK's information leaflet is delivered also to smaller operators.
Hungary	It depends on facility.
Ireland	No, however the RPII will prepare advice on this issue.
Luxembourg	Dans le secteur de la sidérurgie, les opérateurs chargés de la manipulation des ferrailles ont des éléments d'information permettant une inspection visuelle. La recherche de solution incombe au responsable de la radioprotection de l'usine en commun accord avec les autorités compétentes (voir ci-dessus). Pour les autres établissements de traitement de ferrailles (parcs à ferraille, chantiers de construction,…) le personnel n'est pas formé pour des inspections visuelles.
New Zealand	Not specifically aware of any programmes.
Philippines	We are just starting an awareness campaign.
Romania (CNCAN)	Partially, at their own initiative.
Slovenia	Except in some cases.
Tajikistan	Yes, but not enough.
U.S.A.	There is no regulatory requirement; minimal training does occur in most facilities.



Comments on Q M 17	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Estonia (ERPC)	Guidelines issued by our company.
Finland (STUK)	Nothing official, some facilities have equipment capable of isotope identification.
Germany	There exist guidelines of the scrap metal industry.
Hungary	It depends on facility.
Ireland	No, however the RPII will prepare advice on this issue.
Italy	Not by law but according to internal procedures.
Luxembourg	Les responsables de radioprotection dans les usines sidérurgiques ont une formation pour l'utilisation d'équipements portables permettant des mesures gamma-spectrométriques, ou encore d'équipements portables de mesure de contamination alpha-bêta, etc. Pour les petits établissements qui ne sont pas munis de tels équipements, l'autorité de contrôle prend en charge cette identification. Dans tous les cas, la caractérisation des sources ne peut se faire sans cette autorisation de contrôle. Il n'existe cependant pas de procédures écrites strictes pour cette caractérisation. En cas de doute ou de problèmes, l'autorité de contrôle sollicite l'assistance d'une expertise externe étrangères.
New Zealand	None specifically know of.
Philippines	To be established.
Slovenia	No, these two functions are in most cases performed by the SNSA inspection and/or the technical support organization (expert institution).
Tajikistan	Yes, but only old Soviet documentation is available .
United Kingdom	Some are provided by Trade Associations. Often a contractor will be used to identify and characterise, prior to disposal decisions.



Comments on Q M 18	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	Notifying to the competent authorities
Bulgaria	Radiation detection protocol.
Czech Republic	By SUJB Recommendation: report to SUJB (to its Regional centers).
Dominican Republic	They just have to get in touch immediately with CNAN
Estonia (ERPC)	No information about unified guidelines but guidelines in our company are in regulation according within the Radiation Act.
Finland (STUK)	Nothing official, each facility follows its own procedure. STUK's leaflet recommends that whenever something abnormal is detected, STUK shall be informed
Hungary	The case has to be reported to central registry of radioactive sources (HAGA) and to SPHMOS. The case will be investigated, including police investigation.
Ireland	No, however the RPII will prepare advice on this issue.
Italy	The law specifies only witch authority is to be informed after detecting radioactive materials. The reporting protocol is described by internal procedures.
Kazakhstan	Существует ежегодная отчетность предприятий металлургии в рамках вида деятельности по обращению с ИИИ, которую они осуществляют по лицензии Комитет по атомной энергетике.
Latvia	Guidance is provided during the training for inspections and response. Some informative materials were provided about radiation signs and typical containers, but those shall be updated. There are two types of protocols – conformity statement for cargo, that it does not contains enhanced radioactivity (for export and for melting). Incidents are

	reported by the Radioactive waste management agency – materials should be disposed of as waste (if applicable).
Lithuania	In case a higher radiation level is detected, the Radiation Protection Centre and other state authorities will be informed without any delay according to established order (radiation levels are 1.5 times above background). The competent staff will inform what measures will be taken. Before this information is provided, the administration of yard will restrict any entrance to the contaminated area. The reporting protocol is of free form. At least following information will be registered : • gamma background radiation level; • data about measureéents (date of measurement, short description of measured scrap metal); • measurement results.
Luxembourg	Il existe une procédure écrite pour opérer des équipements de mesure. En cas de déclenchement d'une alarme par ces équipements, les usines dressent un premier rapport de compte-rendu qui comprend : - le formulaire de notification d'un incident, - un rapport de détection de la radioactivité, - le bulletin de mesure généré automatiquement par l'équipement de mesure. - L'autorité compétente dresse également un rapport qui comprend : - les indications sur le fournisseur, le transporteur et le destinataire des métaux, - les informations en relation avec le transport (dates d'envoi, No immatriculation camion, No de wagon, type de chargement, etc…), - les données relatives aux mesurages (résultats des mesures des débits de dose, résultats de la gamma-spectrométrie in situ, etc), - en cas de prélèvements de frottis un rapport avec les résultats. Après déchargement, l'organisme qui procède au déchargement de la source et organise le retour au fournisseur dresse un rapport comportant les données indiquées ci-dessus et en plus : la procédure concernant le déchargement, l'identification et caractérisation des sources isolées, la gestion des sources ou des déchets.
Malaysia	Inform to AELB (Regulatory Body).
Netherlands (IMHSPE)	Since 2003 firms who trade in scrap above a certain level are obliged to use equipment to measure radioactive substances in scrap. The firms need to register the alarms and have to arrange financial securities and have a radiation specialist working for the firm. Furthermore, in case of alarms they need to report this to the Inspectorate.
New Zealand	For scrap yards with radiation detectors installed all radioactive material detected should be reported to the NRL.
Philippines	Not yet established. Philippine Action Plan on the Safety and Security of Radiation Sources will address this need.
Poland	Notification and additional documentation.

Switzerland	According to internal instructions of the facility(approved by the regulatory authority).
Tajikistan	Under preparation.
Turkey	All private metal companies have their own response plan and they inform Turkish Atomic Energy Authority according to the procedures in the response plan.
United Kingdom	The “protocol” is informal and is based on awareness raising posters distributed by the regulators to the relevant metals processing industries. This explains what action should and should not be taken, and provides contact information for the regulators
U.S.A.	Some facilities follow the protocol described above.

DISPOSITIONING

<u>Q D 1</u> – How is the detected source dispositioned (removed, eliminated, transported to a waste repository)?

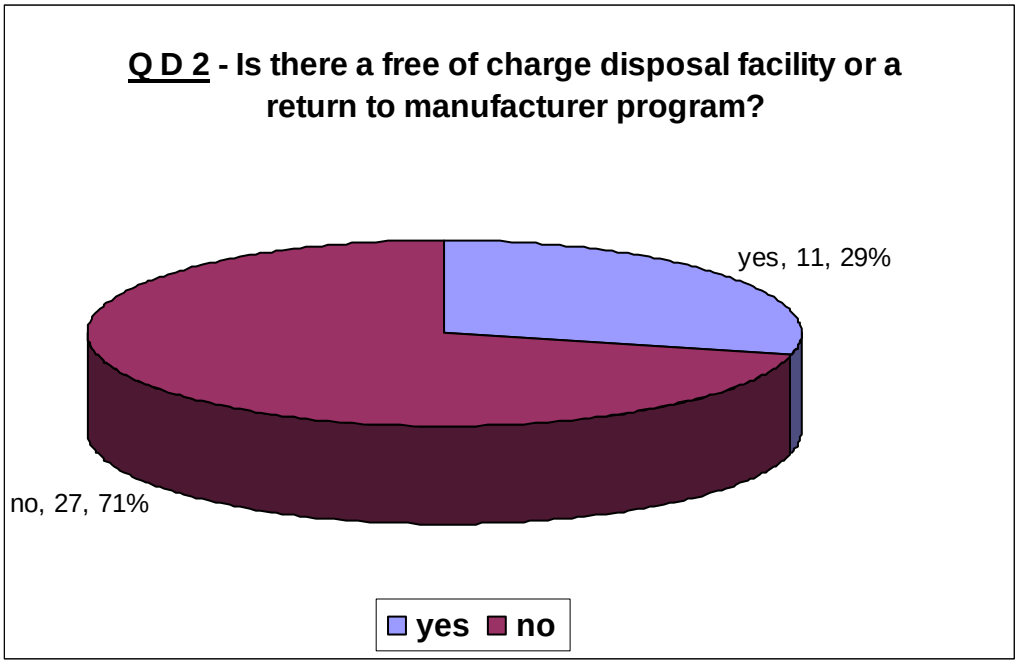
- **33 countries (87 percent of those responding) provided answers to this question.**

Comments on Q D 1	
Azerbaijan	Withdrawal of the source and its transport to the waste repository.
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	Return to the consignor, transport to a waste repository
Belgium	La source est transmise à l'Ondraf (organisme de gestion des déchets radioactifs) via l'intervention d'un organisme agréé.
Bulgaria	Removed, packed and transported to the National Radioactive Waste Repository.
Croatia	The source, if detected, would be transported to the appropriate storage.
Czech Republic	Identified, removed and transported by a licensed organization under supervision of the SUJB. Disposed by a licensed organization.
Dominican Republic	In case such problem is identified, CNAN acts in accordance with standard procedures
Estonia (Customs)	Estonian Customs is not responsible for this issue.
Estonia (ERPC)	The detected source is removed in co-operation between the metal company, rescue board and Radiation Protection Centre and transported to the radioactive waste interim storage.
Finland (Customs)	All instructions regarding radiating material are included in the enforcement guidelines issued by the National Board of Customs (reporting, verifying measurements, isolation, turning back etc.).
France	Pour une source radioactive d'activité notable, intervention d'une société spécialisée avec contrôle des pouvoirs publics ou intervention directe des pouvoirs publics.
Germany	Experts are eliminating the radioactive material and the competent authorities are informed. If the owner cannot be identified the radioactive material is transported to an installation appointed by the competent authority (only in cases where the material has not been refused entry at the border).
Hungary	The detected source is transported to a final repository or a depository.
Indonesia	Internal storage and re-exportation to exporting countries.
Ireland	If a radioactive item was detected it was returned to the supplier, or previous owner, if known who was obliged to place in secure storage and to apply for a licence from the RPII for the custody thereof . If the supplier or previous owner could not be established then the item was stored in a designated facility on site (Irish Ispat).
Italy	The detected source is removed and transported to a waste repository.

