CPWR

THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

November 5, 2007
OSHA hexavalent chromium rulemaking:
Perspectives from the labor and scientific communities
APHA Washington, DC

Bill Kojola, AFL-CIO Peter Lurie, Public Citizen
Chris Trahan, CPWR/BCTD

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

OSHA Standards For Chemicals

- Permissible Exposure Limits (PEL) Only
- About 500 Chemicals
- Adopted as One Large Group in Early 1970's
- Most PELs Out of Date – 30 to 50 Years Old
- Attempt To Update Failed Court Challenge

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

OSHA Standards For Chemicals

- Comprehensive Standards Since 1970
- Contain Many Elements:
  - PEL
  - Exposure monitoring
  - Medical surveillance
  - Worker training provisions
  - Controls, personal protective equipment
  - Work practices
  - Medical removal
  - Recordkeeping
- Covers 30 Major Chemicals – Asbestos, Lead

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

OSHA Rulemaking Process

Initiating The Rulemaking Process

OSHA Itself

- Issues a regulatory agenda

Petitions From:

- Labor representatives
- NIOSH
- Employer representatives
- Others (State/local gov't)

- Lawsuit

OSHA Rulemaking Process

To Develop PEL:

A. Determine if exposed at significant risk of developing adverse health effect

- **Quantitative risk assessment**

B. Select PEL based on whether:

- **Significantly reduces risk to workers**
- **Economically feasible**
- **Technologically feasible**
- **Impact on small business (SBREFA)**

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

OSHA Rulemaking Process

- Publishes Proposed Rule For Comments
- Holds Public Hearing/Takes Testimony
- Prepares Final Rule
- OMB Reviews Draft Final Rule
- Publish Final Rule
- Subject To Court Challenge/ Congress

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

OSHA Rulemaking Under Bush

- Gutted Regulatory Agenda
- Withdrawn 24 Standards From Agenda
- Both Chemicals And Safety Hazards
- Chemicals Dropped:
  - **PEL update (500 chemicals)**
  - **Metalworking fluids**
  - **Perchlorethylene**

- Stalling On Other Hazards
  - **Silica, beryllium**
  - **Hearing conservation in construction**
  - **Payment for PPE**

