

# e-Waste Responsible Recycling



**PERRY JOHNSON REGISTRARS**  
**PJR**

Presented by:  
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# Responsible Recycling – R2



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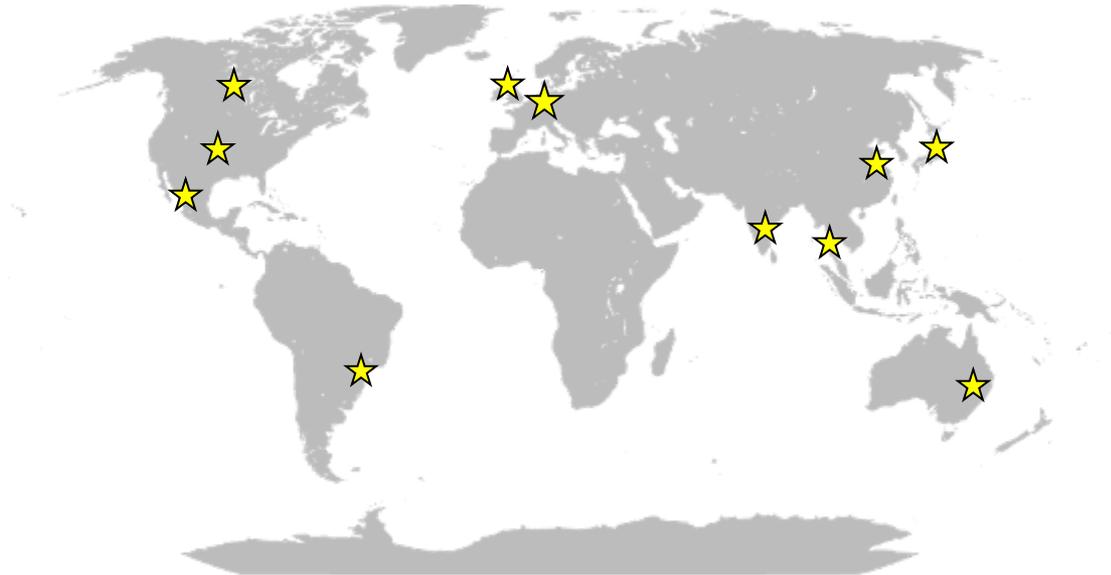
- Welcome From PJR Headquarters:
  - PJR
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  - Phone: 1-800-800-7910
  - Email: [PJR@PJR.com](mailto:PJR@PJR.com)
- Audience for today's meeting
- Introduction of speakers
- Today's Session (1 Hour)
  - Informational Standard Overview
  - R2:2013 Critical Issues
  - Top Nonconformances / Lessons Learned
  - Certification Process
  - Questions





# 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
  - Hong Kong
  - Brazil
  - India
  - Ireland
  - Japan
  - Malaysia
  - Mexico
  - Thailand
  - Singapore
  - European Union
  - United States





# About R2:2013

- The initial R2 Standard was published in 2008 (R2:2008). It was later revised to the current standard, R2:2013, effective July 1, 2013.
- R2:2013 is not intended to be an EH&S Management System by itself.
- R2:2013 requires a company to meet one of the following requirements:
  - Certification to ISO 14001 **and** OHSAS 18001; **OR**
  - Certification to the Recycling Industry Operating Standard (RIOS).



# 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



# R2 Critical Issues

## Allowances

- Broker Allowance
  - Do not physically handle equipment or materials.
- Campus Allowance
  - A campus is where a company has physically separate addresses in the same metropolitan area that are used together as one interconnected operation.
- Co-Location Allowance
  - Co-location means two or more legally separate entities sharing the same physical address.
- FM Processor Allowance
  - Only provides specific processing of a Focus Material in the recycling chain and does not provide full electronics recycling or refurbishment.
  - Provision 8 for data destruction will not apply.
  - Provision 6 for reuse will not apply.



# R2 Critical Issues

## Objectives and Targets

- Written goals and procedures covering, and requiring the organization to systematically manage, its on-site and downstream:
  - environmental,
  - health, safety, and
  - data security matters





# R2 Critical Issues

“Reuse, Recover...” Hierarchy of Responsible Management Strategies:

- Develop policy for managing used and end-of-life electronics equipment.
- Policy must be based on the hierarchy of responsible management strategies:

**Reuse**

**Materials Recovery**

**Energy Recovery and Land Disposal**



# R2 Critical Issues

## Import / Export Compliance

- Legal compliance plan must identify and document the legality of all international shipments of FMs and untested or non-functioning equipment or components containing FMs, that have passed through the R2:2013 electronics recycler's facility or control.
- This includes the following:
  - The laws of the exporting countries
  - Transit countries, and
  - Importing countries





# R2 Critical Issues

## Legal Requirements

- Compliance Evaluations
  - Not just a list of applicable legal and other requirements
  - Not just a yes/no checklist
  - Need to include objective evidence of compliance



# R2 Critical Issues

## On-Site Environmental, Health and Safety

- An R2:2013 electronics recycler shall conduct on an ongoing basis (e.g., as new types of materials are processed or new processes are used) a hazards identification and assessment of occupational health and safety and environmental risks that exist or could reasonably be expected to develop at the facility.
- Such risks could result from any sources, including but not limited to:
  - emissions of and/or exposure to substances,
  - noise,
  - ergonomic factors,
  - thermal stress,
  - substandard machine guarding,
  - cuts and abrasions, etc.



