

Peru State College
Policy on Waste Computers and Monitors
Computers and Cathode Ray Tubes (CRTs)

This policy for Peru State College is taken from a **DRAFT** document produced by: Nebraska Department of Environmental Quality, P.O. Box 98922, Lincoln, NE 68509-8922; phone (402) 471-4217. To view this and other information related to their agency, visit the web site at www.deq.state.ne.us. They produce this material for guidance purposes only. It is not meant to substitute for the regulations found in **Title 128 – Rules and Regulations Governing Hazardous Waste Management in Nebraska** or other applicable Nebraska environmental regulations.

December 2001

Use the Environmental Guidance Document titled “Waste Computers and Monitors” for general guidance. The following principles are presented to assist in managing excess computers.

- Electronic devices (e-devices) that do not contain cathode ray tubes such as CD players, VCRs, radios, cassette players, computer keyboards, electronic clocks and watches, DVD players, telephones, digital phones, scanners, tape recorders, handheld computers and calculators, external drives, record players, CB radios, speakers, amplifiers, computer towers and boxes (includes hard drives, DVD/CD-ROM) drives, memory chips, CPU, power supply, circuit boards, and floppy disc drives), etc. are presumed to contain small amounts of undesirable metals in plating, solder, and other components. Some of these metals are included in Title 128, Chapter 3, Section 010, Table 3, for exhibiting the toxicity characteristic leaching procedure (TCLP) test. Common metals that could normally be present are lead, silver, cadmium, mercury, and chromium. The NDEQ staff has seen no body of evidence that indicates whole electronic devices as described above will fail a TCLP if tested using a representative sample of the entire device. A further hazardous waste determination for the above constituents would not normally be required unless there is some other overriding factor present such as the presence of hazardous waste batteries (NiCad, silver, mercury). Due to the impracticality of testing e-devices (a representative sample would normally be the entire device) and in part due to the recognition that e-devices shouldn't fail a TCLP, in practice the NDEQ has assumed such wastes to be non-hazardous waste in the absence of other factors.
- Colleges can consider e-waste devices as described in the paragraph above as non-hazardous wastes provided all hazardous waste batteries and mercury switches are removed prior to disposal or recycling. This provision is immaterial for household waste e-waste due to the household waste exemption. The department recommends that batteries and mercury switches be removed from household e-waste as well.
- Once an electronic device is dismantled for its component parts, the individual components might present a greater probability of failing a TCLP depending on the degree of “breakdown”. For example, individual circuit boards have a much higher percentage of lead-based solder than the circuit board and the rest of the device it came from together. There has been some evidence that circuit boards can fail the TCLP. However, if a computer tower is broken down to components and a component

is a sub-device such as a hard drive or CD-ROM, then it would be a separate electronics device in its own right.

- If the components are removed for their product value as a component, they are not a solid waste. For example, a CPU removed from a computer might be used as a CPU for another device.
- If the components are removed and disposed or sent for reclamation they are normally a solid waste requiring a waste determination unless another RCRA exemption/exclusion is claimed. Components sent for reclamation will normally be considered a spent material that is a solid waste even it being reclaimed (Title 128, Chapter 2, Section 003.03C & Table 1). A person who generates a solid waste must determine if that waste is a hazardous waste (Title 128, Chapter 4, Section 002).
- If the components are eligible for the scrap metal exemption or shredded circuit board exclusion, they are not a solid waste if the conditions of the exemption/exclusion are met (Title 128, Chapter 7, Section 002.03 & Chapter 2, Section 008.15).
- A small quantity generator (SQG) or large quantity generator (LQG) claiming an exemption or exclusion of its secondary material must document claims that their secondary materials are exempt from the definition of solid waste (Title 128, Chapter 2, Section 003.06).
- Working or presumed working monitors/TVs sent to a legitimate refurbisher are still considered to be in continuous use and are not a solid waste.
 - The refurbisher must have a system, process or operation in place that maintains a meaningful percentage of the monitors/TVs in continued use. For example, a number of the monitors or TVs are resold as operating devices, are donated to charitable organizations as operating devices, or are rebuilt or upgraded as operating devices.
 - The refurbisher must have the technical expertise and capability to determine if the monitors/TVs they receive can be kept in or returned to continued use.
 - The refurbisher must have a system in place that examines every CRT/TV they receive for potential continued use.
 - The monitors/TVs must be handled in a manner consistent with their continuing use as a monitor/TV. For example, storage of an open pallet of monitors in an open lot is not how usable monitors are stored and is indicative of sham refurbishing.
 - The refurbisher should not accept monitors/TVs that are obviously unable to be kept in or returned to continued use. For example, monitors with broken CRTs or shipments of crushed CRTs are obviously unable to be kept in continued service. However, the presence of incidental breakage during shipment is not prima facie evidence that the monitor/TV was not intended for legitimate continued use. Similarly, the monitor or TV does not necessarily need to be operative in order to be considered able to be kept in continued use. Legitimate refurbishment includes repair of the electronic equipment that is received. Routine acceptance of monitors and TVs with broken CRTs demonstrates the refurbishment operation is being used as a sham for disposal of CRTs.
 - Monitors/TVs may proceed via a third party such as a broker on the way to a legitimate refurbishment site.
 - Legitimate refurbishment includes facilities that accept monitors/TVs for rebuilding. Rebuilding is the intent of keeping the device in continued use.