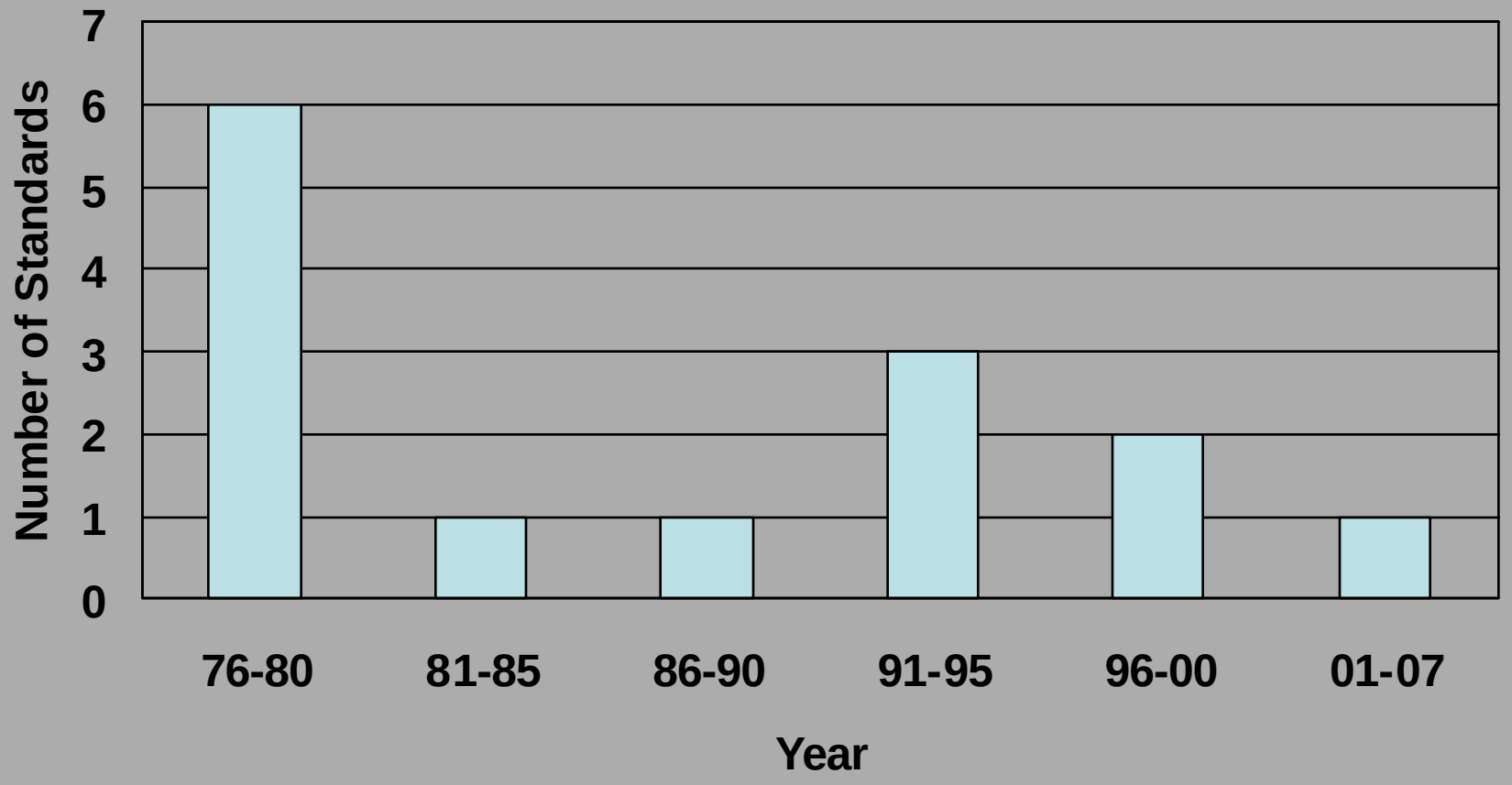
CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

OSHA Rulemaking Under Bush

- Under Clinton Administration:
  - Seven major health standards issued
  - Ten major safety standards issued
- Under Bush Administration:
  - One major health standard (hex chrome!)
  - One safety standard (electrical equipment)
- Hex Chrome Done Under Court Order!!

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Number of Chemical Standards Enacted by OSHA, 1971-2006



CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Hexavalent Chromium Regulation Delayed

- 1971: OSHA adopts 52 ug/m^3 PEL
- 1975: NIOSH recommends 1 ug/m^3 PEL
- 1993: OCAW and Public Citizen petition OSHA for 0.25 ug/m^3 PEL
- 1994: OSHA promises proposed rule in 1995
- 1997: OCAW and Public Citizen sue OSHA
- 1998: Court of Appeals denies petitioners; OSHA promises proposed rule in 1999

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Hexavalent Chromium Publication Delayed

- EPA/Johns Hopkins University study
  2357 Cr(VI)-exposed workers followed through 1992 (Gibb study)
- 1995: first of 5 presentations of data showing increased risk of lung cancer
- 1999: Public Citizen requests study data
- July 2000: results in Am J Ind Med
- Observed/expected for lung cancer: 1.80

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Analysis of OSHA Compliance Inspections, 1990-2000

Measurement	<HRG Proposal	HRG Proposal-OSHA PEL	>OSHA PEL
TWA (n=197)	26 (13.2 %)	129 (65.5%)	42 (21.3%)
Ceiling (n=180)	1 (0.6%)	110 (61.1%)	69 (38.3%)

Source: Am J Ind Med 2002;42:378-83

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Hexavalent Chromium Regulation Delayed

- 2001: OSHA designates Cr(VI) “long-term action”
- March 2002: PACE and Public Citizen sue again
- November 2002: Case argued
- December 2002: Court rules OSHA must issue final rule by early 2006
- October 2004: OSHA proposes 1 ug/m^3 PEL
- February 2005: Evidentiary hearings