DISPOSITIONING

Kazakhstan	Транспортировка к месту длительного хранения (захоронения).
Latvia	By the Radioactive waste management agency based on request from owner
Lithuania	According to legal requirements in force. Detected source is transferred by the Radioactive Waste management Agency to interim storage facility. The Radiation Protection Centre and the State Nuclear Power Safety Inspectorate are also informed.
Luxembourg	En tant que pays non nucléaire, le Luxembourg ne dispose pas d'une décharge pour matériaux ou sources radioactives. Si le fournisseur du métal est connu, le chargement est retourné tel quel au fournisseur ou la source est immédiatement retournée au fournisseur ou en cas de déchargement sur place. Si le fournisseur est inconnu, le destinataire est en charge de l'élimination de la source. Il doit l'envoyer à une installation de gestion de déchets radioactifs autorisée, située à l'étranger.
Malaysia	Checked by AELB and take necessary action.
Netherlands (IMHSPE)	The detected source in the end is brought to the one company in the Netherlands (Covra) which is meant for the disposal of radioactive waste.
New Zealand	If necessary sources may be transported to a national spent sealed source store operated by NRL.
Norway	The source is returned to its origin.
Philippines	The Radiological Response Team conducting the monitoring and assessment brings along a lead-lined stainless steel container as part of their routine response procedure to place the removed sources for subsequent management at the PNRI Centralized Facility for Radioactive Waste.
Poland	According to decision of competent authority.
Portugal	The radioactive material detected is removed and transported to an interim storage facility.
Romania (CNCAN)	The sources are dispositioned by CNCAN or by authorized organizations at CNCAN request.
Russian Federation (Customs)	Customs personnel passes sources over to special organization "RADON" for dispositioning.
Russian Federation (CRIISI)	The detected source is localized, placed in temporary storage and transported to a waste repository.
Serbia and Montenegro	Transfer by special vehicle to the authorized institution for temporary disposal.
Slovenia	In most cases, the found source is transported to the Central Storage for Low and Intermediate Level Waste at Brinje near Ljubljana.
Sweden	National recognized waste handler.
Switzerland	Individually in each case.
Tajikistan	Transport to the Repository point and storage at a certain warehouse.
Turkey	All activities concerning disposition, are carried out according to our national regulation on the safe transport of radioactive material.
United Kingdom	The metal processing operator is responsible for arranging disposal, in full compliance with national statutory requirements relating to radioactive waste management, personnel and public safety and transport. Most often, a waste disposal contractor will be used who will (for a fee) characterise the item, and transport it to a "disposal"

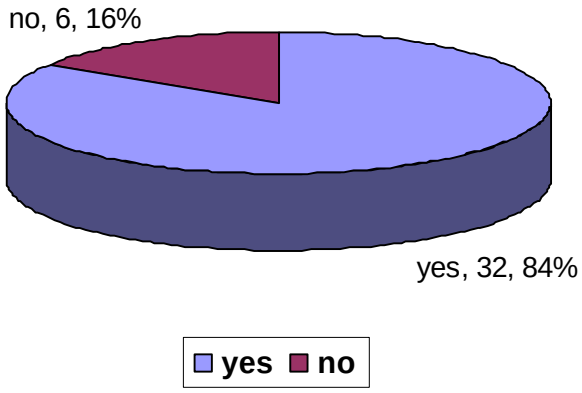
	facility. Once title is transferred to the receiving facility, the owner of the metal processing facility has no further liability. However, the fees to get this far are very high.
U.S.A.	The source is treated as low-level radioactive waste and is disposed in an appropriatly licensed facility. The transportation of the source must comply with Department of Transportation regulations, which allows for a transport exemption for unidentified radioactive material being returned to the originator.



Comments on Q D 2	
Estonia (ERPC)	The country is trying to apply the return to manufacturer program. Free of charge disposal is applied only in case of orphan sources.
France	Programme pour renvoi au producteur pour sources identifiables.
Germany	In principle: “Return to manufacturer”.
Hungary	Return to manufacturer programme.
Ireland	No. Ireland has yet to establish a dedicated storage facility for disused and orphan sources. Currently the RPII will license a practice involving a radiation sources only if the supplier of the sources provides a written undertaking to accept it back when no longer required
Italy	Not regulated by law.
Latvia	Transporting and packaging expenses are to be paid, no State program for return to manufacturer since there are no manufacturers of radiation sources in the country.

Luxembourg	Toutes les sources sont retournées aux fournisseurs. Voir également réponse à la question ci-dessus
New Zealand	Not at present.
Portugal	There is no return to the manufacturer. Each producer pays according to the Law.
Romania (CNCAN)	For the case that the owner of detected source is not identified (orphan sources).
Slovenia	There is no disposal facilities in Slovenia. So far, the orphan sources were not returned to the originator.
United Kingdom	A few types of sources may be returned to manufacturer, but this is negotiated each time.

Q D 3 - Does your Ministry/office/organization support the "Polluter Pays" principle?



Comments on Q D 3	
Hungary	It depends on the case. It might be difficult or impossible to identify the polluter.
Portugal	The same as the previous question.
Slovenia	This principle is incorporated into national regulation.

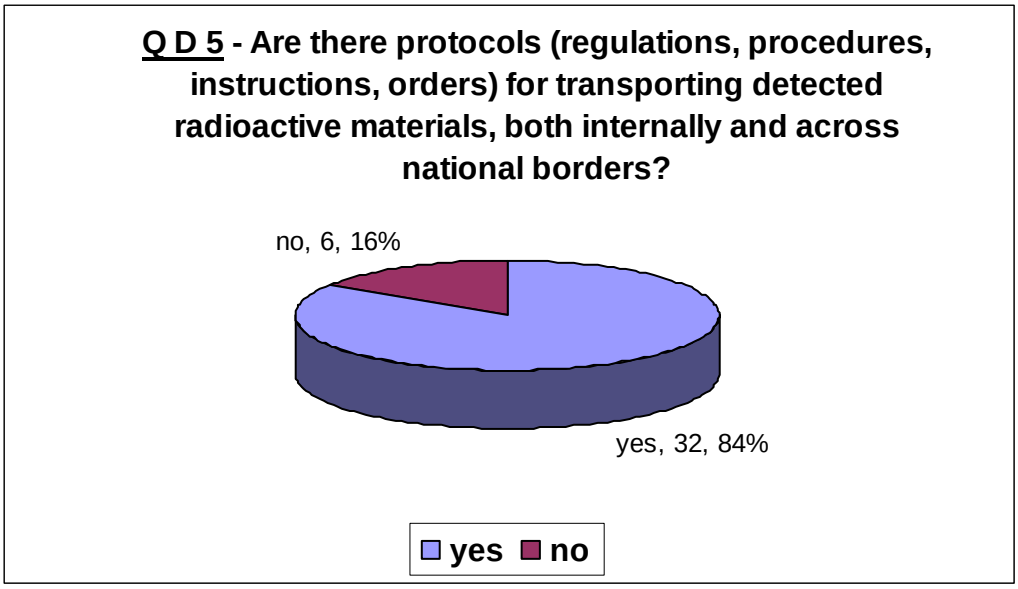
<u>Q D 4</u> – Who is responsible, financially and physically, for disposition of detected radioactive materials?

- **32 countries (84 percent of those responding) provided answers to this question.**

Comments on Q D 4	
Azerbaijan	The owner of the materials.
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	Consignor. If there is none, then special state funds take over
Belgium	Dans la pratique, c'est l'exploitant qui a découvert les matérieux qui est responsable.
Bulgaria	The owner.
Croatia	Owner/User.
Czech Republic	Financially: polluter (source owner), if it is not known then state. Physically: Radioactive Waste Repository Authority (SURAO).
Dominican Republic	The owner
Estonia (ERPC)	It shall be decided by the Minister of the Environment.
Finland (Customs)	The consignor / the owner of the goods.
Finland (STUK)	The owner/holder of the material. The State has a secondary responsibility.
France	L'exploitant de l'installation où la découverte a eu lieu (si les matériaux radioactifs sont déjà dans l'installation) ; l'expéditeur du chargement (si les matériaux ne sont pas rentrés : détection à l'entrée)
Germany	In principle: the owner.
Hungary	The owner of the material.
Indonesia	License holder and promotional body.
Ireland	The legal person who is established as having responsibility in law for the source
Italy	Not regulated by law, but normally the responsible for disposition of detected radioactive materials is the metal scrap dealer.
Kazakhstan	Грузоотправитель(поставщик) радиоактивно загрязненного материала несет все затраты, связанные с ликвидацией(захоронением) обнаруженных радиоактивных материалов.
Latvia	For incidents fees applicable only for transportation. All practices with radioactive waste done by national Radioactive waste management agency.
Lithuania	The detected radioactive materials are dispositioned to the Radioactive Waste management Agency by means from state budget. After that the expenses are laid at the owner of scrap metal according to established order.
Luxembourg	Soit le fournisseur, s'il peut être identifié, soit le destinataire si le fournisseur ne peut pas être identifié.

