Exceptional service in the national interest

Sandia National Laboratories

Go Full Circle

Reduce, Reuse, Recycle, Buy Green

Media Sanitization

Used Electronics Processing

U.S. DEPARTMENT OF ENERGY

NNSA
National Nuclear Security Administration

Where We're Coming From

- Sandia is a National Nuclear Security Administration (NNSA) laboratory for the Department of Energy (DOE)
  - More stringent data security requirements than other DOE sites
  - Geographically isolated – New Mexico, USA
    (No passport required)

- Only covering processes at Sandia's New Mexico site
  - Other smaller Sandia sites self-manage or ship equipment and materials to us.

Britannica.com
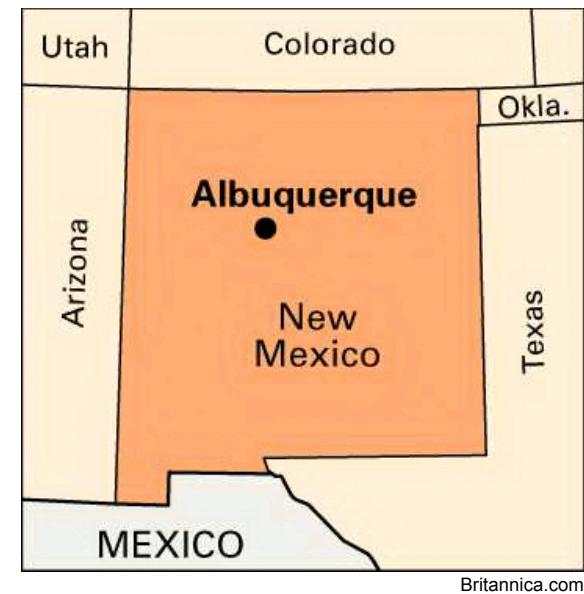
Used Electronics Triage

- Already vetted for internal reuse

- Donation occurs when possible
    - April 2012 "K-12 Computer Donation Event"
    - 25 Schools/Districts from around New Mexico
    - 1358 computers donated; along with monitors, parts, and office binders

    - No Hard Drives

TWENTY FIVE SCHOOLS from New Mexico benefitted from the Reutilization Department's computer giveaway on Monday, April 2.   (Photo by Randy Montoya)

End of Useful Life

- Shipped for basic domestic recycling
  - Desktops and Laptops (without hard drives)
  - CRT Monitors
  - Broken LCD monitors
  - Other mixed/broken electronics

- Shipped for refurbishment or constituent recovery
  - ISDN telephones
  - Whole circuit boards
  - Standard server blades
  - High performance "super" computers

Data Security in Processes

- Cell Phones / PDAs / Radios
  - Internally sanitized by computer support department
  - Hydraulically crushed to make "unattractive"
  - Added to circuit boards for final domestic destruction & recycling

- Removable Electronic Media (REM)
  - All unclassified film, magnetic, solid state and optical media
    - Witnessed Incineration

  - Exception: Commercial Off The Shelf (COTS) CDs and DVDs
    - Recycled as polycabonate
    - Good value per pound for plastic

Data Security in Processes

- **Hard Drives**

  1. Physically removed from computer/device
  2. Data is overwritten 7 times
     - Is this over-writing over-kill?
  3. Hard drive is dismantled
     - Scrap metal is recycled
     - Neodymium magnets are recovered
  4. Aluminum platter is degaussed
  5. Aluminum platter is shredded and recycled

Policy Drivers

- DOE Order 200.1A (2008) Info Tech Mgmt – points to:
  - DOE Order 205.1B (2011) – Cyber Security Mgmt
  - DOE Policy 470.1 – Integrated Safeguards and Security Mgmt

- DOE O 205.1B aims to be consistent with
  - National Institute of Standards and Technology (NIST)
  - Committee on National Security Systems (CNSS)

  - Highly Conservative:
    We treat everything as if it might be "National Security Information"

- See NIST SP 800-88 – Guidelines for Media Sanitization

NIST SP 800-88

- Guidelines for Media Sanitization
  - 2.4 – "Studies have shown that most of today's media can be effectively cleared by one overwrite."
  - Careful to note in its "Media Sanitization Decision Matrix" that the method must be "agency approved".

- Appendix A – Table A-1
  - Addresses many specific types of media and hardware
    - Hard drives
    - Disks/discs
    - Microfilm
    - Network routers!

  When in doubt, burn it out...

DoD 5220.22-M

- Became "National Industrial Security Program Operating Manual" (NISPOM), 2006
  - Cancels "US Aid" referenced document from 1995
  - Available at DoD Defense Security Service (www.dss.mil)
  - Sanitize everything to the level determined by your Cognizant Security Agency (CSA)

- The myth of the 3-pass DoD data destruction policy
  - In 2006, the DoD "removed all verbiage on single vs. multiple pass."
    - James Griffin, April 20, 2012

Lastly…

- A 5-page "Media Sanitization Considerations at Electronics End-of-Life" guide is available from the FEC.

- Thanks!

  Samuel A. McCord
  Solid Waste Recycling Planner
  Sandia National Laboratories
  Dept. of Regulated Waste & Pollution Prevention (P2)
  (o) 505-844-8916; (f) 505-844-2403
  samccor@sandia.gov
  http://p2.sandia.gov