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Comparison of Two Pivotal Studies in OSHA Risk Assessment

	Gibb Study	Luippold Study
Workers	2,357	482
Person-years of follow-up	70,736	14,048
Loss to follow-up	0%	10%
Lung cancer deaths	122	51
Exposure data collection	Routine	Industrial hygiene surveys
Exposure measurements	~70,000	>800
Includes low exposures?	Yes	No
Smoking assessment	93% of cohort	35% of cohort

Other "Controversies" in the Proposed Rule

- Pigments
- Threshold effect
- Feasibility
  - Technological: hard chrome plating and some welding (but almost half already compliant)
  - Economic

The Industry Response

- 1996: Hiring of “litigation support” and “product defense” firms
  - Hired through attorneys to “…preserve the confidentiality of information, opinion, and data to the extent provided for under the attorney-client privilege and attorney work product privilege.”
- 1999-2003: Publication of new articles questioning dangers of Cr(VI)
- 2002: Reanalysis of EPA/JHU study
  - Simulated cohort
  - Actual reanalysis

The Industry Response (ctd.)

- 1997: Contracted for study of 4 low-exposure worksites (2 U.S., 2 Germany) “to improve statistical power and the inferential value of the results”

- 2004: Published report on the 2 U.S. sites
  - Claims benefits of reduced Cr(VI) exposure
  - Based on 3 lung cancer cases
  - Cited in hearing comments by 3 industry groups

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

The Industry Response (ctd.)

U.S. and German Cohorts

Cumulative Exposure to Cr(VI)	OR	95% CI
Low (<1.2 $\mu g/m^3$)	Reference	
Intermediate (1.2 - <5.8 $\mu g/m^3$)	4.9	1.5 - 16.0
High (≥ 5.8 $\mu g/m^3$)	20.2	6.2 - 65.4

German Cohorts Only

Cumulative Exposure to Cr(VI)	OR	95% CI
Low and Intermediate (<5.8 $\mu g/m^3$)	Reference	
High (≥ 5.8 $\mu g/m^3$)	6.9	2.6 – 18.2

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Hexavalent Chromium Worker Protection Delayed

- February 2006: Final Rule issued
  - PEL: 5 ug/m^3
  - Effective date for engineering controls: 2010
- March 2006: Public Citizen and Steelworkers sue OSHA
- October 2006: Settlement with electroplaters
- November 2007: briefs and counter-briefs submitted

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Recent OSHA Chemical Standards

Substance	Deaths per 1,000 Workers over 45-year Working Lifetime at the PEL
Asbestos	6.7
Cadmium	3 - 15
Ethylene Oxide	1.2 - 2.3
Cr (VI) (Proposed)	2.1 - 9.1
Cr (VI) (Final)	10 - 45

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Says Who?

- OSHA does not believe that [its legal] obligation can be satisfied … by protecting all workers only to the extent that the most severe feasibility constraint on protecting any worker would allow. On the contrary, OSHA believes that if a minority of workers cannot be as effectively protected as the majority, that fact is not an adequate reason to forego protecting the majority to the extent feasible. The courts seem to agree.

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Says Who?

- OSHA does not believe that [its legal] obligation can be satisfied … by protecting all workers only to the extent that the most severe feasibility constraint on protecting any worker would allow. On the contrary, OSHA believes that if a minority of workers cannot be as effectively protected as the majority, that fact is not an adequate reason to forego protecting the majority to the extent feasible. The courts seem to agree.

-- OSHA Final Rule on Cadmium, 1992

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Labor Perspective on Hexavalent Chromium Rule

- Litigation pushed OSHA to promulgate a standard.
- Construction unions participated in the formal rulemaking process.
- Final Rule fell short in several areas.

Construction Unions Sued

- Building and Construction Trades Department, AFL-CIO
  - Representing 11 construction unions
- Laborers' International Association of North America
- International Brotherhood of Teamsters

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Lawsuit Issues

- Exclusion of Portland Cement
- Four years to get engineering controls
- Worker notification of sampling results
- Permissible exposure limit

Portland Cement Exclusion

- Evidence in docket supported inclusion
- BCTD recommended coverage where hex chrome content exceeded 2 ppm
- Jobsite controls required
- OSHA explained decision to exclude based on airborne hazard potential

What Skin Problems Does Cement Cause?

