



In the effort to preserve and maintain the fragile ecology of our planet, these recently selected abstracts are represented to help readers of the *Journal of Materials Engineering and Performance* stay current on legislation and compliance with global environment issues and regulations. They are reprinted from Metals Abstracts and Materials Business File with permission from Materials Information, a service of Cambridge Scientific Abstracts, Bethesda, Maryland, USA.

EPA's Requirements for Risk-Management Programs. Section 112(r) of the Clean Air Act mandates that the U.S. EPA publish rules and guidance for chemical-accident prevention. Section rules must include requirements that facilities develop and implement risk-management programs that incorporate a hazard assessment, prevention program, and an emergency-response program. Facilities are covered by these rules if they have more than a threshold quantity of a listed substance in a process. The EPA issued final requirements for risk-management programs for accidental releases 24 May 1996 (published in the *Federal Register*, 20 June 1996, 61 FR 31667). Facilities with the potential to cause off-site consequences from a release must implement a detailed risk-management program. Fabricated metals is a general manufacturing industry listed by EPA for regulation, although steel plants are not considered a significant source of hazards. Some regulated materials that may be found at steel facilities and their threshold levels are listed. The three tiers of requirements for risk-management programs are outlined.

R. Chalfant. Cited: *New Steel*, Vol 12 (No. 8), Aug 1996, p 117 [in English]. ISSN 0897-4365. PHOTOCOPY ORDER NUMBER: 199610-S4-0062.

Nuclear Regulators Rebuff SMA. The U.S. Nuclear Regulatory Agency has indicated that it is not inclined to suffer the wrath of environmental groups that would likely protest any moves to declassify contaminated electric-arc furnace dust from its current status as a low-level radioactive waste. If so, that means another blow for electric-arc furnace mini-mill owners with the misfortune of accidentally melting radioactive contaminated scrap and attending to costly and complex cleanup procedures. The Steel Manufacturers Association asked the NRC to declassify treated EF dust from its current listing as low-level radioactive waste if the amount of cesium-137 was <100 to 130 pc/g.

N.E. Kelly. Cited: *Am. Met. Mark.*, Vol 104 (No. 141), 23 July 1996, p 6 [in English]. ISSN 0002-9998. PHOTOCOPY ORDER NUMBER: 199610-S4-0057.

OSHA Office Targets Plastics Industry Safety. U.S. plastics industry workers apparently are getting caught in machines in alarming numbers, and the Occupational Safety and Health Administration's St. Louis, MO, office has planned a "strategic intervention" to combat the problem. The program urges plastics and rubber industry companies to use machine shut-off, lockout, or tag-out safety devices during maintenance shutdowns and downtime. Doing so isolates the machine's energy source and might reduce or eliminate the chance of an accident. OSHA announced 1 July 1996 it had looked at 145 eastern Missouri companies with a Standard Industrial Classification starting with the digits "30" and found six deaths at rubber and plastics companies from 1989 to 1995.

R. King. Cited: *Plast. News (Detroit)*, Vol 8 (No. 23), 5 Aug 1996, p 28 [in English]. ISSN 1042-802X. PHOTOCOPY ORDER NUMBER: 199610-P4-0043.

All Systems Go for Third-Party Verification. Board approval by the Chemical Manufacturers of America of responsible care Management Systems Verification (MSV) is seen as a step up for the U.S. chemical industry, which is trying to catch up with Europe and Canada on the implementation of third-party verifications of environmental management programs. While some companies have volunteered to have MSV verifiers scrutinize their programs, several chemical firms are opting for an environmental standards verification from the International Organization for Standardization (ISO) and develop a joint ISO 14001 and MSV audit option for chemical firms. It is uncertain, however, how differences between ISO 14001 and MSV will be resolved. Activity of the Chemical Industries

Association, one of Europe's leaders in third-party verification of responsible care, is noted.

Cited: *Chem. Week*, Vol 158 (No. 26), 3-10 July 1996, p 52, 54, 56 [in English]. ISSN 0009-272X. PHOTOCOPY ORDER NUMBER: 199610-P4-0042.

