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ENVIRONMENTAL POLICY, PROCEDURES
AND GUIDANCE MANUAL



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ALUMINUM COMPANY OF AMERICA
ENVIRONMENTAL AFFAIRS DEPARTMENT

1991 DECEMBER 09

SPECIFIC ENVIRONMENTAL POLICIES

The following summaries of Environmental Policies have application to specific situations. Details on these policies can be found in separate policy statements and guidance manuals.

NON-COMPLIANCE. Alcoa will not operate processes that do not comply with applicable permit limits or regulatory limits unless waivers have been requested of the appropriate regulatory agency and compliance action is underway. Location managers will prepare a written plan of corrective action within 30 days where facts demonstrate non-compliance with our policy. The Business Unit President must approve or gain approval of the plan, the timetable and the funding. The location manager is responsible for implementation of the plan.

WASTE MINIMIZATION. Waste minimization processes will be utilized to reduce or eliminate waste from process operations. (See Waste Minimization Manual)

ENERGY CONSERVATION. Energy conservation processes will be utilized to reduce the impact of process operations on the environment.

CONTRACTS. Contract managers will require any parties with whom we have a contract for services to conduct themselves in accordance with our environmental policy when performing work for Alcoa locations.

ASSESSMENTS. All transactions that exchange real property must have an environmental assessment sponsored by the project manager. (See Acquisition & Divestiture Statement)

AUDITS. Periodic environmental audits of all operating locations will be conducted by the Environmental Affairs Department or by auditors that meet requirements established by the Environmental Affairs Department. (See Environmental Audit Policy Statement)

COMMUNICATION. Environmental issues will be communicated freely and openly within and outside the corporation. Business Unit management and staff support groups will respond to public inquiries about significant environmental issues and operating managers and staff support groups will promptly communicate significant environmental developments which may have a direct impact on the public.

ASBESTOS. Alcoa will manage asbestos in place where it can be properly encapsulated. Friable asbestos will be marked and monitored. Upon sale or purchase, all friable asbestos will be removed from buildings or equipment. Deviations from this policy must be accompanied by written authorization from the appropriate Business Unit President. (See Policy Statement)

CONSENT DECREES. No Alcoa officer should sign a consent decree or obligate Alcoa to a plan of action without a full understanding of the nature of the obligation, the potential penalties involved and the technology limitations that apply. (See Consent Decree Policy Statement)

POLYCHLORINATED BIPHENYLS (PCB). Alcoa operations should eliminate PCBs from all open systems. Electrical (closed) systems should be reduced to 10 ppm PCBs or less through retrofill or replacement. All PCB contaminated surfaces in work areas should be cleaned to 10 ug/100cm². Other surfaces should be cleaned to 100 ug/100cm² or encapsulated. Appropriate regulatory guidance should be followed in all cases. No equipment contaminated with PCBs shall be purchased or sold for reuse, unless it can be cleaned to acceptable regulatory standards. (See PCB Policy Statement)

GENERAL GUIDANCE

These General Guidance statements are designed to provide basic focus on issues that are faced by many operating locations. Deviations from these guidance objectives may occur, but plant and Business Unit Management must be fully aware of these deviations.

LAND MANAGEMENT.

- o Alcoa will restore all disturbed land in mining areas to sustainable productive land use within five years after mining has been completed. Alcoa will emphasize the use of native species for reclamation and will attempt to return the land to pre-existing condition unless there is a proven need for a changed land use.
- o Alcoa will manage all undisturbed land around operating locations, power sites and sites where future activities may occur to maximize the natural habitat and environmental productivity of the sites. Ecologically important areas will be protected. Green belts are encouraged around operating locations.

ENVIRONMENTAL MANAGEMENT

- o Environmental management programs should emphasize prevention and elimination of pollutants rather than control of discharges and emissions.
- o Long-term strategies should be developed to fully incorporate environmental issues into production activities.
- o Sound monitoring and measurement programs are required at each location to identify opportunities and measure progress. Air emissions, water discharges, residue management, emergency incidents, raw material usage, soil, groundwater, air and receiving water quality should be monitored as appropriate.
- o Release Prevention Control and Countermeasure (RPCC) Plans are required at each location to address emergency situations. The RPCC Plan should follow the corporate format with personnel training programs instituted to implement the plan.
- o Each location should have a system of recording and reporting information on compliance and emission reduction in accordance with corporate reporting guidelines.
- o Each location should have a system to ensure that all wastes and by-products that leave the plant site are handled in an environmentally-acceptable manner.
- o Each location should have appropriate training programs to ensure that required environmental training and effective supplemental training is provided to all employees. Inside and outside resources can be utilized. Training recordkeeping is an essential part of a successful program.