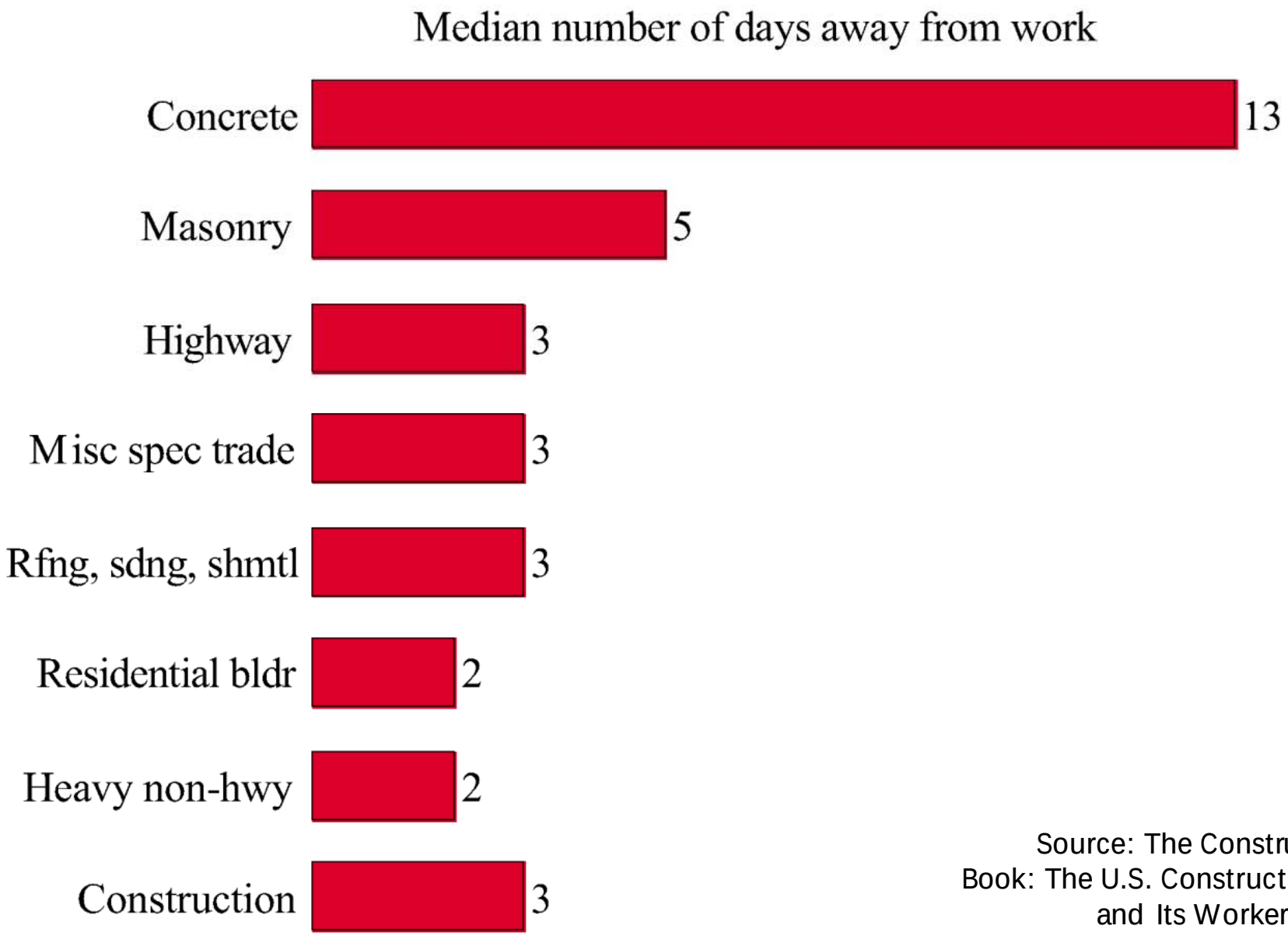
Four are most common among construction workers exposed to wet portland cement:

- **Irritation –** dry skin, scaling, itchiness, burning, redness.
- **Irritant Dermatitis –** same as above. Also stinging, pain, dead skin, blisters, scabs, fissures, swelling, bumps, dry or watery discharge.
- **Allergic Dermatitis –** an immunologic reaction. Once sensitized, small amounts trigger a strong reaction. May result in a life-long disability.

