



R2:2013 Transition Training



R2:2008

R2:2013



Responsible
Recycling



Responsible Recycling vs. E-waste Dumping

Photo by Social Action Network (SAN), © 2009



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Responsible Recycling – R2



Scott Jones
Environmental Specialist

- Welcome From PJR Headquarters:
 - PJR
 - 755 W. Big Beaver Rd, Suite 1340
 - Troy, MI 48084
 - Phone: 1-800-800-7910
 - Email: PJR@PJR.com
- Audience for today's meeting
- Introduction of speakers
- Today's Session (1 Hour)
 - Informational Standard Overview
 - Benefits of Certification
 - About R2:2013
 - R2 Breakdown
 - Issuance of Certification
 - Certification Process
 - Questions





Responsible Recycling – R2



PJR is accredited to grant certification for :

- ISO 9001
- ISO 14001
- AS 9100, 9110 & 9120
- ISO/TS 16949
- **Responsible Recycling-R2**
- RIOS
- ISO 13485
- SQF
- BRC
- TL 9000
- OHSAS 18001
- ISO 27001
- RCMS® AND RC14001
- ISO 22000
- BS 25999
- BA 9000
- HAACP Compliance
- FSSC 22000

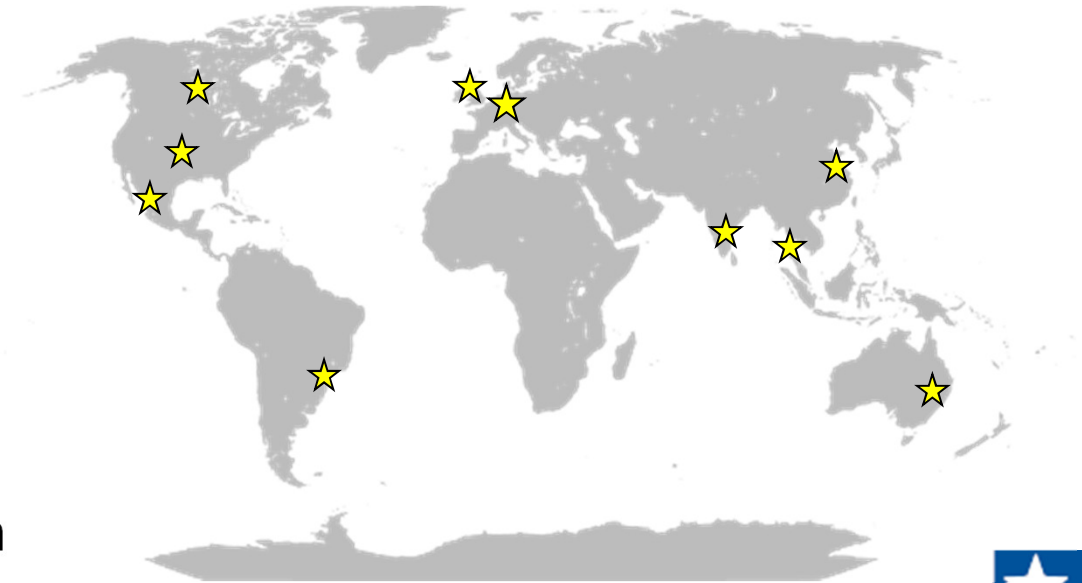




PJR is the #1 R2 Registrar



- PJR is the #1 R2 registrar in the world.
- Countries where PJR has certified companies to R2:
 - Australia
 - Canada
 - China
 - Brazil
 - India
 - Malaysia
 - Thailand
 - Mexico
 - Ireland
 - Singapore
 - European Union
 - United States





Benefits of Certification



- Key benefits of R2 certification and implementation:
 - Promotes safe and effective recovery and reuse of electronic equipment
 - Guards downstream control of the recycling chain
 - Minimizes environmental and public health risks
 - Demonstrates compliance with domestic and international laws
 - Minimizes liability and encourages reduced insurance costs for recyclers
 - Assists original equipment manufacturers (OEM's) with due diligence for their end-of-life electronics
 - Instills public confidence through certified third party review





About R2:2013



- To clarify requirements of the R2:2008 Practices, improve the readability and understanding of the standard, provide additional best practices, and enhance the quality of certification.
- R2:2013 is effective as of July 1, 2013.
- R2:2013 is not intended to be an EH&S Management System by itself.
- R2:2013 requires a company to be certified to ISO 14001 and OHSAS 18001 or to RIOS.