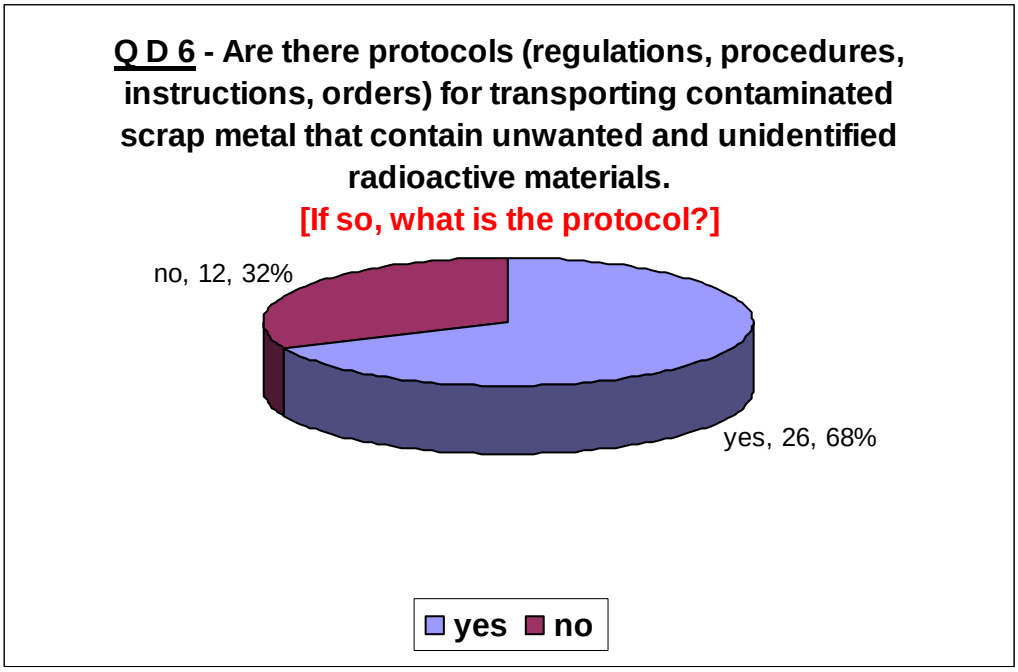
Malaysia	Customer paid the fee and AELB action for disposition.
Netherlands (IMHSPE)	The scrap company.
Philippines	PNRI, as a general rule, would remove all detected radioactive/contaminated materials at its own expense in the interest of public health as theses sources are generally classified as orphan sources.
Poland	Competent authority.
Portugal	All radioactive solid wastes produced in Portugal are collected, transported and storage by ITN/DPRSN.
Romania (CNCAN)	The legal owner of the source (former holder) or, if not identified, the owner of the scrap.
Russian Federation (CRIISI)	The works that have detected radioactive materials.
Serbia and Montenegro	User – owner.
Slovenia	Financially: the polluter, if known, otherwise the State Physically: the Agency for Radioactive Waste Management.
Sweden	The owner if identified.
Switzerland	Depends on individual case.
Tajikistan	The company using radioactive wastes.
Turkey	Physical disposition activities are carried out by TAEA (Turkish Atomic Energy Authority), financial part is under responsibility of the private company that imports the scrap metal.
United Kingdom	The owner. This may be the consignor, or the receiving metals recycling facility, depending on circumstances.
U.S.A.	The last owner of the material is financially and physically responsible for it's disposition. If the radioactive material origin (origin of the scrap shipment) cannot be determined, the last possessor is responsible.

DISPOSITIONING



Comments on Q D 5	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Croatia	The Law on Dangerous Goods Transportation (The Official Gazette No 97/93, No 151/03).
Finland (Customs)	International regulations on transportation and surveillance of radioactive materials apply.
Hungary	32/2002(III.1) Governmental decree for international transport. For domestic transport: Protocol determined on a case by case basis.
Ireland	Transportation of any radioactive source is undertaken in accordance with our National Regulations, EC Regulations (eg. 1493/93 for sealed sources), the IAEA regulations on the safe transport of radioactive material and ADR, RID, IMO and ICAO guidance as appropriate.
Kazakhstan	В случае обнаружения радиоактивных материалов, дальнейшая их первозка Осуществляется по Правилам безопасной перевозки радиоактивных Материалов, ПБПРМ-99 /Правила МАГАТЭ, No. TS-R-1 (ST-1, Revised/.
Luxembourg	Pour éviter des délais inutiles et pour garantir la protection radiologique de la population et de l'environnement, les dispositions du paragraphe 1.1.3.1.-e du RID et de l'ADR (« transports d'urgence destinés à sauver des vies humaines ou à protéger l'environnement ») sont le plus souvent appliquées.
New Zealand	Specifically IAEA Transport Regulations.
Romania (CNCAN)	The transport regulations of radioactive materials are applied.
Slovenia	Slovenia is a party to the ADR, RID, ICAO, IMO and is adopting and implementing EU directive 92/3 and regulation 1493/93.
United Kingdom	National transport regulations for the radioactivity and a consignment note system for the scrap metal, which is deemed to be waste under national legislation. There is nothing specifically designed for internal shipment of discovered radioactively contaminated loads. As

	an EU member state, the UK is also bound by the EURATOM requirements for the trans-frontier shipment of radioactive waste, but these are rarely applicable to the issue in question.
U.S.A.	There is provision for a "Special Arrangement Agreement" by the IAEA, but no set protocal, procedure, or instructions for accomplishing the task.



Comments on Q D 6	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Czech Republic	No special regulations for contaminated metal scrap, there is a decree on transport of radioactive material based on international rules and recommendations (ADR, RID etc.). SUJB issued the Recommendation. SUJB supervise the transport.
Dominican Republic	The protocol for transports of OIEA
Estonia (ERPC)	Procedures are connected with dangerous goods or radioactive materials transport.
Finland (Customs)	International regulations on transportation and surveillance of radioactive materials apply.
Finland (STUK)	No special protocols in addition to the general transport regulations. STUK categorizes the material for transport, if necessary.
France	Gestion au cas par cas suivant la réglementation applicable aux transports de matières radioactives : les éventuelles autorisations sont délivrées par la DGSNR, Autorité responsable de la sûreté du transport des matières radioactives en France.

DISPOSITIONING

Germany	The radioactive material has to be identified and radiation measured before transport.
Hungary	For international transport: 32/2002.(III.1) Governmental Decree. For domestic transport: Protocol determined case by case.
Indonesia	Government regulation No. 26 year 2002 on Safe Transport of Radioactive Material. BAPETEN Chairman Decree on Safety Provisions for Radioactive Material Transport (04/Ka.BAPETEN/V-99) BAPETEN Chairmen Decree on Safety Requirements of Radioactive Material Transport (05/Ka.BAPETEN/V-2000)
Ireland	Yes, compliance with specific licence conditions, national regulations and the IAEA / ADR, RID. IMO, ICAO regulations on the safe transport of radioactive material.
Italy	"Regulations for the safe transport of Radioactive Material" Safety Standards Series n. ST-1-IAEA-Vienna 1996.
Kazakhstan	Переход собственности происходит после взвешивания партии металлолома и проверки документов, подтверждающих радиоактивную чистоту металлолома до входного радиационного контроля получателя.
Latvia	There are national regulations for transportation of radioactive materials (based on IAEA TSR-1) and regulations for radioactive waste management. There are no specific provisions for contaminated scrap, hence, both regulations mentioned above should be applied.
Lithuania	Order of the Ministry of Environment N° 397 on Radioactive Substances and Radioactive Waste Import, Export, Carrying in Transit and Transport Within the Country and on Return of Spend Sealed Sources, adopted on 13 December 1999.
Luxembourg	Il existe une procédure spécifique entre la France et le Luxembourg pour organiser le retour des cargaisons aux fournisseurs. Cette procédure comporte : - l'information mutuelle des autorités compétentes, - les conditions particulières pour un retour au fournisseur en fonction du risque radiologique, - un annuaire avec les autorités compétentes et les points de contact, - une liste avec les organismes qualifiés pouvant procéder à des contrôles radiologiques.
Netherlands (IMHSPE)	Nuclear Energy Act and regulations based on this act and the ADR.
New Zealand	Not directly.
Norway	ADR/RID, ICAO-IATA and IMDG
Philippines	Protocol is in accordance with CPR Part 4 on Safe Transport of Radioactive Materials which is largely adopted from the IAEA ST-1 Regulations on Safe Transport of Radioactive Materials.
Portugal	All scrap metal contaminated with radioactive substances, when detected, is collected by experts of ITN/DRSN and stored the Interim Storage Facility located at ITN.
Russian Federation (Customs)	Instruction for transporting radioactive sources.
Serbia and	Law on Protection from Ionizing Radiation ("Official Gazette of