Cobalt from the OSHA Perspective. Cobalt is not on the OSHA Agency's regulatory agenda nor regulatory calendar and as metal, fume, and dust, is regulated at an exposure of 0.1 mg/m³ of air. Health effects from exposure are a heavy metal-type pneumoconiosis, dermatitis from skin contact, and sensitization or hyperreaction. The metal is not a special emphasis program or a specifically directed inspection target. The Agency must demonstrate significant risk before undertaking any regulatory action, and its regulatory process is outlined.

E.J. Baier. Cited: First Congress: Cobalt and the Environment (Proc. Conf.), Toronto, Canada, 2-3 April 1986, Cobalt Development Institute, Wickford, Essex, U.K., 1986, p 84-90 [in English]. PHOTOCOPY ORDER NUMBER: 199610-G4-0089.

The TLV for Cobalt. Cobalt appeared originally on the Threshold Limit Value (TLV) list in 1963 with a value of 0.5 mg/m³. Human and animal data cited in TLV documentation refer to powdered metal and fume and the current level of 0.05 mg/m³ covers only those two forms of the element. The same TLV for dust seems to be supported by data, but the same cannot be said for fume. The latest reference cited in TLV documentation was published in 1975. The committee that promulgates TLVs is the American Conference of Governmental Industrial Hygienists, a private professional society whose members are industrial hygienists, occupational physicians, and toxicologists employed by government agencies. Proposals for new or revised TLVs are developed by committee members who write the documentation also.

R.S. Ratney. Cited: First Congress: Cobalt and the Environment (Proc. Conf.), Toronto, Canada, 2-3 April 1986, Cobalt Development Institute, Wickford, Essex, U.K., 1986, p 78-83 [in English]. PHOTOCOPY ORDER NUMBER: 199610-G4-0088.

Environmental Regulatory Control (of Cobalt). The water and hazardous waste programs of the U.S. EPA most directly affect the cobalt industry. Pollutants regulated under these categories are considered non-conventional, ones that are not defined as a priority pollutant or a conventional pollutant by the Clean Water Act. In setting effluent guidelines, the EPA is required to establish a level of pollutant discharge reflecting the effectiveness of the best available and economically achievable technology. With respect to hazardous waste, cobalt is not regulated directly under the Resource Conservation and Recovery Act the way it is under the Clean Water Act. The RCRA establishes a system for controlling hazardous waste from generation to ultimate disposal. The EPA has proposed an approach arguing that toxicity alone should be used as the basis for restricting or permitting land-based disposal.

J.M. Campbell. Cited: First Congress: Cobalt and the Environment (Proc. Conf.), Toronto, Canada, 2-3 April 1986, Cobalt Development Institute, Wickford, Essex, U.K., 1986, p 64-77 [in English]. PHOTOCOPY ORDER NUMBER: 199610-G4-0087.

Health and Environmental Aspects of Cobalt Production in Finland. Outokumpu's Kokkola Works, located on the Gulf of Bothnia, employs 1500 persons and has three production units: a zinc plant, a cobalt plant, and a power plant. Domestic pyrite concentrate containing 0.7% Co has been the main raw material used to produce standard metal powder, briquettes, and fine and extra-fine powders. Main by-products of the

processing are copper precipitate, zinc precipitate, nickel salt, calcium molybdate, ammonium sulfate, and sulfur dioxide. Typical exposure levels, cobalt content of airborne dust, and cobalt compounds at the plant are tabulated. Highest exposures occur in the packing of Co powder, where single findings have been up to 2 mg/m³ of cobalt. In other jobs, the exposure limit of 0.1 mg/m³ has been exceeded only in special cases. Since 1967, 11 cases of cobalt asthma have occurred. After 19 years of production no evidence exists for possible carcinogenic effects of cobalt and no signs of myocardial weakness due to exposure were found. In Finland, discharges of industrial waste waters are subject to permits, with conditions stipulated separately for each permit that define specific obligations to carry out pollution-control measures, maximum effluent norms, and compensations. There are no legal stipulations for maximum permissible emissions or air quality standards. The main gaseous emissions of the cobalt production process are ~720 tons/year of SO₂ from the fuel oil used in drying and from the burning of H₂S waste gas and ~390 tons/year of ammonium from the purification stages. The Kokkola Works has studied the effects of sea discharges on marine life and fishing near the plant. No signs of adverse effects beyond the immediate vicinity of the discharge point have been found.