- **Cement (Caustic/Chemical) Burns –** Refer to a specialist without delay.

Dry Skin Photo

46b. Median number of days away from work for nonfatal skin disorders, by construction industry, 1995

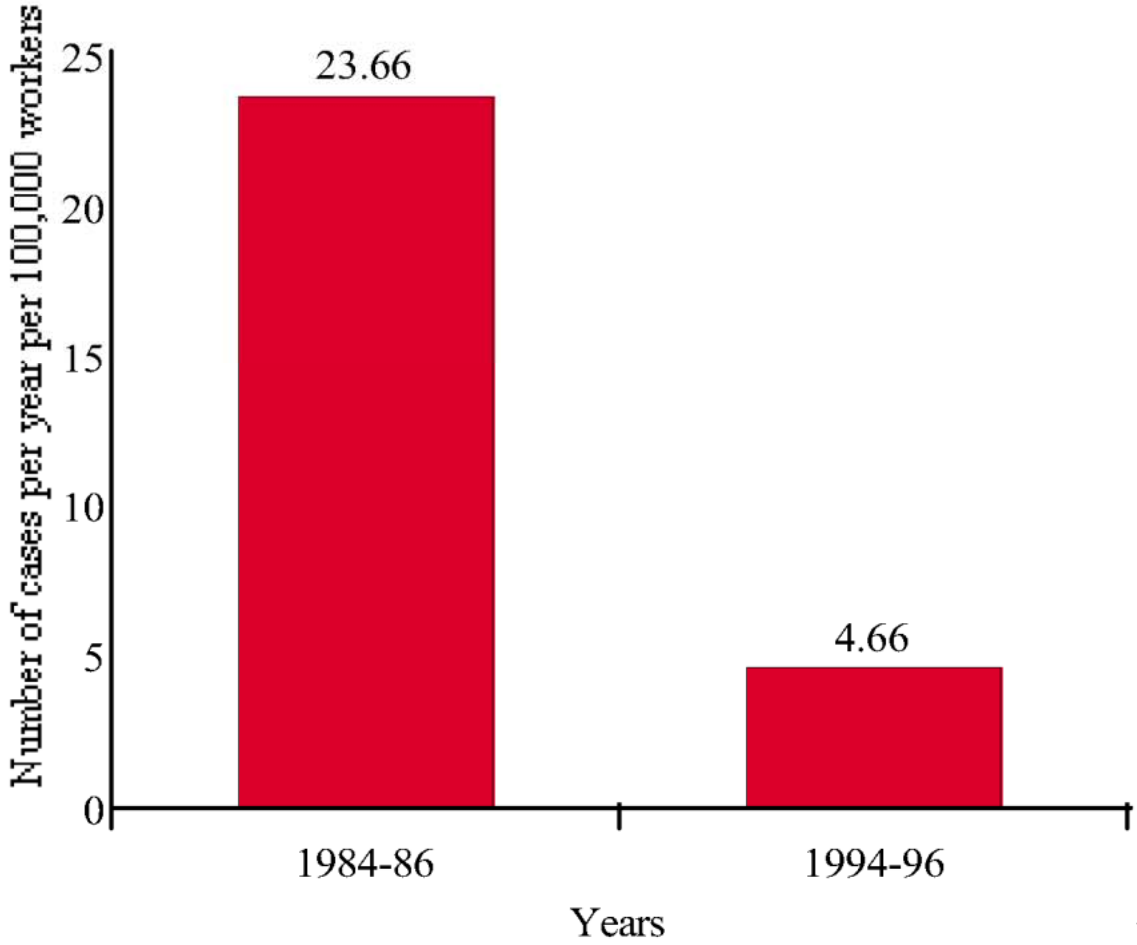


Source: The Construction Chart Book: The U.S. Construction Industry and Its Workers, published September 2002.