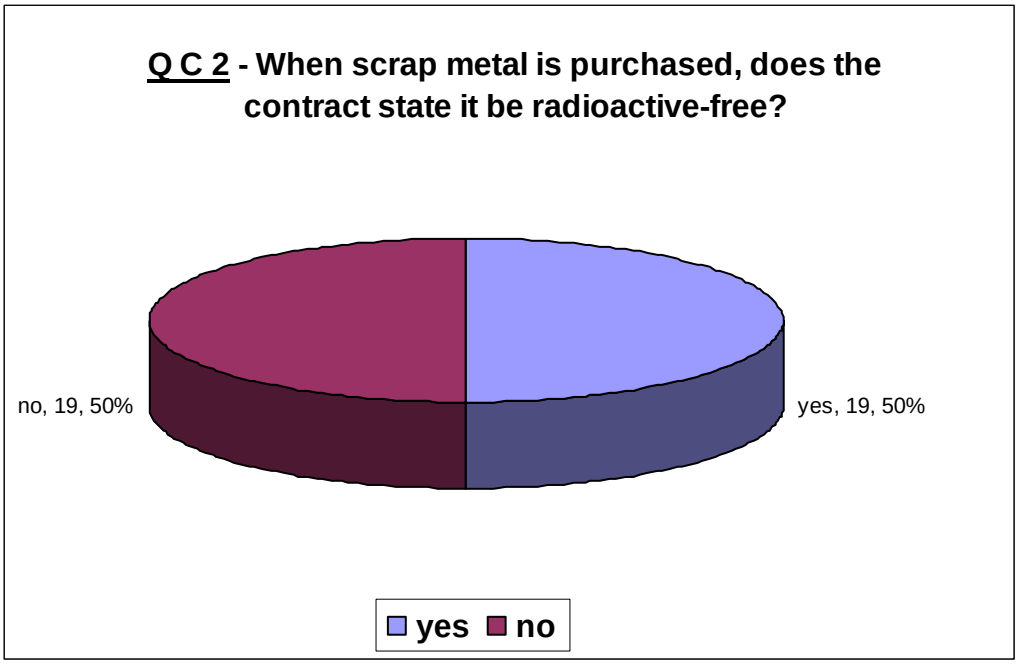
Montenegro	FRY", no. 46/96). Law on Transport of Hazardous substances ("Official Gazette of FRY", no. 27/90, 45/90). Regulation onTtransport of Hazardous substances in road and railway traffic ("Official Gazette of R.Serbia", no. 53/2002).
Sweden	ADR, RID, IMDG-code, ICAO-TI.
Switzerland	Depends on individual case.
Tajikistan	A draft protocol has been prepared and is being approved at present.
United Kingdom	Those described in answer to the previous question.
U.S.A.	Department of Transportation Exemption E-10656 is used to transport the detected material back to the original, without requiring identification of the isotopic composition. Because of the nature of scrap, it is sometimes impossible to safely determine the radionuclide or its quantity/activity at the point of detection. It must sometimes be disposed of using best educated analysis.

<u>Q C 1</u> – At what point does ownership transfer from the seller to the buyer?

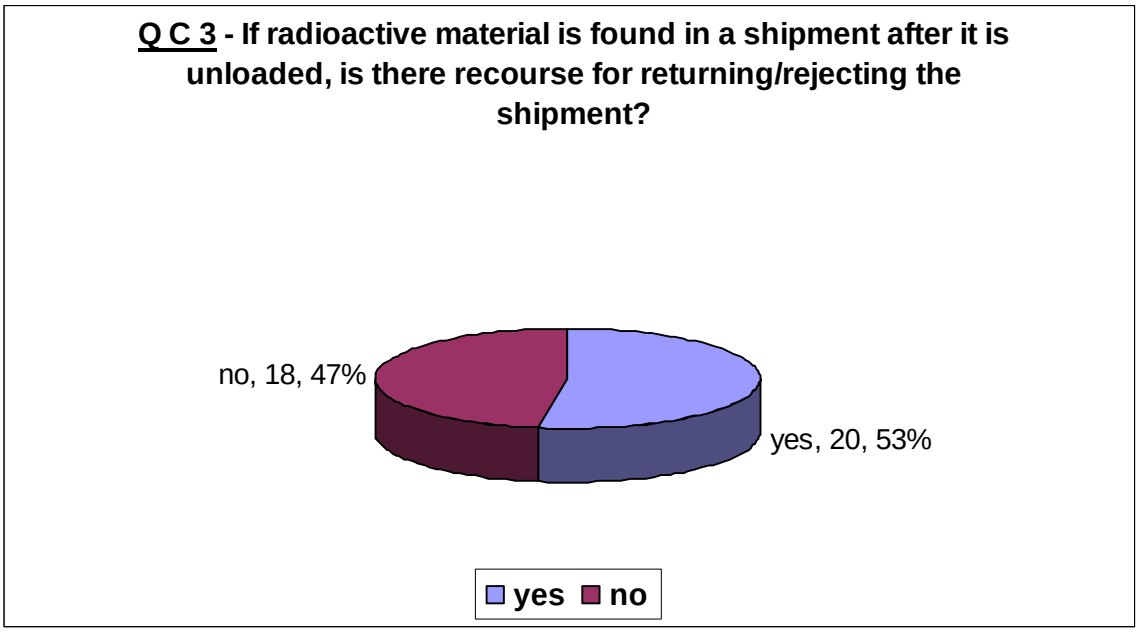
- **25 countries (66 percent of those responding) provided answers to this question.**

Comments on Q C 1	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	At the moment the goods are placed to a warehouse of the buyer
Belgium	Pas de données disponibles.
Bulgaria	Upon delivery, unless the contracting parties have other arrangements.
Croatia	Mostly, at the moment of Customs clearance (although the contract can stipulate otherwise).
Czech Republic	By contract conditions – usually at the shipment taking over.
Dominican Republic	After having obtained authorization from CNAN
Estonia (ERPC)	Upon the signing (concluding) of the purchase contract.
Finland (STUK)	Depends on the contract between the seller and the buyer.
Germany	This is a topic for the metal and scrap working industry
Hungary	It depends on contract.
Ireland	Normally when the buyer has licensed custody of the items.
Latvia	Varies from contract to contract
Lithuania	It depends. The ownership transfer may be transferred either at seller's or at the buyer's premises, depending on conditions given in the contract.
Luxembourg	Normalement au moment où la cargaison entre dans le site industriel, sans qu'il y ait eu un refoulement formel par le destinataire.
Malaysia	At port from scrap metal shipment.
Netherlands (IMHSPE)	Not regulated.
Philippines	On satisfactory receipt of the consignment or shipment.
Poland	According to agreed conditions.
Portugal	No data available.
Romania (CNCAN)	According to the contract, generally at reception.
Russian Federation (CRIISI)	After unloading of scrap metal on the territory of the buyer.
Serbia and Montenegro	After dosimetric measurements of goods for radioactivity.
Slovenia	After control of quality and quantity (as determined in contracts).
Sweden	This is, in practice, up to interpretation of the regulatory documents in court.
Switzerland	At the balance.
Tajikistan	At the start of shipment.

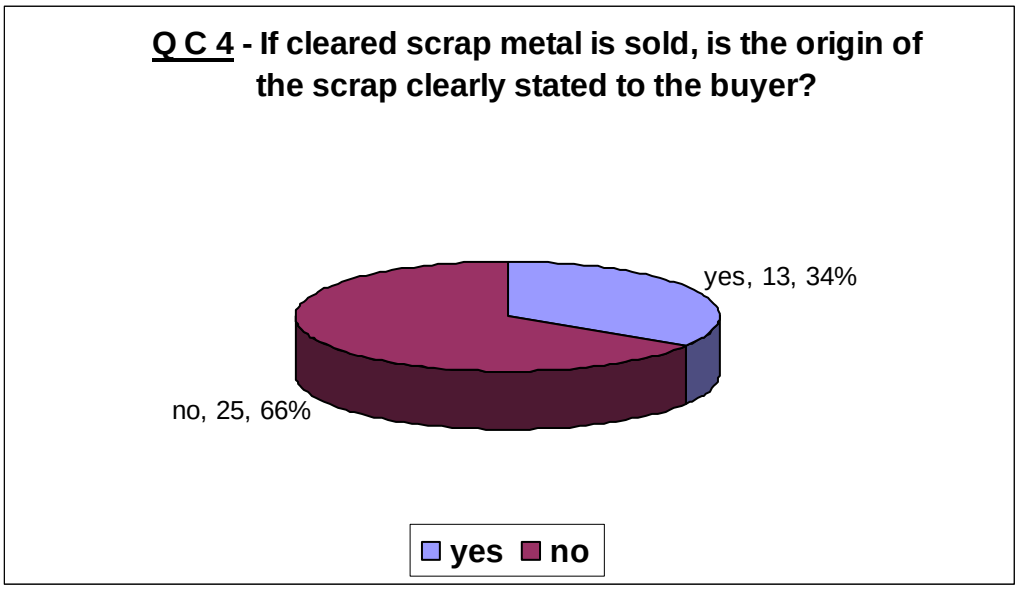
United Kingdom	Varies according to circumstances – may be when shipment reaches dock at UK, or may be only on acceptance at the scrap yard for casual deliveries. Use of third-party brokers is common for imports.
U.S.A.	All contracts state that "Destination grading and weights and acceptance of materials applies." Therefore the buyer can reject the material up until the point where acceptance of the shipment actually occurs and compliance with the specifications in the contract is completed.