New R2 Requirements



1. Environmental, Health and Safety Management System
2. Reuse, Recover ... Hierarchy of Responsible Management Strategies
3. Legal Requirements
4. On-Site Environment, Health and Safety
5. Focus Materials
6. Reusable Equipment and Components
7. Tracking Throughput
8. Data Destruction
9. Storage
10. Security
11. Insurance, Closure Plan and Financial Responsibility
12. Transport
13. **Documentation** and Recordkeeping





Provision #1

Environmental, Health & Safety Management System



- 1(a) An R2:2013 electronics recycler shall document the scope of activities....including any allowances to the R2:2013 standard expressly listed in the R2 Code of Practices...
- Broker Allowance
 - Collector Allowance
 - Campus Allowance
 - Co-Location Allowance
 - FM Processor Allowance
 - Provision 8 for data destruction will not apply
 - Provision 6 for reuse will not apply
- 1(b) An R2:2013 electronics recycler shall be certified, throughout the duration of its R2 certification, to one or more EHS management system standards.





Provision #2

"Reuse, Recover..."

Hierarchy of Responsible Management Strategies



- 2(a)(1) Reuse – An R2:2013 electronics recycler shall take all practical steps to direct tested equipment and components to reuse and resale, and to direct equipment capable of repair to qualified refurbishers, unless a customer directs otherwise (See Provision 6 for further discussion).
- 2(a)(1) Energy Recovery or Land Disposal – An R2:2013 electronics recycler shall not direct material to incineration, energy recovery, or land disposal facilities unless no reuse or recycling options are viable.





Provision #3 Legal Requirements



- 3(a) An R2:2013 electronics recycler shall develop **a legal compliance plan** to maintain full compliance with EHS and data security legal requirements applicable to its operations...including **import/export** requirements.
- 3(a)(1) Facility Compliance: The plan shall identify and document the EHS and **data security legal requirements** that cover the recycler's operations.
- 3(a)(2) Legality of **import/export** must be verified for all OECD and non-OECD countries.
- 3(a)(3) ...It shall also **periodically audit its compliance** with legal requirements, and take corrective action to address any issues of non-compliance.



Provision #4

On-Site Environmental, Health & Safety



- 4(b) An R2:2013 electronics recycler shall adhere to **good housekeeping standards**, including keeping all work and storage areas clean and orderly. Housekeeping for all areas of the facility shall be **planned, regularly implemented, and monitored**.
- 4(c) ...shall conduct on an ongoing basis a **hazards identification and assessment** of OHS&E risks. Risks could include emissions of and/or exposure to substances, noise, ergonomic factors, thermal stress, substandard machine guarding, cuts and abrasions, etc. Hazards identification and assessment shall be captured in **writing**.
- 4(c) R2:2013 electronics recyclers shall **prepare, periodically test, and update**, as appropriate and necessary, an emergency plan(s) for responding to the identified emergency situations and exceptional circumstances to protect workers (subject to Section (f)), the public, and the environment.





Provision #5 R2 Focus Materials



The following are considered “Focus Materials”:

- CRT vendors (Monitors, TVs, equipment)
- Battery vendors
- Mercury Containing Device vendors
(switches/relays, bulbs, laptops, LCD displays, TVs)
- PCBs vendors
- Circuit Board vendors
 - This includes materials such as keyboards, mice, cell phones, power supplies, etc. that contain a circuit board.





Provision #5 R2 Focus Materials



- 5(c) An R2:2013 electronics recycler shall send removed FMs to processing, recovery, or treatment facilities that meet all applicable regulatory requirements... This Shall include:
- (1) For items containing **mercury** – mercury retorting or other legal methods, excluding incineration,
 - (2) For **circuit boards** – removal of batteries and mercury, and processing for metals recovery, and
 - (3) For **items containing polychlorinated biphenyls (PCBs)** – technology specifically designed for PCB destruction, occurring in facilities that meet all applicable regulatory requirements, and that use technology designed to safely and effectively manage equipment or components containing these FMs



Provision #5 R2 Focus Materials



Selection and Ongoing Due Diligence of DSVs
Vendors for FMs.

5(e)(2) Adhere to a **documented system to manage EHS risks and legal requirements**. The management system shall include at a minimum the components of Provision 3 (Legal Requirements) and Provision 4 (On-Site Environmental, Health, and Safety)

5(e)(3) **Comply with all applicable environmental and health and safety legal requirements** and maintain a current list of its environmental permits and copies of each, and





Provision #5 R2 Focus Materials



5(e)(6) Conform to Provision 7 (Tracking Throughput), documenting the flow of all FM's down the Recycling Chain, and

5(e)(7) Conform to Provision 10 (Physical Security), ensuring security of the equipment down the recycling chain.