M. Koponen. Cited: First Congress: Cobalt and the Environment (Proc. Conf.), Toronto, Canada, 2-3 April 1986, Cobalt Development Institute, Wickford, Essex, U.K., 1986, p 58-63 [in English]. PHOTOCOPY ORDER NUMBER: 199610-G4-0086.

Platers Squeezed by Tighter EPA Regs. Environmental pressures placed on metal finishers in the United States have been constant since 1973 passage of the federal Clean Water Act. That pressure has been particularly strong since 1983, when the Environmental Protection Agency passed metal finishing effluent guidelines, which included numerous limitations that metal finishing companies must adhere to before discharging effluent into a public treatment plant or directly into waterways. Because of the regulations and the fact that some nickel platers could not afford the proper equipment to meet its requirements, the number of nickel platers has dropped from 3500 to 3800 in the 1970s to 2800 currently. New metal products and machinery regulations proposed by the EPA in May 1995 seek to reduce the amount of nickel allowed in treated water by a factor of about five, compared with its metal-finishing guidelines. If finalized as proposed, there could be a 20 to 30% reduction of the current nickel platers because of associated compliance costs. Existing metal finishing regulations restrict nickel discharge to a daily maximum of 3.98 mg/L and a monthly average of 2.38 mg.

M. Pinkham. Cited: *Am. Met. Mark.*, Vol 104 (Supplement), 6 Aug 1996, p 8A [in English]. ISSN 0002-9998. PHOTOCOPY ORDER NUMBER: 199610-G4-0081.

Pegasus Accepts \$37 Million Settlement for Pollution. Pegasus Gold Corp., based in Spokane, WA, USA, and its Montana-based subsidiary Zortman Mining Inc., have agreed to spend a total of \$37 million to settle lawsuits over outstanding water pollution at the Zortman and Landusky gold mines in Montana. The settlement, filed 22 July 1996 in U.S. District Court in Billings, ends three years of wrangling with state and federal agencies over water-quality violations at the mines. The lawsuits alleged that the companies have discharged acidic, metal-contaminated waste water from two Phillips County mines into waters that drain into the Missouri and Milk Rivers.

Cited: *Platt's Met. Week*, Vol 67 (No. 31), 29 July 1996, p 6 [in English]. ISSN 0026-0975. PHOTOCOPY ORDER NUMBER: 199610-G4-0080.

CERP Program Represents Tomorrow's Foundry. The 1990 Clean Air Act (CAA) may force many U.S. foundries to close or move offshore due to their inability to meet regulations on air toxic compounds

that take effect by the turn of the century. Title III of the CAA increased the number of regulated hazardous air pollutants (HAPs) from seven to 189. In 2000, these HAP emissions will be subject to the Maximum Achievable Control Technology (MACT) standards that the Environmental Protection Agency (EPA) is developing. As a result, foundries will be required to invest more money in added pollution capture and control devices, possibly forcing more foundry closings. The Casting Emissions Reduction Program (CERP) sets up a casting R&D facility at McClellan Air Force Base, Sacramento, CA; provides funds for foundry source testing; and funds the American Industry Government Emissions Research (AIGER) program for low-level manufacturing and vehicle emissions testing. The CERP pilot foundry offers other foundries a production facility where various existing and new technologies can be tested, without having to shut down production at their own foundries.

M. Bindbeutel, B. Haukkala, G. Cole, D. Schuetzle, J. Rogers, S. Tomazewski, L. Dobitz, D. Eppley, S. Knight, and W. Walden. *Mod. Cast.*, Vol 86 (No. 7), July 1996, p 39-41 [in English]. ISSN 0026-7562. PHOTOCOPY ORDER NUMBER: 199610-G4-0074.