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

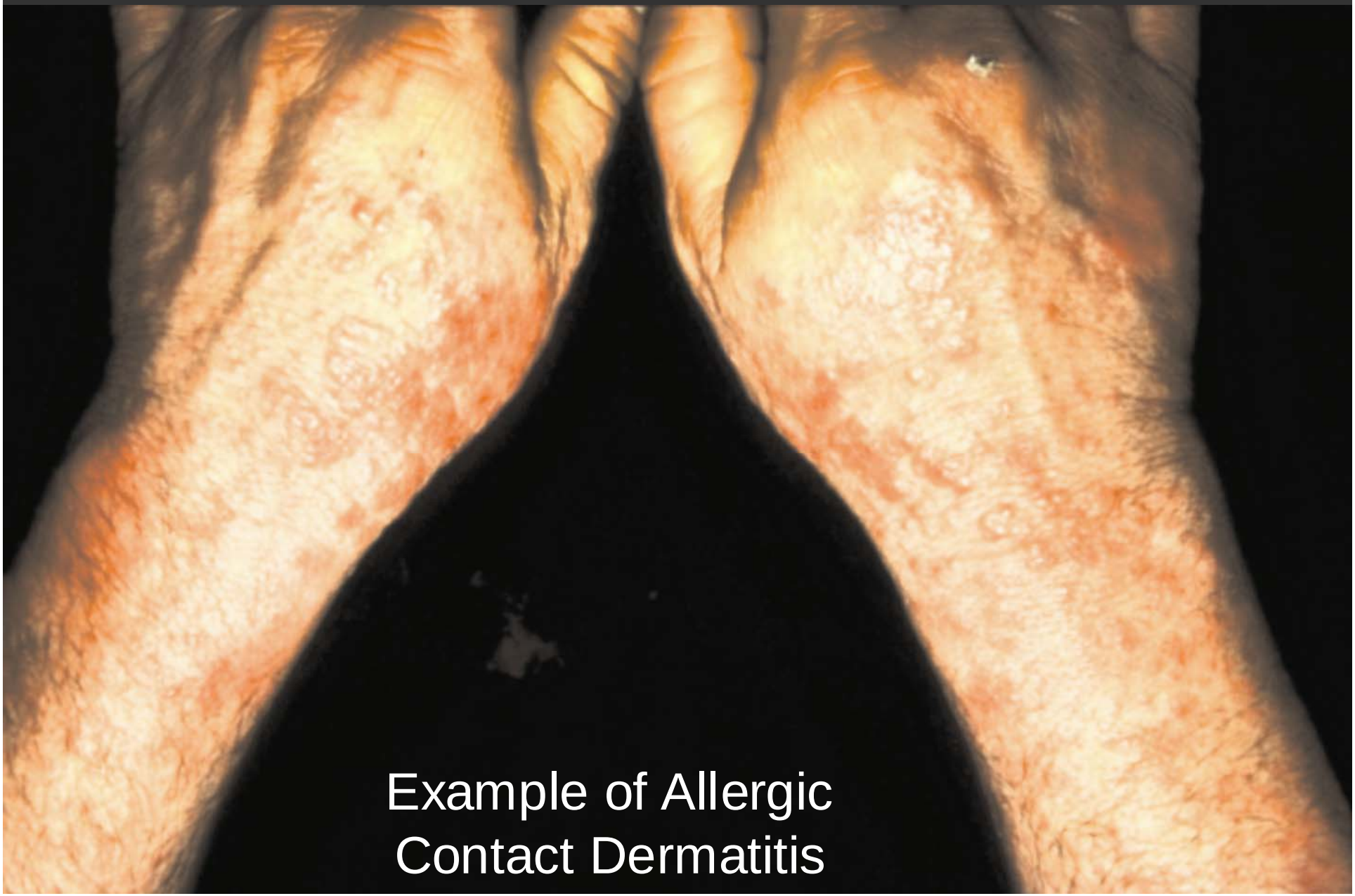
Portland Cement Burn On Leg

46c. Rate of work-related allergic dermatitis among construction workers in Finland, before and after reduction of chromium content in cement (3-year averages)



Source: The Construction Chart Book: The U.S. Construction Industry and Its Workers, published September 2002.