Provision #5 R2 Focus Materials



- 5(f) An R2:2013 electronics recycler shall confirm **at least annually** and document, through audits or other similarly effective means, that each downstream facility to which Section (e) applies continues to conform to the requirements of Section (e) for as long as it receives FMs directly or indirectly from the R2:2013 recycler.
- 5(g) **If the R2:2013 electronics recycler uses an R2:2013 certified downstream facility, then verification of conformance to 5(e)(1) and 5(e)(6) satisfies the due diligence requirements of 5(e) and 5(f).**



Provision #5 R2 Focus Materials



Non-Focus Materials Requiring Specific Management

- 5(h) An R2:2013 electronics recycler shall manage **print cartridges** in accordance with Provision 2 through print cartridge remanufacturers, recyclers, or Original Equipment Manufacturers (OEM), in facilities that meet all **applicable regulatory requirements** to receive these print cartridges, and that use **technology** designed to safely and effectively manage print cartridges, including both ink and toner.



Provision #6 Reusable Equipment & Components



- (b) An R2:2013 electronics recycler shall, with respect to equipment and components it ships downstream:
1. Label and sort each shipment in a manner sufficient to track throughput in conformity with Provision 7, and
 2. Ensure that all data is sanitized in conformity with Provision 8, and,
 3. Handle and package shipments to prevent damage in conformity with Provision 12



Provision #6 Reusable Equipment & Components



6(c) An R2:2013 electronics recycler shall, prior to shipping used electronics equipment and components that contain FMs, either domestically or internationally, assure and identify each shipment as either:

- 1. Tested for Full Functions, R2/Ready for Reuse;**
- 2. Tested for Key Functions, R2/Ready for Resale; and/or**
- 3. Evaluated and Non-Function, R2/Ready for Repair.**





Provision #6 Reusable Equipment & Components



6(c)(1) Tested and Full Functions, R2/Ready for Reuse

An R2:2013 electronics recycler, prior to shipping equipment and components that contain FMs to an end user, and that will be identified and shipped as Tested for Full Functions, R2 /Ready for Reuse shall:

- (A) Use effective test methods to confirm that **all functions** for equipment and components are working properly and ready for reuse, including properly configured with appropriate legally licensed software where required for operation of equipment and components, and device specific drivers within the product's hardware, and



Provision #6 Reusable Equipment & Components



- (B) Implement a written Quality Assurance Plan (or maintain current certification to **ISO 9001 or RIOS**) to verify the accuracy of test methods, equipment and results (e.g. calibration) and maintain records of effective testing methods, equipment results and,

- (C) Implement a written Product Return Plan and policy appropriate for the final destination of the equipment and components, and





Provision #6

Reusable Equipment & Components



- (D) Ensure that all equipment and components are clean and free of major cosmetic defects, as defined in Section (c)(1)(B), and
- (E) Ensure that the equipment or components meet the requirements of the recipient.



Provision #6 Reusable Equipment & Components



6(c)(2) Tested for Key Functions, R2/Ready for Resale

An R2:2013 electronics recycler, prior to shipping equipment and components that contain FMs to a recipient vendor or end user, and that will be identified and shipped as Tested for Key Functions, R2/Ready for Resale shall:

- (A) Use effective test methods and testing equipment to confirm the **Key Functions** of the equipment or components are working properly, and



Provision #6 Reusable Equipment & Components



- (B) Implement a written Quality Assurance Plan (or maintain current certification to **ISO 9001 or RIOS**) to verify the accuracy of test methods, equipment and results (e.g. calibration) and maintain records of effective testing methods, equipment results and,

- (C) Disclose in writing to buyers any **functions that are not working** properly and provide a description of **cosmetic defects** and **missing components** for each shipment as applicable, and



Provision #6

Reusable Equipment & Components



- (D) Implement a written Product Return Plan and policy appropriate for the final destination of the equipment and components, and
- (E) Ensure that the equipment or components meet the specifications of the recipient vendor or the end user.



