



Environment, Safety and Health Bulletin

Update – Hexavalent Chromium

DOE/EH-0697 2006-01 (Update) April 2006

Effective February 28, 2006, the OSHA
permissible exposure limit
for Cr(VI) is 5 $\mu\text{g}/\text{m}^3$ air (down from 52)

**[http://www.hss.energy.gov/CSA/csp/
safety_bulletins/2006-01update.pdf](http://www.hss.energy.gov/CSA/csp/safety_bulletins/2006-01update.pdf)**

10 CFR 851

Worker Safety and Health Protection, requires DOE contractors to comply with all OSHA safety and health standards. The effectiveness of engineered controls and use of adequate respiratory protection should be re-evaluated in light of the new Cr(VI) PEL.

Cr (VI): Occupational Exposures

- Occupational exposures occur mainly among workers who:
 - handle chromate-containing pigments, spray paints, or coatings,
 - operate chrome plating baths,
 - or weld or cut metals, such as stainless steel, that contain chromium.
- All Cr(VI) compounds are potential human carcinogens. Exposure to certain of these compounds is known to increase the risk of lung cancer. Other adverse health effects from Cr(VI) exposures include nasal and sinus cancers, kidney and liver damage, nasal and dermal irritation and ulceration, and eye irritation and damage.

DOE Lessons Learned

- DOE records show that in 2005, there were (DOE wide) four welding incidents resulting in overexposures to Cr(VI).
- In addition, legacy contamination in recirculation-type cooling systems (corrosion protection) may cause occupational exposures at DOE sites if ...solutions of Cr(VI) compounds are found inside piping, valves, heat exchangers, and pumps during decommissioning, dismantling and disposition (D&D) activities that involve cutting or burning.

BNL Cr(VI) Monitoring

Two welding jobs in 2006

Building	Date	Result ($\mu\text{g}/\text{m}^3$)
B 479	022406	<0.11
B 1005S	051006	<0.06

- Permissible Exposure Limit for Cr(VI) $5 \mu\text{g}/\text{m}^3$
- TLV (insoluble CrVI cmpds) $10 \mu\text{g}/\text{m}^3$