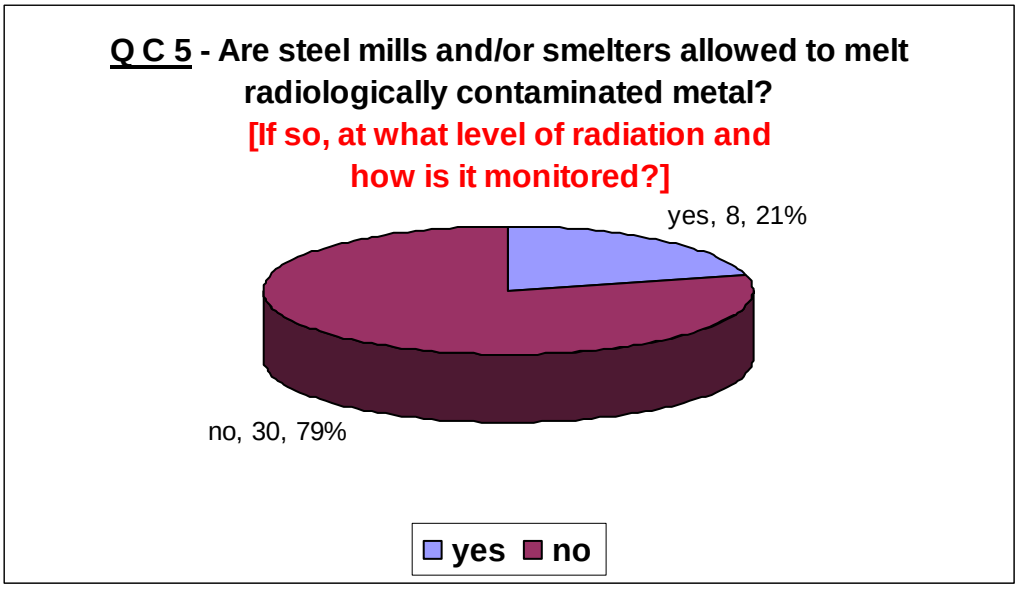
Comments on Q C 2	
Bangladesh	Not yet established.
Finland (STUK)	Usually the buyers require that.
Germany	This is a topic for the metal and scrap working industry; such contracts exist.
Hungary	It depends on contract.
Ireland	This depends on from where it is purchased.
Latvia	Varies from contract to contract
Netherlands (IMHSPE)	Many firms have such obligations in their contracts, but this is not a legal claim.
Philippines	Still being proposed to the appropriate government authority.
Poland	According to agreed conditions.
Portugal	No data available.
Romania (CNCAN)	Depends on the contract.
Slovenia	Yes, in most cases.
United Kingdom	At the top of the supply chain, but not in the lower echelons.



Comments on Q C 3	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Czech Republic	Usually not – dependent on contract condition.
Estonia (Customs)	There is no agreement between Estonia and Russia for returning the shipment.
Finland (STUK)	Not for shipments coming from the Russian Federation.
Germany	This is a topic for the metal and scrap working industry; such clauses exist.
Hungary	In general the provisions of 32/2002.(III.1) Governmental Decree has to be followed.
Latvia	Depends from contract
Luxembourg	En principe oui s'il est possible de déterminer encore de façon précise le fournisseur et si le destinataire peut exclure toute erreur. En pratique, ce cas ne s'est jamais présenté, puisque les métaux sont déchargés après arrivage dans de grands parcs et mélangés avec d'autres arrivages.
Philippines	PNRI is not aware if such a mechanism is in place.
Portugal	No data available.
Romania (CNCAN)	Only if the contract specifies so.
Slovenia	No, such cases may be solved on case-by-case basis and specific circumstances.
United Kingdom	Depends on circumstances – if contractual, or discovered by (for example) Customs return has occurred. Many operators act responsibly to take the items out of circulation rather than return them. (Depends on the infrastructure of the exporting country). Also legal and practical difficulties in doing so.

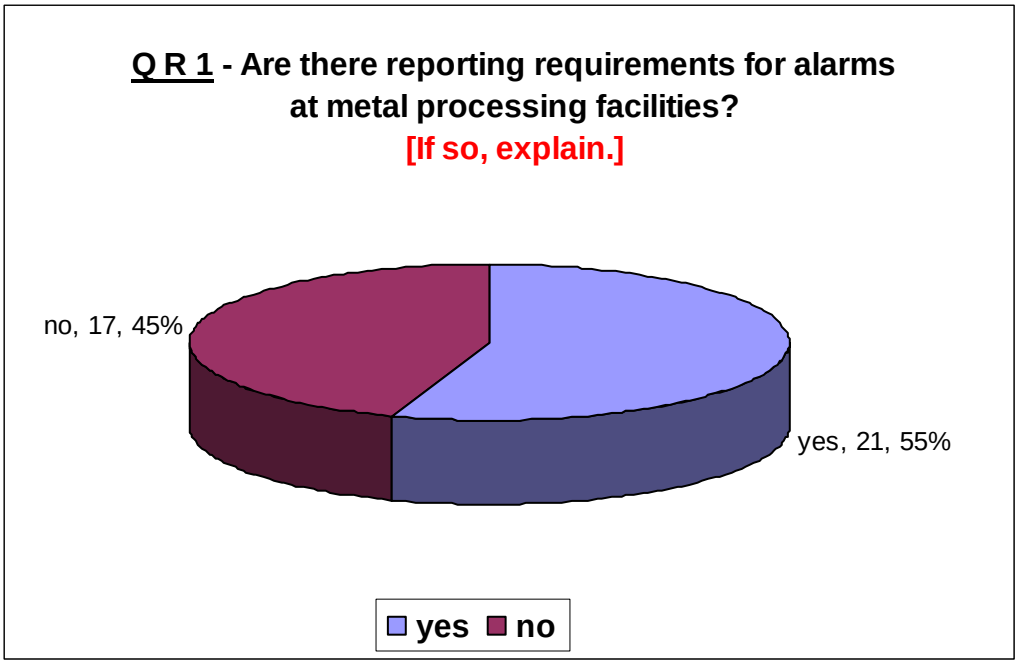


Comments on Q C 4	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Croatia	Only the place of collecting the scrap.
Czech Republic	There is nearly no cleared metal in the Czech Republic.
Estonia (ERPC)	The information of the seller is stated in the contract.
Germany	This is a topic for the metal and scrap working industry.
Hungary	If it is clear, it is not required.
Ireland	The are currently no procedures for clearing scrap metal.
Philippines	PNRI is not aware if this is being ensured.
Poland	According to agreed conditions.
Portugal	No data available.
Romania (CNCAN)	Only if is conditionally cleared.
Slovenia	N/A
Sweden	For the first transfer.
United Kingdom	There is no obligation in law to do so, but it is common practice at the point of sale. However, loads become mixed and so there may be no such statement later on.
U.S.A.	Notification of the original source of the scrap is not required.



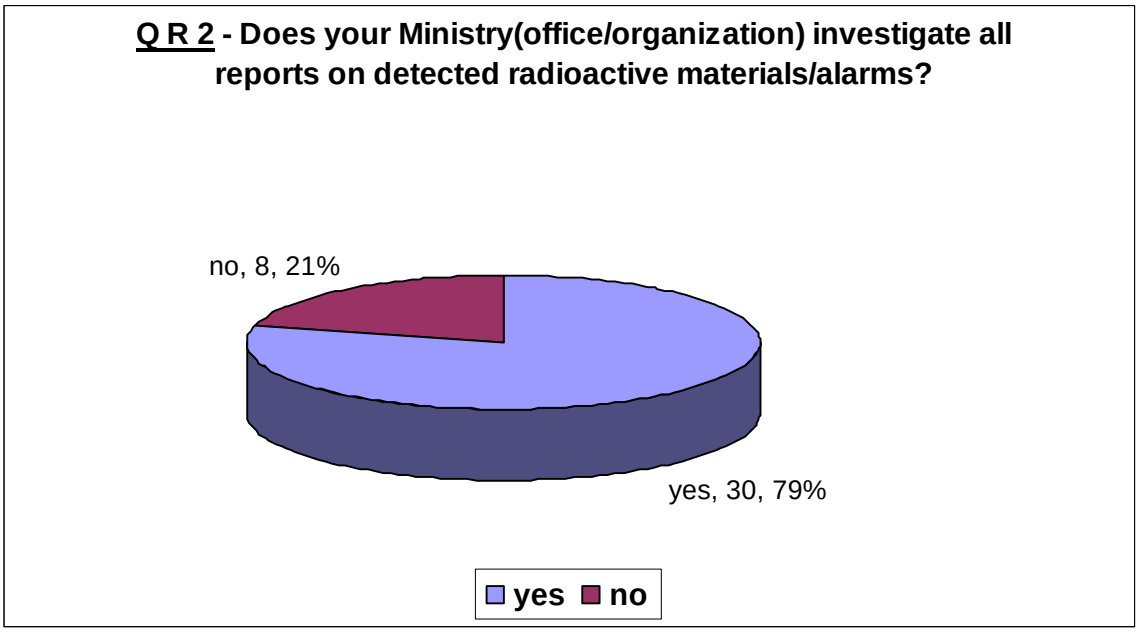
Comments on Q C 5	
Bangladesh	Not yet established.
Finland (STUK)	Material under general clearance level: Yes.Material above clearance level: needs to be licensed.In practice no intentional melting takes place, all the operators want to avoid any radioactivity in their products.
Germany	A licensee is allowed to give material to a melting plant after clearance. The German Radiation ordinance contains specific clearance values for the recycling of metals.
Hungary	They are not allowed to do without licence. We have not issued that kind of licence.
Ireland	No. When the one steel mill in Ireland was operational anything above natural background was segregated and placed in secure storage.
Kazakhstan	На переплавку поступает металлолом при условии, что мощность эквивалентной дозы излучения от партии металлолома на расстоянии 10 см не превышает 0,3 мкЗв/час над натуральным фоном в месте измерения. Отчетность
Latvia	Levels are defined in radioactive waste management regulations – they had been developed based on EU and IAEA recommendations. Monitoring practices applied are the same as for scrap metal.
Luxembourg	Les industries ne sont pas autorisées à traiter du métal contaminé. Elles peuvent le conditionner pour le stockage intérimaire avant son transfert vers une entreprise autorisée à effectuer un tel traitement.
Malaysia	If we found the scrap metal was contaminated at the main entrance gate of Amsteel, we will reject all the balance of contaminated scrap metal in the shipment and ship it out of the port to the sea.
Philippines	Not yet discussed at the present time.
Slovenia	Not above the clearance levels for radioactive waste.
Switzerland	Only possible with a license and under control. The level is usually limited at 10 nSv/h above background.