Provision #6 Reusable Equipment & Components



6(c)(3) Evaluated and Non-Function, R2/Ready for Repair

An R2:2013 electronics recycler, prior to shipping equipment and components that contain FMs to a recipient vendor, and that will be identified and shipped as Evaluated and Non-Function, R2/Ready for Repair shall:

- (A) Implement a written Quality Assurance Plan and policy to evaluate equipment and components to ensure the condition, functionality, and sales price of the unit or component is capable of repair and refurbishment in the destination market, and



Provision #6 Reusable Equipment & Components



- (B) Confirm through an appropriate combination of contractual agreements, detailed materials tracking, recordkeeping, and auditing that equipment and components containing FMs are only shipped to:
- i. Electronics recycler(s) that are certified to R2:2013 and verified in accordance with Provision 5(g), or
 - ii. Recipient vendor(s) that can assure that all equipment and components shall be resold in conformance with Section (c)(1), R2/Ready for Reuse or Section (c)(2), R2/Ready for Resale, and



Provision #6 Reusable Equipment & Components



- iii. Recipient vendor(s) that can manage all equipment and components containing FMs and residual FMs resulting from repair and refurbishing operations in conformance with Provision 3 and 5, (End-of-Life)

and,

(C) Ensure that the equipment or components meet the specifications of the recipient vendor.



Provision #6 Reusable Equipment & Components



- (D) An R2:2013 electronics recycler need not conform to Section (c) for sales of “Collectible Electronics” and their associated components or “Specialty Electronics” that the R2:2013 electronics recycler does not possess the technical capability to test or repair. Such sales are restricted to 1% of total individual units by quantity sold on a rolling 12 month average. Sales under this provision must include returns at no cost to the buyer.
- (1) An R2:2013 electronics recycler shall conform to the legal requirements (including export) in Provision 3 for these sales/shipments.
- (2) An R2:2013 electronics recycler need not conform to the downstream requirements of Provision 5 for these sales/shipments.





Provision #6 Reusable Equipment & Components



- (E) An R2:2013 electronics recycler need not conform to the downstream requirements of Provision 5 and the exporting requirements of Provision 3 for shipments that are Tested/Full Function, R2:2013/Ready for Reuse in Section (c)(1), or Tested/Key Functions, R2:2013/Ready for Resale in Section (c)(2), or are new and in original packaging.





Provision #7 Tracking Throughput



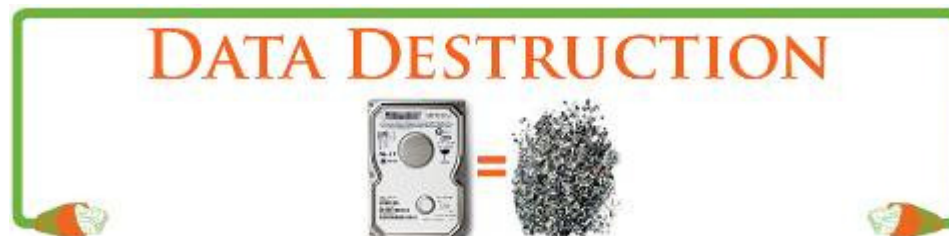
- (a) An R2:2013 electronics recycler shall maintain for at least three years commercial contracts, bills of lading, or other commercially-accepted documentation for all transfers of equipment, components, and materials. An R2:2013 electronics recycler does not need to track non-FM's beyond the first tier downstream vendor.
- (b) An R2:2013 electronics recycler **shall provide to each customer upon request** and with appropriate intellectual property controls as required by the discloser, the names and locations of all downstream vendors in the recycling chain that handle the customer's FMs that pass through the recycler's facility.



Provision #8 Data Destruction



- R2 recycler shall follow NIST special publication 800-88 or generally accepted standard, or be certified (e.g. NAID)
- Documented destruction Procedures
- Employees involved in data destruction shall receive appropriate training on a regular basis and be **evaluated for competency** in data destruction processing.
- Process reviewed and validated by independent party on periodic basis





Provision #8 Data Destruction



- (e) Quality controls shall be documented, implemented, and monitored internally to ensure effectiveness of data sanitization, purging, and destruction techniques.

- (f) Security controls shall be documented, implemented and maintained that are appropriate to the most sensitive classification of media accepted at the facility. Security controls shall consider physical security, monitoring, chain-of-custody, and personnel qualifications.

- (g) Adequate records of data destruction shall be maintained by the R2:2013 electronics recycler and each downstream vendor for data destruction.



Provision #8 Data Destruction



(h) If Data Destruction is handled by a downstream vendor:

1. The R2:2013 electronics recycler shall maintain responsibility for data destruction and ensure appropriate security, controls, and processing techniques continue to conform to Provision 8 through audits or other similarly effective means.
2. Media or devices containing media with data must be tracked and secured during transportation, storage, and processing.
3. Each downstream vendor must adhere to the requirements of Provision 8.