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING



Example of Allergic Contact Dermatitis

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

4 Years for Engineering Controls?

- Construction industry engineering controls are LEV's
- LEV's are not capital expenditures
- Not supported by the rulemaking for this industry

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Worker Notification of Results

- Only above the PEL (1926.1126 (d)(4)(i))
- Different from GI/construction proposed rules
- Departure from typical health standards

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

PEL too high

- Proposed rule: 1 microgram/cubic meter
- Final rule: 5 micrograms/cubic meter

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

April 2007 Settlement Agreement

IN THE UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

BUILDING AND CONSTRUCTION TRADES DEPARTMENT, AFL-CIO, LABORERS' INTERNATIONAL UNION OF NORTH AMERICA, and INTERNATIONAL BROTHERHOOD OF TEAMSTERS,

Petitioners,

v.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, U.S. DEPARTMENT OF LABOR,

Respondent.

Docket No. 06-2433
and consolidated cases

SETTLEMENT AGREEMENT

The Building and Construction Trades Department, AFL-CIO, Laborers' International Union of North America, and International Brotherhood of Teamsters (hereafter collectively "Building Trades") and the Occupational Safety and Health Administration, United States Department of Labor ("OSHA") agree to the following terms as the settlement of the Building Trades' challenge to OSHA's Hexavalent Chromium Standard.

A. **Effect of the Settlement Agreement**

1. This Agreement will resolve the Building Trades' challenge to 29 C.F.R. § 1926.1126, promulgated at 71 Fed. Reg. 10100 (Feb. 28, 2006), OSHA's Hexavalent Chromium Standard for the construction industry.

2. In exchange for OSHA's commitment to implement the terms of this settlement by April 20, 2007, the Building Trades agrees to withdraw its petition to review OSHA's Hexavalent Chromium Standard, which is currently pending in the U.S. Court of Appeals for the Third Circuit (BCTD et al. v. OSHA, Case No. 06-2433 (3d Cir.)).

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

April 2007 Settlement Agreement

- Addresses portland cement exposure
- Clarifies OSHA standards and policies
- Calls for OSHA to issue inspection procedures

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Portland Cement Inspection Procedures

- CHSO's must code OSHA-1
- Explains the hazards
- Provides CSHO's with inspection checklist

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Inspection Checklist

- PPE
  - Appropriate and clean
- Sanitation
  - Washing facilities with non-alkaline soap
- Airborne exposures
  - Terrazzo, mixing mortar, mixing concrete

Inspection Checklist

- HazCom
  - MSDS/Labels—Hex chrome content
  - Training on hazards of portland cement/hex chrome
  - Training on protective measures
- Recordkeeping
  - Record cases of occupational dermatitis
  - Inform employees how to report

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Other settlement agreement provisions

- Resolved entire building trades' challenge to standard
- Allows for look back in IMIS database of enforcement actions
- Requires OSHA to encourage adoption by state plan states
- Requires OSHA to notify the public

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Bill Kojola

AFL-CIO
Safety and Health Department
815 16th Street, NW
Washington, DC 20006

202-637-5003
bkojola@aflcio.org
www.aflcio.org

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Peter Lurie, MD, MPH
Deputy Director

Public Citizen's Health Research Group
1600 20th Street, NW
Washington, DC 20009

Phone: (202)588-7781
Fax: (202)588-7796
Email: plurie@citizen.org
Web address: http://www.citizen.org

CPWR THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Chris Trahan, CIH

CPWR
8484 Georgia Avenue, Suite 1000
Silver Spring, MD 20910
301-578-8500

ctrahan@cpwr.com
www.cpwr.com
www.elcosh.org