# R2 Critical Issues

## On-Site Environmental, Health and Safety

- An R2:2013 electronics recycler shall manage the environmental, health and safety hazards, minimize the risks it identifies, and prioritize the use of appropriate strategies to implement and maintain controls, including but not limited to:
  - Engineering Controls
  - Administrative Controls
  - PPE
- Monitoring and sampling requirements.



# 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.





# R2 Critical Issues

## R2 Focus Materials:

- Selection and Ongoing Due Diligence of Downstream Vendors for FMs.

## R2 certified DSV vs. Non-R2 certified DSV





# R2 Critical Issues

## R2 Focus Materials:

- R2 Certified DSV
  - FM Plan
  - Tracking Throughput
  - Evidence of a valid R2 certificate
- Non-R2 Certified DSV
  - FM Plan
  - EHS Management System
  - Evidence of legal compliance (e.g. permits)
  - Verify conformance to the due diligence requirements for all DSVs in the recycling chain.
  - Conform to Provision 6 (Reuse)
  - Conform to Provision 7 (Tracking Throughput)
  - Conform to Provision 10 (Physical Security)





# R2 Critical Issues

## Reusable Equipment & Components:

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.
    - Use effective test methods (1 and 2)
    - Written Quality Assurance Plan and Policy (1, 2, and 3)
    - Disclose in writing any functions not working (2)
    - Product Return Plan and Policy (1 and 2)
    - No major cosmetic defects (1)
    - Meet customer requirements (1, 2, and 3)
    - Meet DSV due diligence requirements (3)
- 
- Ensure ALL DSVs used for testing / refurbishment are in conformance.





# R2 Critical Issues

## Tracking Throughput:

- Maintain records of tracking throughput for at least three years:
  - Commercial contracts, bills of lading, or other commercially-accepted documentation for all transfers of equipment, components, and materials.
    - » If DSV is not R2 certified, these records need to be maintained for all tiers in the recycling chain.
  - An R2:2013 electronics recycler does not need to track non-FM's beyond the first tier downstream vendor.





# R2 Critical Issues

## Data Destruction:

- Sanitize, purge, or destroy data on hard drives and other data storage devices.
- Review and validate processes – **ensure shredding size is adequate.**
- Ensure quality controls are in place.
- Ensure security controls are in place – **Shipping, storage, COD, etc.**
- If Data Destruction is handled by a downstream vendor:
  - The R2:2013 electronics recycler shall maintain responsibility for data destruction.
  - Media or devices containing media with data must be **tracked and secured** during transportation, storage, and processing.
  - Each downstream vendor must adhere to the requirements of Provision 8.





# R2 Critical Issues

## Storage of FM's, equipment, and components:

- Protect from atmospheric conditions/floods.
- Is in full legal compliance (e.g. Universal Waste requirements)
- Access controlled/security.
- Container labeling and storage area identification.



## Facility Security:

- Consider equipment, sensitivity of media containing data, and customer needs.
  - From both internal and external personnel.
- Consider and include necessary controls to secure electronic equipment upon acceptance of said equipment.
  - Locked containers or storage areas





# R2 Critical Issues

## Insurance, Closure Plan and Financial Responsibility:

- Evaluate the risks and ensure adequate insurance or reserves to cover liabilities, including environmental pollution and worker health and safety.
  - Ensure qualified person is responsible for this.
  - Evidence that pollution liability coverage is not required.
- Develop a Closure plan that assures proper closure in case of abandonment.
- Ensure financial instrument is in place to properly close the facility:
  - Must be assigned to an independent party or corporate parent.
  - Shall cover reasonably foreseeable costs of processing remaining inventory, sampling for environmental contamination, and site remediation to restore premise to sellable condition.
    - » Can include assets intrinsic to the facility
    - » Not customer's equipment



# R2 Critical Issues

## Transportation:

- Verify that transporters, including its own fleet, comply with regulatory requirements, maintain adequate insurance coverage, and maintain an acceptable vehicle and driver safety record during the previous 3 years.
  - This includes a R2 company's own fleet.
  - International issues with obtaining records.



## Documentation and Recordkeeping:

- 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.
  - Ensure all documents are available at the point of use and all records are accessible.



# R2 Critical Issues

## Transportation:

- Verify that transporters, including its own fleet, comply with regulatory requirements, maintain adequate insurance coverage, and maintain an acceptable vehicle and driver safety record during the previous 3 years.



## Documentation and Recordkeeping:

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# Top Nonconformances by Provision

- **Provision 3:** Legal Requirements
- **Provision 4:** On-Site Environmental, Health, and Safety
- **Provision 5(e):** Selection and Ongoing Due Diligence of Downstream Vendors for FMs.
- **Provision 6:** Reusable Equipment and Components
- **Provision 7:** Tracking Throughput
- **Provision 8(d)-(h):** Data Destruction
- **Provision 11(b):** Closure Plan and Financial Responsibility



# 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.





# Certification Process





# Questions





# Responsible Recycling

For additional technical information, please contact Scott Jones.

## **Scott Jones**

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