Green Laws "Threaten Future of Danish Steel." Strict environmental legislation is eroding the competitiveness and profitability of the Danish steel industry while the government turns a blind eye to the environmental record of cheap structural steel imported for state projects, according to industry officials. A spokesman for Danish Steel Works said that the spate of "green taxes" levied on Denmark's industrial sector in recent years has practically "eradicated" all of the country's heavy industries with the exception of the steelworks and shipyards, and these too are now under threat. He said that the manner in which the laws and taxes relating to energy consumption, carbon dioxide emission, and environmental safeguards are implemented is both misguided and hypocritical.

Cited: *Met. Bull.*, Vol 8079, 16 May 1996, p 22 [in English]. ISSN 0026-0533. PHOTOCOPY ORDER NUMBER: 199609-S4-0055.

Key Environmental, Trade Issues under U.S. Review. In the United States and internationally, efforts are being made to end the imposition of waste-handling regulations on commercial transactions involving generation, transportation and consumption of scrap metals. This is of interest to copper and brass mills, as more than half of the industry's costly raw material is considered by members of government and the environmental community as being "waste." The U.S. Environmental Protection Agency has proposed that the government's Resource Conservation and Recovery Act's definition of solid waste exclude processed scrap metal. Current Superfund legislation fails to distinguish between beneficial recycling and waste disposal, and legislative language in the Superfund reauthorization bill would extend the proposed RCRA exclusion from the definition of waste disposal and thus eliminate Superfund cleanup liability for genuine recycling. Similarly, the U.S. government is trying to prevent an unjustifiable curtailment of international trade in recyclable metals under the Basel Convention.

J. Mayer. Cited: *Am. Met. Mark.*, Vol 104 (Supplement), 26 June 1996, p 10A-11A [in English]. ISSN 0002-9998. PHOTOCOPY ORDER NUMBER: 199609-G4-0073.

LDEO Offers Environmental Compliance Workshops. The Louisiana Department of Environmental Quality is beginning an innovative and voluntary program designed to help Louisiana, USA, foundries and metalcasters achieve compliance with state and federal environmental regulations. The Foundry Compliance Assistance Program is designed to allow facilities to attain compliance in a cooperative atmosphere instead of the traditional enforcement approach.

Cited: *Mod. Cast.*, Vol 86 (No. 6), June 1996, p 19 [in English]. ISSN 0026-7562. PHOTOCOPY ORDER NUMBER: 199609-G4-0063.

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Concoa, Virginia Beach, VA, has introduced the Flashback Arrestor series of arrestors *designed to help prevent and protect against flashback and backfire in industrial gas use*. The high-flow capacity model has a flame trap to quench flames, a nonreturn valve that prevents the reverse flow of gases, and a safety valve that vents excess pressure and combustion debris. A cut-off valve automatically stops gas flow in the event of flashback, and a thermal valve shuts off the gas supply before it reaches critical temperature. Certain models include a warning reset lever and inlet filter limiting the flow of particles that may cause malfunction. For further information, contact: Concoa, 1501 Harpers Rd., Virginia Beach, VA 23454; tel: 800/225-0473.

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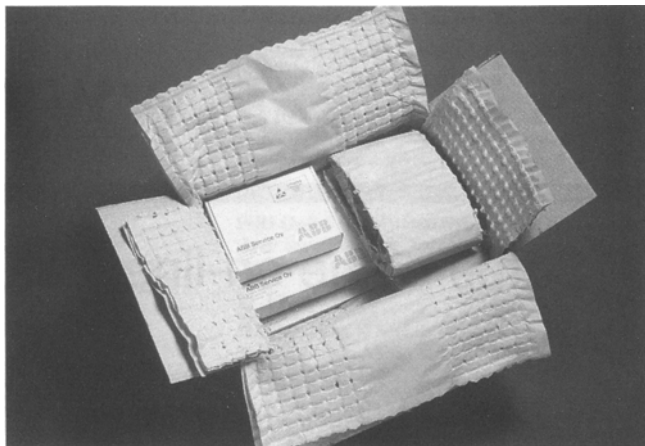


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