Provision #9 Storage



- FM's, equipment, and components
 - Protect from atmospheric conditions/floods
 - Is in full legal compliance
 - Access controlled/security
 - Container labeling and storage area identification
 - Pay attention to any legal requirements (e.g. CRT's, batteries)
 - Consider inclusion in ongoing monitoring activities to ensure any compliance issues, and container integrity to eliminate leakage (dust, liquids)





Provision #10 Facility Security



- Controlled access
 - Consider equipment, sensitivity of media containing data, and customer needs
 - Consider and include necessary controls to secure electronic equipment upon acceptance of said equipment





Provision #11

Insurance, Closure Plan and Financial Responsibility



- (a) The R2:2013 electronics recycler shall be able to demonstrate that it has evaluated the risks arising from its certification activities and that it has adequate insurance or reserves to cover liabilities, including **environmental pollution and worker health and safety**, arising from its operations in each of its fields of activities and the geographic areas in which it operates.





Provision #11

Insurance, Closure Plan and Financial Responsibility



- b) Develop and maintain a current, written plan and a sufficient financial instrument that assures proper closure of the facility and assures against abandonment of any electronic equipment, and components and materials from such equipment:
- (1) Financial instruments must be assigned to an independent party or corporate parent.
 - (2) **Financial instruments** shall consider the risks identified in Section (a) and applicable law, including reasonably foreseeable costs of processing remaining inventory, sampling for environmental contamination, and site remediation to restore premise to sellable condition.
 - (3) **Closure plans** shall consider the risks identified in Section (a) including details assigning responsibility for closure, funding information, and plans for inventory processing, environmental sampling, and site remediation as needed.



Provision #12 Transport



- (b) An R2:2013 electronics recycler must verify that its transporters, including its own fleet, have all the necessary regulatory authorizations, maintain adequate insurance coverage consistent with the material and method of transportation, and maintain an acceptable vehicle and driver safety record during the previous 3 years.





Provision #13 Documentation and Recordkeeping



- (a) An R2:2013 electronics recycler shall have access at the certified facility to documents and records necessary to demonstrate conformity to each requirement of this document.





R2 Certification



- Companies who are in the process of getting certified to R2:2008 have six months from the release of the R2:2013 standard to get certified (*December 31, 2013*).
- After the initial six months, any company wanting to get certified to R2 must get certified to the new R2:2013 version (*after January 1, 2014*).
- Any company certified to R2:2008, whether currently certified or in the process of obtaining certification, must upgrade to R2:2013 within 18 months from its release (*by December 31, 2014*).

Slide 41

SR1

Sharada Rao, 9/24/2013



Certified Company Licensing Agreement with R2 Solutions



To obtain and maintain a **licensing agreement** with R2 Solutions, a company must:

- a) Engage in electronics reuse and recycling activities such as refurbishing, collecting, reselling, processing, demanufacturing, recovering assets, or brokering of electronics equipment or components.
- b) Remain current in its payments to R2 Solutions for the licensing fee.
- c) Abide by all requirements relating to use of the R2 Logo.
- d) Otherwise conform to the licensing agreement.



Issuance of Certification and Notice to R2 Solutions



- The CB shall verify that the certification candidate's licensing agreement with R2 Solutions is current during any audits.
- Multi-site certifications shall clearly identify the controlling site. Each site listing will clearly demonstrate any differences in scope of activities between sites. Each site must be fully audited before added to the multi-site certificate.
- Campus certifications shall clearly identify the main processing location and follow any applicable requirements within the R2 code of practices.
- If any allowances are used, each allowance will be documented on the certificate.



Issuance of Multi-Site Sampling Certifications



- Multi-site certifications must have one EH&S Management system and shared documented processes among all locations in the multi-site certification to ensure consistent execution.
- All sites listed on a multi-site certification must be visited and fully audited as part of the initial certification.
- New sites must be fully audited before being added to the multi-site certification
- Each remote site must be visited by the CB and audited at least once every 3 years, irrespective of the sampling requirements.





Certification Process



The initial audit consists of two stages:

- Stage 1:
 - On-site document review of your EHSMS
 - Evaluates the readiness of your organization to move to stage 2.
- Stage 2:
 - Scheduled 30 to 75 days after the stage 1 audit.
 - On-site audit of your entire EHSMS.
 - Nonconformities will need to be resolved prior to issuing of the certificate.





Certification Process



- Surveillance audits
 - Scheduled at either six or twelve month intervals depending on the contract.
 - Partial system audit.
- Re-certification audit
 - On-site audit conducted prior to the third anniversary of the initial certification
 - Surveillance visits will then continue, as before, on a 3-year cycle.





Questions



Please type any questions you may have.





Responsible Recycling – R2



For additional technical information, please contact Scott Jones.

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