United Kingdom	There is not a UK policy to allow this. For most smelters, commercial pressures dictate that no radioactivity is present in the melt / product.
U.S.A.	Some U.S. states have NORM and TENORM regulations that exempt materials below certain levels. Otherwise, there is only one licensed mill in the U.S. that is allowed to melt radiologically contaminated material. This facility only melts about 5,000 tons of this material per year.

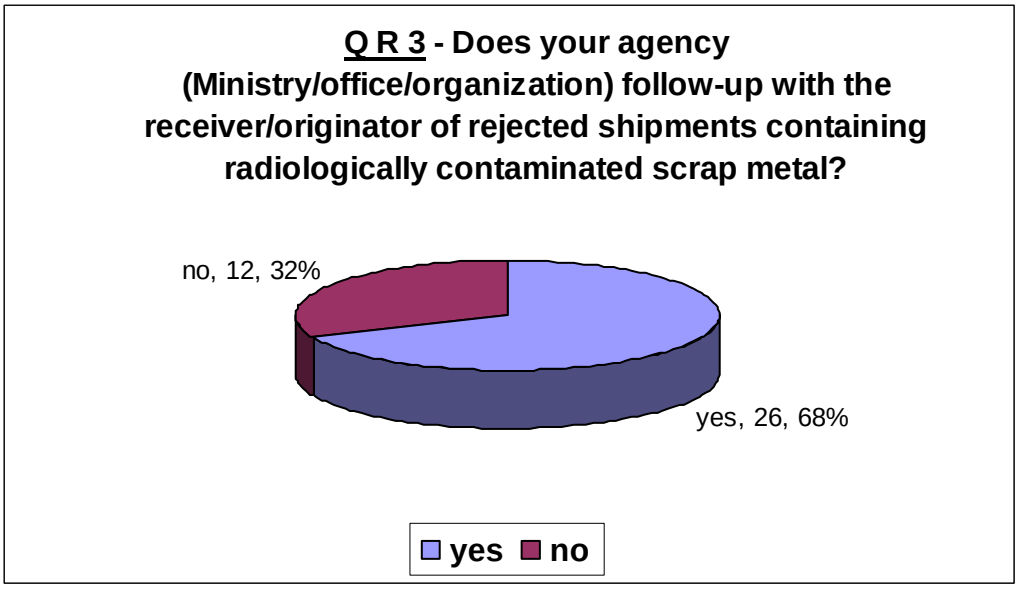


Comments on Q R 1	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Bulgaria	To the responsible control bodies not later then 24 hours after detection of radioactivity in the scrap.
Croatia	Yes, in such case, the metal processing facility is obliged to report the alarm to the inspector in Ministry of Health and Social Welfare.
Czech Republic	By SUJB Recommendation: Any such alarm is to be reported to SUJB (to its Regional centers.
Denmark	National Institute of Radiation Hygiene (NIRH) must be informed of any findings of radioactive material.
Dominican Republic	Just to inform CNAN immediately
Estonia (ERPC)	We have guidelines issued by us according to which we operate. The guidelines are in accordance with the Radiation Act.
Germany	Anyone who finds radioactive material has to communicate this to the competent authority.
Hungary	The corresponding notification channel for the response scenario are defined in 17/1996.(I.31) Governmental Decree.
Ireland	Yes, in the past while Irish Ispat was operational there was a reporting requirement Yes, there was a reporting requirement. Any level above background that was not determined to be a false alarm was reported to the Regulatory Service of the RPII.
Kazakhstan	В соответствии с условиями действия лицензии, выданной предприятию на право обращения с ИИИ, КАЭ оповещается о сигналах тревоги в течение 24 часов, также как и другие надзорные органы согласно действующей в РК нормативной правовой документации
Latvia	The Framework law on radiation safety and nuclear safety obliges to report any incident and accident with radiation sources.
Lithuania	Yes. The Radiation Protection Centre and other state authorities will

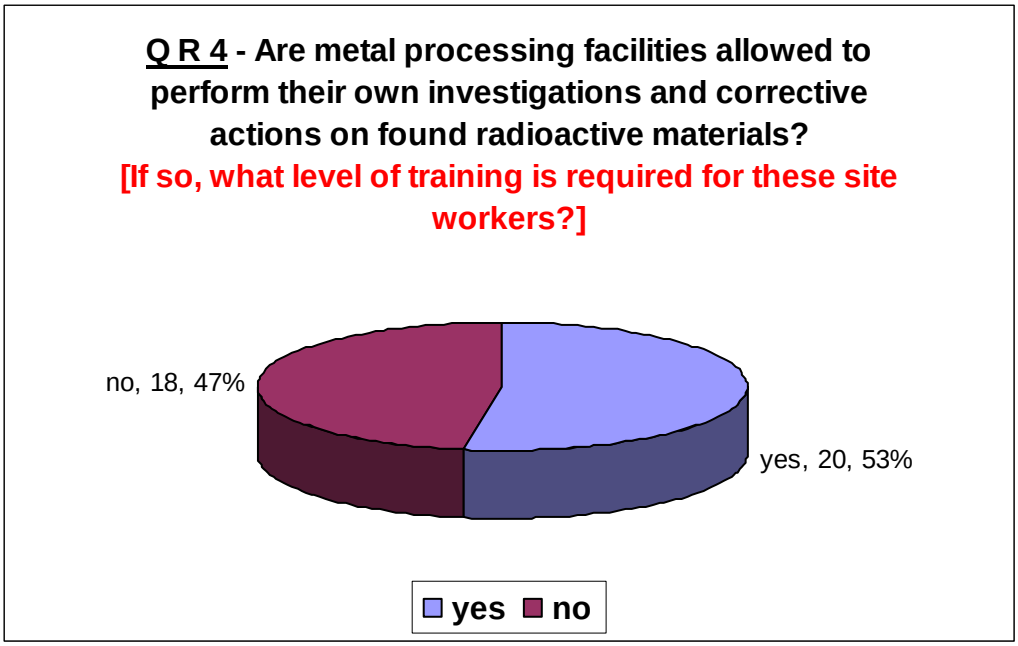
	be informed without any delay.
Luxembourg	Voir explications ci-dessus.
Malaysia	Radiation Protection Officer will contact Atomic Energy Licensing Board.
Netherlands (IMHSPE)	Since 2003 firms who trade in scrap above a certain level are obliged to use equipment tot measure radioactive substances in scrap. The firms need to register the alarms and have to arrange financial securities and have a radiation specialist working for the firm. Furthermore, in case of alarms they need to report this to the Inspectorate.
New Zealand	Not specifically alarms. There are requirements to report to NRL certain types of radiation incidents.
Poland	None has been established yet.
Portugal	Reporting of services of appropriate region governor and competent authority.
Russian Federation (CRIISI)	Reporting requirements are given in the medical-sanitary regulations.
Slovenia	Formally not. But in all cases, the SNSA is informed timely.
Switzerland	Report to regulatory authority and/or licensing authority.
Tajikistan	There has been no such reporting practice. It will be taken into account in the future.
Turkey	After confirming the alarm and localizing the source both the private companies and border gates should inform TAEA. Private companies inform TAEA according to their response plan and border gates inform TAEA according to the procedures mentioned in the attachment to this questionnaire.
United Kingdom	There are safety requirements to notify the safety regulator (HSE) if an employer discovers radioactivity. The industry is encouraged to notify the main environmental regulator. Reporting requirements otherwise a determined locally.
U.S.A.	There are currently no regulatory requirements in most cases to report detected radioactive materials.



Comments on Q R 2	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Estonia (Customs)	There are monthly reports from Customs border monitors and data about radiation alarms exceeding 0,3 µSv/h. Estonian Customs has the right to investigate cases with illegal radioactive sources.
Germany	In Germany this is the responsibility of the States (Länder). The federal ministry is supervising the fulfillment of the tasks of the States.
Hungary	The organizations (including HAGA) are listed in 17/1996.(I.31) Governmental Decree.
Ireland	Yes, the RPII did and would still do so if the presence of radioactive material in a scrap-yard was detected/suspected.
Italy	They are considered only in internal procedure.
Lithuania	The Radiation Protection Centre investigates all reports, the Lithuanian Criminal Police Bureau investigates only reports which can be connected with criminal act.
Luxembourg	La Division de la Radioprotection procède toujours à des contrôles sur place en cas de déclenchement d'une alerte et dresse un rapport (voir explications ci-dessus).
New Zealand	When aware.
Philippines	If called upon, we would , but we have not received any reports from unlicensed institutions
United Kingdom	Not all. We assess all reports of such incidents, but only investigate (normally jointly with the safety regulator) finds of significance.