Accepting obviously broken monitors/TVs as described in paragraph 6g(8)(e) above would be evidence of sham recycling.

- Monochrome CRTs are not considered hazardous waste.
- Colleges should review past decisions on CRT disposal. If a college kept 30 monitors over the course of time and then decided in one month that all the monitors be disposed as waste, then the weight of all the hazardous waste monitors must be considered in that one month as hazardous waste. If each monitor weighed 30 pounds and all the monitors were hazardous waste that would mean just the disposed monitors would weigh 1,500 pounds and even if no other hazardous waste were generated in that one month over the entire campus, the college would be a SQG. However, it is a normal procedure for many operations to decide to dispose of excess monitors as they become excess. If the normal rate were about two monitors per month, then 30-pound waste monitors would generate about 60 pounds per month. This is well below the 220 pound CESQG generation limit. A special caution must be mentioned for organizations that must have their property managed through State Surplus Property. The surplus property decision matrix can easily result in excess monitors being declared waste in a single batch at one-time. If a college was, for example, to attempt to sell their excess monitors through public auction and there were no buyers, a subsequent declaration that the monitors are **condemned** could result in the entire amount being a waste all at once. To avoid this, the college should attempt to get permission (within the constraints of state statute) to continue to keep the monitors as still eligible for continued use through legitimate refurbishment. In the event circumstances dictate that monitor disposition result in hazardous waste generation over 220 pounds for the campus in a calendar month, the college must ensure all hazardous waste management over the entire campus comply with SQG or LQG rules as appropriate for that month.
- Some older computer systems were manufactured with the monitor and the computer system being one integral unit. Under these circumstances, if the whole unit were to be disposed, the weight of the whole unit would count as hazardous waste. If the CRT were removed from the unit, only the weight of the CRT would be considered hazardous waste. Monochrome systems are not considered to be hazardous waste.
- If a college generates SQG quantities of hazardous waste in a calendar month, all hazardous waste generated in that calendar month must be managed under the SQG rules. Please see the attached fact sheet titled "Comparison of Hazardous Waste Generator Requirements" for information on where to locate SQG requirements in Title 128. If a college generates less than 220 pounds of hazardous waste in a subsequent CESQG month, then that waste can be managed under CESQG requirements. Any SQG hazardous waste on hand must continue to be managed under SQG rules in subsequent CESQG months until it is properly transported off campus. I recommend that CESQG waste not be co-mingled with SQG waste. If the waste is co-mingled, then the entire amount must be managed as SQG waste, subject to all SQG requirements. Remember, the sole distinction between SQG waste and CESQG waste under Title 128 is the total amount of hazardous waste that has been generated in a calendar month. It is not inconceivable that an organization could be changing generator status every month! If the college were to accumulate over 2,200 pounds of CESQG waste at one time, the entire amount becomes subject to SQG requirements (Title 128, Chapter 8, §006.02).