AIR EMISSIONS

- o Continuous monitoring equipment will be incorporated into all new processes as they are installed when such equipment is available and the emissions from the process are within 25 percent of the regulatory limits.
- o All sources of volatile organic emissions that exceed emission rates of three (3) pounds per hour should be evaluated for controls.
- o All fluoride emission sources should be equipped with devices to continuously monitor emissions or continuously monitor the status of the equipment.
- o No sampling program should be modified or aborted due to process upset, unless the process will be shut down to correct the malfunction.
- o The use of chlorinated solvents in open (uncontrolled) systems will be minimized. By 1996, chlorinated solvents will be used only in fully controlled applications.
- o The use of CFCs and Halons will be eliminated by 2000.
- o Natural gas is the recommended fuel for process heating and thermal oxidizer systems.
- o Low NO_x burners will be used in all new and retrofit applications.
- o Ambient air monitoring stations will be utilized at all smelter and refining locations and at all significant sources of VOC, SO₂ and particulate emissions.
- o Fluxing with gaseous chlorine should be programmed for reduction and complete elimination within ten years.
- o The emission of long-lived gases should be eliminated where possible and reduced to minimum levels in all other cases. B.U. management should be made fully aware of all remaining long-lived gas emissions.
- o Pressurized gases must be stored in permanent containers with continuous monitoring systems to detect releases. Gas loading operations must be monitored continuously by an operator. Gas distribution systems must utilize "hard" pipes and connectors. All valves should be fail closed.

WATER DISCHARGE

- o Alcoa locations will meet all permit limitations 100 percent of the time. Where necessary redundant systems will be utilized.
- o Continuous discharge monitoring equipment will be utilized when the technology is available.
- o All sampling results from permitted Alcoa discharges will be included in reports to regulatory agencies.
- o Water use reduction will be emphasized at all locations through recycling, cascading and process modification.
- o Storm water quality will be maintained through house-keeping, appropriate use of dikes and containment systems, and indoor storage, where possible.
- o Alcoa will recirculate or reuse cooling water at all locations to minimize discharge volumes and contamination potential. The use of once-through cooling water is no longer acceptable.

SOLID & HAZARDOUS WASTE

- o Alcoa will utilize only approved transporters and disposers of solid and hazardous wastes. All transporters and disposers must have passed Alcoa's audit process within the last three (3) years.
- o Alcoa will not initiate any new on-site landfills (except monofills) and will work to fully close all existing active and inactive landfill sites.
- o Alcoa will follow special procedures to disposal of the following wastes that currently may be unregulated -- Tires, lead acid batteries, other batteries, light bulbs, ballasts in light fixtures, small electrical equipment, outdated pesticides, laboratory chemicals, paint cans, solvent containing rags and clothing, cleaning fluids, and motor oils and grease.
- o Alcoa will manifest all wastes shipped off site and maintain manifest records for 30 years. Copies of all manifests will be sent to Pittsburgh Environmental Affairs via paper or electronic mail.
- o Waste minimization program reports will be prepared annually by operating locations, demonstrating waste volumes and reductions achieved.
- o Waste assessments will be conducted on all new processes and products before they are implemented at operating locations. The assessment will include a determination of whether the ultimate waste streams can be appropriately managed at the facility.
- o All hazardous waste must be detoxified before final disposal. Any waste material that is landfilled in a form that may result in future environmental problems must receive the written approval of the appropriate Business Unit President.
- o Special landfills for high volume wastes such as fly ash, scrubber sludge, bauxite washing fines, bauxite residue and magnesium slags must be designed to produce a final disposal site that is environmentally benign and will not hinder long-term land use options.

STORAGE TANKS

- o Alcoa will not install any new underground storage tanks or underground piping systems (all piping systems should be in vaults). Existing underground tanks and piping should be removed as quickly as feasible.
- o All active underground systems (tanks and piping) should be pressure tested annually.
- o All above ground tanks will be protected by impervious containment systems (walls and floor) with the capability to contain 150 percent of the entire tank volume. Drain systems must be designed to fail closed and be tagged out at all times.
- o Transformer vaults and stone filled bases must be drained to a central location where discharge water can be monitored before reuse.

SOIL & GROUNDWATER PROTECTION

- o All liquid loading and filling operations will be conducted in impervious and diked areas and will be monitored at all times during operations when liquids are flowing.
- o All new storage vessels will be equipped with fail closed valves. Valves and spigots with the potential to drip or leak while not monitored will be eliminated as quickly as feasible.
- o No pits, ponds or lagoons will be used for storage or treatment (except sedimentation without chemical addition) of wastewater or sludges. Only water suitable for direct discharge will be collected and stored in lagoons or ponds.
- o Chlorinated solvent drums or tanks should be stored on concrete pads. More impervious materials must be used or the concrete must be sealed with appropriate materials.
- o All locations must have a drum management program that minimizes drum usage, designates specific drum storage areas, protects against mishandling of drums and wastes in drums, and designates a person or persons responsible for drum and drum contents disposal.
- o The use of sumps and trenches under operating equipment should be minimized. Where such sumps and trenches are required, they should be lined with welded steel plate to reduce the potential for cracking, leakage and corrosion by rolling oils, cleaning fluids and chemicals.
- o Soil remediation activities should be conducted where contamination levels have the potential to produce leachate that exceeds 100 times the appropriate drinking water standards. More stringent cleanup standards may be required by some regulatory agencies.