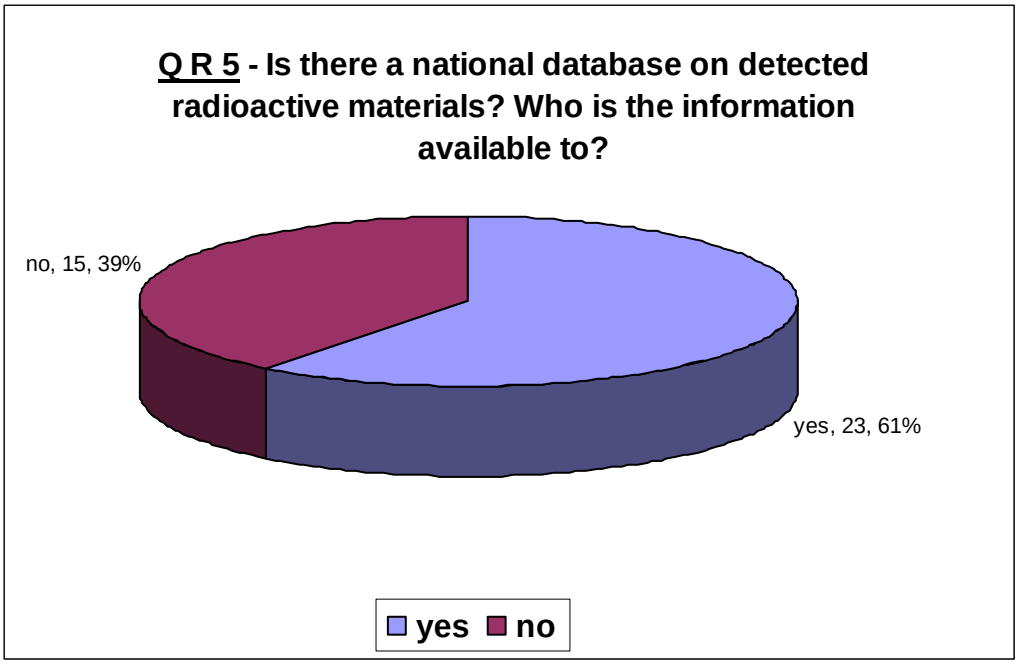


Comments on Q R 3	
Bangladesh	Not applicable in relation with scrap metal monitoring.
Estonia (Customs)	Estonian Customs has a right to contact with customs of other countries to solve customs violations.
Estonia (ERPC)	We inform and reach the agreement on the following procedures concerning the radioactive source.
Hungary	Within the country such a shipment will remain under the control of the responsible agencies.
Ireland	Irish Ispat Ltd did and the RPII assisted if required.
Philippines	No reported incidents. PNRI can and would follow up if such incidents are reported.
United Kingdom	Not in all cases, and normally only with the receiver. We use the INTERPOL ECO-MESSAGE to communicate with regulators in the country of origin, but only for the most significant cases. In general, follow-up is a commercial issue.
U.S.A.	This follow-up usually occurs, but is not always required.



Comments on Q R 4	
Azerbaijan	The required knowledge in radiation safety and use of radioactive materials.
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belgium	Il n'existe pas de réglementation. Nous recommandons de faire appel à un appel à un organisme agréé si le débit de dose sur la paroi du véhicule est < 5µSv/h.
Czech Republic	It is a licensed activity.
Finland (STUK)	Internal training.
Germany	The workers need special knowledge in radiation protection.
Hungary	First of all, they have to support the investigation of the responsible organizations listed in 17/1996.(I.31) … Governmental Decree. In addition they are allowed to perform their own investigation and corrective actions.
Indonesia	It has not been regulated.
Ireland	Yes. The person nominated was known as the Radiation Protection Officer and would have undertaken a suitable four day training course.
Kazakhstan	Проводят с участием компетентных надзорных органов.
Latvia	They have to perform investigations aimed to establish whether the monitoring was performed in-correctly or a conformity statement was made without monitoring. They have to notify the Radiation Safety Centre and Radioactive waste management agency without delay.
Luxembourg	Les industries disposant d'une personne qualifiée en radioprotection peuvent effectuer leurs propres contrôles et prendre certaines dispositions. Ces dispositions doivent cependant être validées par l'autorité compétente.
Malaysia	Once the load was found contaminated, the load will be isolated at a

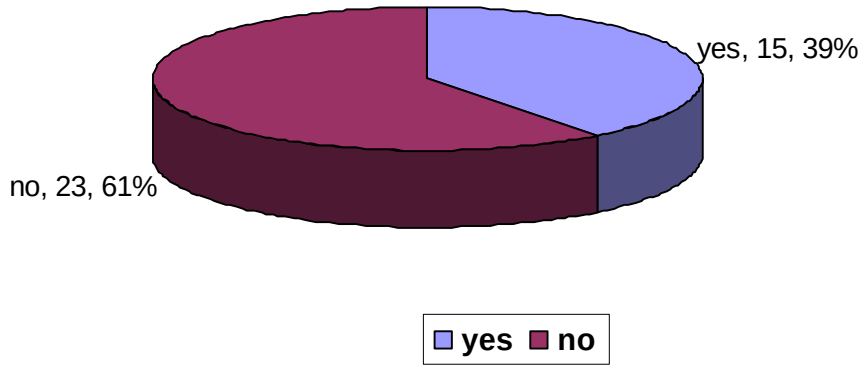
	isolated location until further investigation by officer.
New Zealand	Licensee is responsible for safe care.
Philippines	No information as of this date . PNRI is just organizing awareness training for scrap metal dealers. Participation is still voluntary as to date.
Poland	Radiation protection officers – national level.
Romania (CNCAN)	The processing facility shall use authorized organization for performing investigation.
Slovenia	They perform the investigation only to certain extent. The formal investigation is performed by the SNSA, police and Customs, as appropriate.
Sweden	In consultation with the Radiation Protection Authority.
Switzerland	Training course, given by the regulatory authority.
Tajikistan	Yes, if the company is interested in its own investigation. However, in practice investigations are performed by experts of Sanitary and Epidemiology Service, Ministry for Emergency and Civil Defence, etc.
Turkey	Radiation protection, response plan tactics and equipment usage.
United Kingdom	The employer must meet the requirements of national radiation safety regarding training- there must be a competent supervisor available to advise the site workers.
U.S.A.	This investigation may be allowed by the State Radiation Official if the facility has the resources and ability. The facility also may be required to have a radiation consultant rework the shipments. There is usually no required training schedule other than basic awareness and familiarization with the survey meter. Some site workers may have basic radiation awareness and familiarity with hand-held radiation meters.



Comments on Q R 5	
Azerbaijan	Law-enforcement agencies.
Bangladesh	Not applicable in relation with scrap metal monitoring.
Belarus	Customs Committee, Department for Supervision of Industrial and Nuclear Safety of the Ministry for Emergencies
Bulgaria	None Nuclear Regulatory Agency and other Control bodies.
Croatia	Yes, it is available to any relevant governmental service.
Czech Republic	Custom database available to The Custom Office and to SUJB. The SUJB has a database of all such events (not only from borders).
Dominican Republic	To the regulating authorities
Estonia (Customs)	Yes, it is and it is available for the responsible Customs officers.
Germany	Information is collected and published each year for the German parliament.
Hungary	It is available to the related/responsible organizations.
Ireland	Yes. It is held by the Regulatory Service of the RPII
Italy	It is in progress.
Latvia	Cases with sealed sources are reported to IAEA database and also registered in database for radioactive waste disposal if cargo was not send back to origin, but waste are disposed within country
Lithuania	The database is in the Radiation Protection Centre. The information is available to State competent authorities.
Luxembourg	Il existe un registre national avec tous les incidents reportés. Il s'agit d'un registre interne des autorités compétentes seulement accessible à cette autorité.
Malaysia	Atomic Energy Licensing Board (Malaysia).
Netherlands (IMHSPE)	The Inspectorate has a database which contains all alarms (200 per year) which are reported by scrap companies.
New Zealand	NRL maintains an incident database that records details of known

	incidents.
Philippines	None.
Poland	NAEA.
Portugal	No database exists. There are only reports when ITN experts are requested.
Romania (CNCAN)	Only for orphan sources. The information is available to regulatory body (CNCAN) staff and to other authorities.
Serbia and Montenegro	Ministry for Protection of Natural Resources and Environment
Slovenia	All reported cases are filed among others also at the SNSA, which is also the contact point for the IAEA Illicit Trafficking Database.
Sweden	Reported events are registered.
Tajikistan	Not established yet.
Turkey	IAEA and related National Authorities.
United Kingdom	Some incidents are recorded by the regulators, but there is no systematic scheme
U.S.A.	The U.S. Nuclear Regulatory Commission maintains the Nuclear Materials Events Database, which lists lost, stolen, abandoned and found discrete sealed sources. The information is reported to this database by the State Radiation Official and it is only available to certain government officials.

Q R 6 - Are metal processing facilities allowed to accumulate detected radioactive materials on-site? If so, what are the restrictions?



Comments on Q R 6	
Bangladesh	Not applicable.
Belgium	Un stockage temporaire est toléré dans l'attente de l'intervention d'un organisme agréé.
Czech Republic	Some of them – by a license of the SÚJB. Inspected by SUJB.
Finland (STUK)	The storage shall fulfill the requirements given by STUK.

REPORTING

France	Sauf en cas d'autorisation spécifique au titre du contrôle des installations à risque pour détention de radioactivité, cette accumulation n'est pas permise.
Hungary	It is not allowed to accumulate them (without licence) on-site. They have to be transported to the designated laboratory and – following the investigation – to the repository or final depository.
Ireland	In the absence of a designated storage facility, detected materials are normally held under licence in the premises where they were detected. The custodian of the premises must comply with specific conditions of storage, labeling, monitoring, security arrangements etc as set out in the licence. Irish Ispat Ltd is now in liquidation and the liquidator is currently making arrangements to return all isolated radioactive materials to another country.
Italy	The Regulatory Body only authorizes the operation of facilities for storage of big amount of radioactive material managed by specialized companies.
Latvia	Only temporary short-term storage to prepare appropriate transport package.
Lithuania	Only for the period before they are taken by the Radioactive Waste Management Agency for transfer to interim storage facility.
Luxembourg	Dans une certaine mesure, les usines peuvent stocker de façon intérimaire des matériaux radioactifs notamment du NORM ou TENORM détectés dans des métaux recyclés avant leur transfert vers une installation autorisée à l'étranger. Ce stockage radioactif peut seulement se faire en un endroit autorisé, inaccessible à toute personne non autorisée et ne présentant pas de danger pour des travailleurs ou pour l'environnement.
New Zealand	Rare case-by-case basis, would be only for a short time.
Philippines	No national regulations on this at the present time.
Poland	According to decision of the competent authority.
Russian Federation (CRIISI)	The metallurgical works are allowed to accumulate detected radioactive materials on-site in special places of temporary storage for no longer than one year.
Sweden	Defined case by case.
Switzerland	According to the individual license.
Turkey	In case of contaminated metal, private companies have a special place for accumulation and periodically TAEA transport these contaminated materials from the site. But if a radioactive source is detected, TAEA experts respond to the incident immediately.
United Kingdom	This is done where appropriate in recognition of the transport component of the costs of disposal. However, this facility is not automatically extended to all operators, so that it is not provided where there may be cause for concern by the regulators. The restrictions vary –normally not more than 3 months and never more than 2 years.
U.S.A.	Some U.S. States allow facilities to store found radioactive materials for a specified period of time. All material must be properly stored and labeled. Sealed sources must be disposed of properly, in accordance with the State's instructions.

EXPERIENCE

<u>Q E 1</u> - If you have ongoing scrap metal monitoring programs, are there any lessons learned to share with other countries?
Please describe.

- **24 countries (63 percent of those responding) provided additional experience-related information in response to this question.**

Comments on Q E 1	
Bangladesh	We are planning to start scrap metal monitoring programssoon.
Czech Republic	Scrap metal monitoring program of metal processing facilities is based on threats of financial losses. This is why it functions. Main metal melting companies are equipped with portal monitors and/or hand-held devices. They also monitor their production. Some of scrap metal collectors are equipped with portal monitors and/or hand-held devices as well. The threat of possible financial losses is the best regulator. It creates the pressure to scrap metal collectors to buy radiation detectors.
Estonia (Customs)	Estonian Customs is not aware of any ongoing scrap metal monitoring program. There were a couple of cases, but they happened 7-8 years ago. Lesson is that moving full of scrap metal railway wagon can shield from monitor some low radioactive metal pieces, which can be discovered only by reloading, using radiation pagers.
Finland (STUK)	For commercial reasons, each major facility in Finland dealing with scrap metal has considered necessary to take measures against the risk of radioactive materials in scrap metals. These actions go beyond the recommendations and official requirements on the radiation safety. Thus any special regulatory framework for scrap monitoring has not been seen necessary.
France	Toutes les questions n'ont pas été traitées car plusieurs relèvent d'autres services compétents et, compte tenu du délai imparti, il n'a pas été possible de coordonner toutes les réponses. Les autres services potentiellement concernés en France sont : - Les douanes (contrôles à l'entrée du pays) - La Direction de la prévention des pollutions et des risques du Ministère de l'écologie et du développement durable, en charge du contrôle des installations à risque, et en particulier des recycleurs de métaux - La Direction de l'énergie et des matières premières du Ministère de l'économie, des finances et de l'industrie, en charge de l'application des directives européennes sur le contrôle du transfert de matériaux et de déchets radioactifs entre les pays de l'union.
Indonesia	None.
Ireland	Not applicable
Italy	Our organization is not charged to carry on specific scrap metal

	monitoring programs. But following information got from radioactive control companies, we know that the main issue in this field is related to the availability of very effective detection systems using high technology instruments.
Kazakhstan	В Комитете по атомной энергетике нет специальной Программы по контролю за металлоломом. Предприятия, имеющие государственную лицензию по обращению С ИИИ, представляют в КАЭ ежегодную информацию о случаях обнаружения радиоактивно загрязненного металлолома и о принятых мерах по его передаче на длительное хранение (захоронение).
Latvia	Material should be monitored at the place of origin by representative from buyer, there shall be provisions in contracts to allow such procedure. There should be arrangements among national regulatory authorities in field of radiation safety and also among national radioactive waste management operators (agencies) to coordinate activities related to export/import if orphaned radiation sources or contaminated material is found. Penalties and fees should be minimized if all parties involved have monitoring systems and try to control situation to prevent non-reporting and/or non legal disposal into environment.
Lithuania	There was a large inspection programme carried out by the Radiation Protection Centre in 2002-2003 with the aim to check and evaluate how the metal scrap yards are prepared to detect the radioactive contamination in scrap metal. Training courses in radiation protection are planned to be held in 2004 for scrap metal yards employees in Lithuania (organized by the Radiation Protection Centre). Draft order of the Director of the Radiation Protection Centre on Procedures of control of radioactive contamination of and metal products in scrap yards and reprocessing plants exist. It describes how to deal with radiation, if it is detected in the scrap metal.
Luxembourg	During incoming, no proper procedure was set up. Therefore, the monitoring was found not to be effective. After we established a procedure and programme to monitor and maintain we found the equipment we effectively utilize. On the other hand, our customer was found to be more confident in our product that is clearly free of any radioactive contamination.
Netherlands (Customs)	Annexes attached (not available on web site)
Netherlands (IMHSPE)	The Dutch Inspectorate of the Ministry of Housing, Spatial Planning and Environment enforces the Nuclear Energy Act in general and legislation on measuring equipment for scrap companies in particular. Actions are taken on the reports of companies (about 200 times per year) in which they inform the Inspectorate that they have become in possession of radioactive scrap. In such cases the Inspectorate obliges the firms to take measures (enforcement) to have the radioactive contamination separated from the scrap. Specialized firms are doing this job, paid by the scrap company. Furthermore, the Inspectorate inspects scrap companies (at the

	moment 50 to 100 companies per year) to ensure that these companies comply with the legislation on detection equipment. At this moment a lot of Dutch companies, about a hundred, have such measuring equipment, but other obligations, concerning registration and financial securities are badly complied with.
New Zealand	Three scrap yards in different main centres within New Zealand have installed radiation detection equipment. Detection of radioactive material when notified to NRL is treated by NRL as an incident. Lessons learned from these incidents would be worth sharing.
Norway	In Norway the scrap monitoring is done by the operators of each melting facility. Potential economical consequences of radioactive contaminating of production facilities and products caused by the melting of a source seem to serve as a good motivation to invest in monitoring equipment. If scrap metal proves to be contaminated the load is not accepted and the ship has to return to the place of origin.
Philippines	Current efforts involve the organization of training and awareness programs for metal scrap dealers and other related industries. Close coordination with relevant authorities, such as the Department of Trade and Industry, is being actively pursued to establish rules and guidelines for smelters/exporters in the case where radioactive materials or radioactively contaminated metals are detected. Memorandum of Understanding and /or Agreements have to be established as generally these industries are not subject to the regulatory control of the PNRI which is the regulatory body for radioactive material use and application in the Philippines.
Poland	There is a need for international recommendations on uniform radiological criteria concerning scrap metal monitoring (e.g. two times background level, gamma dose rate level – distance).
Portugal	Nº of radiological contaminated scrap metal occurrences registered by ITN: 2003 ……10 2002 ……..8 2001……...1 2000……...1
Romania (CNCAN)	In present, based of the provisions of the Nuclear Law and Radiological Safety Fundamentals Norms, CNCAN is preparing the regulation (norms) regarding the control of collection, processing, import and export of scrap metals. The above regulation will include the requirements for the customs and processing facilities perform control of scrap metals.
Russian Federation (CRIISI)	The experiences in training the personnel of metallurgical works in radiation safety methods is accumulated.
Sweden	A risk analysis has been conducted.
Turkey	Attached files: Instruction_border_gate.doc Notification_form_border_gate.doc [Not available on website]
United Kingdom	The UK Government announced in April 2003 that screening was to be introduced at points of entry to detect illicit importations of radioactive materials - and that programme of work is currently being implemented.

EXPERIENCE

U.S.A.	The inclusion of radioactive material in scrap metal shipments is an international problem. Border and facility monitoring systems can make a difference. In the U.S. alone there have been more than 5,000 reported detections of radioactive material in scrap metal during the period 1982 – 2001. This number is considered low because not all detections are reported by the facilities. By the time the scrap reaches the metal processing facility the origin of the material is not known due to the number of times the ownership of the material has changed. It may also be difficult to determine if the material is from national or international sources. Therefore it is critical to have radiation monitoring at all scrap yards and metal melting facilities, as well as international borders. It is known that scrap metal can shield the radioactive material, depending on the location of the material in the load. Tests conducted in the U.S. have proven that a radioactive source may be undetectable if it is located greater than 0.6 meters inside the shipment, due to the shielding of the truck walls and the scrap. Therefore, the smaller you can make the mass you are monitoring, the greater the chance of detection. This is the logic behind the pilot radiation monitoring at U.S. ports of entry. There is no way to adequately monitor an entire shipload of scrap metal. However, by monitoring each grapple load, the chance of detecting radioactive material is greatly enhanced. This system can be used for both imported and exported scrap metal. This system has been shown to be very effective at detecting radioactive material, and is described in the U. S. report to the UNECE entitled "A Pilot Study to Detect Radioactive Materials in Imported Scrap Metal at Seaports". A copy of this report will be made available from the UNECE in April, 2004. The international community needs to formulate approaches which will eliminate or reduce the release of radioactive material into the scrap metal supply.
Vietnam	At the present times Vietnam is now going to develop a regulation for controlling "orphan sources" and radiologically contaminated scrap metal. The relevant information and regulations from other agencies are now being collected. But there is not so much information available so I cannot fill all the above-mentioned questions. I hope that in the future we will have more information to be given to you. I also hope that all information from the Int.Expert Group Meeting on Monitoring of Radiologically Contaminated Scrap metal will very useful for us in developing regulations. So I would like to ask you to send me documents of the Meetings if it is possible