Environmental and Labor Issues

This is a category III project according to the IIC's environmental and labor review procedure because it could produce certain effects that may be avoided or mitigated by following generally recognized performance standards, guidelines, or design criteria. The main environmental and labor considerations related to the project are: liquid effluent and air emissions management, noise, solid waste management, labor practices, fire safety, personal safety, and emergency response.

The parent company in Italy is ISO 9001-, ISO 14001-, and OHSAS 18001-certified and has other certifications for industry and its applications (automotive industry, pressure vessels, etc.). Arvedi is planning to obtain ISO 9001 and ISO 14001 certification from the Brazilian certification authority. The company prepared a document entitled Directrices sobre Salud Ocupacional, Seguridad y Medio Ambiente [Guidelines on Occupational Health and Safety and the Environment], which identifies environmental and occupational risks and spells out control and monitoring procedures.

Liquid effluent management: Arvedi's industrial plant will be equipped with a drainage system that separates waste, permitting separate collection of the following effluents:

• Wastewater from the degreasing and pickling lines
• Wastewater from the rinse after phosphate coating
• Sewage from toilets
• Rainwater

In all cases, chemically treated water in suitable condition is filtered and reused in the same processes. Rinse water is reused to prepare the respective solutions. Water requiring treatment is neutralized with the appropriate reagents and channeled to an equalization tank with an oil-water separation system; the tank also receives liquid effluents from other areas of the plant (water purged from boilers and cooling towers, gas-scrubbing plant, and condensation from compressors and the electrical substation). The water is treated with polyelectrolytes in a flocculation tank with microbubbles and is subsequently decanted. The treated water is then filtered and reused. Surplus industrial wastewater, spills, and waste from the chemical treatment baths, as well as other liquid industrial waste (e.g., lubricants, solvents, varnishes, paints) are sent to a third-party company authorized to treat liquid industrial waste.

Liquid waste from toilets (sewage) is channeled to the sewerage system for treatment at a municipal plant. The company is studying a project for separating wastewater from shower facilities for subsequent treatment and reuse in the toilets to conserve water. It also has a project for capturing rainwater for industrial use. The water supply for the entire plant currently comes from a perforation well with a 10 m3 per hour capacity, authorized by the Department of Water and Electricity of the State of São Paulo.

Air emissions: Chemical treatment baths containing substances that can prove harmful or hazardous when airborne are equipped with a gas extraction system that generates a surface flow in the bath that is captured, removed, and sent to a gas scrubber. The gas scrubber operates with a backwash system. This water is neutralized and sent to the liquid effluent treatment plant. The gaseous effluent is monitored prior to its release into the atmosphere.

Other sources of emissions in the first stage of the process are the annealing furnace and boiler smokestacks. This equipment runs on natural gas, so it does not produce harmful air emissions. Smokestack emissions are also monitored.

Noise: Any tube drawing process, which includes techniques such as blunting, stretching, cutting,

and straightening, is noisy. Added to this is the noise from positioning the tubing before and after the process. The use of hearing protection equipment is both necessary and mandatory for all plant personnel. Noise in the vicinity of the plant is not an issue, because the facility is located in an industrial zone with high levels of ambient noise from traffic on highway SP-075. The plant and auxiliary service buildings (i.e., compressors, boilers, cooling tower, gas scrubber, effluent treatment plant) have enclosures that keep noise levels outside the plant within authorized limits.

Solid waste management: The principal solid waste produced by the process is scrap metal, which has commercial value and is sold through raw material suppliers themselves or other market agents. The principal hazardous industrial waste is sludge from the effluent treatment plant. This, along with any other hazardous waste produced, is treated by an authorized third-party company.

Receptacles from the chemicals used in the process are returned to suppliers. Used reactive soap is returned to suppliers for recycling. Other nonhazardous solid waste is recycled or sent to a landfill.

Management of hazardous substances: The processes use some chemicals that are considered hazardous, as well as hydraulic lubricants and oils. All of these products are stored in closed, ventilated warehouses that are separate from the main buildings and have floors with a gradient sloping toward drains and containment chambers. Access to these warehouses is restricted. The personnel that handle these chemicals are given specific training and have personal protective equipment, as well as emergency showers and eyebaths. The company is registered with the Federal and Military Police for the use of controlled substances.

Fire safety, personal safety, and emergency response: The Guidelines on Occupational Health and Safety and the Environment identify occupational risks in the workplace, classified as physical (noise, vibration, extreme temperatures), chemical (exposure to acids, oils, and solvents), and biological (effluent treatment). They also identify risks associated with the work performed (ergonomic, electrical, working at heights, cargo handling and storage, moving parts of machinery, boilers, furnaces, and fire and explosion risks). All personnel receive specific training in these areas, with instruction on safe work procedures and the use of personal protective equipment. In compliance with Brazilian law, the company has a safety technician on staff. The Internal Accident Prevention Committee (CIPA), made up of three employees elected by the workers and three by the company, evaluates hazardous situations and recommends preventive or corrective action. These recommendations also apply to external contractors.

The plant is equipped with fire detectors, a fire response network, fire suppression equipment, escape routes, emergency lighting, and a diesel-powered electric generator to activate the pumps. The company has internal brigades that receive training.

Labor practices: Arvedi complies with Brazilian labor laws. Mandatory core labor standards include: legally-mandated benefits, freedom of association, organization of workers' unions, and nondiscrimination in the workplace. Arvedi participates in System S, implemented by the technical schools of SENAI (National Service for Industrial Training), SENAC (National Service for Business Training), and SESI (Industry Social Service) to provide youth between the ages of 16 and 18 with technical skills for industry. Arvedi employees receive a medical check-up before they are hired and annually thereafter. They receive medical and accident coverage through health insurance for employees and their dependents. The National Social Security Institute (INSS) covers retirement pensions and insurance for disability and prolonged absence from work.

Monitoring and Reporting: Arvedi will prepare an environmental and social action plan (ESAP) to ensure compliance with national regulations and the IIC's environmental and occupational safety and health guidelines. It will also submit regular progress reports on the implementation of the

ESAP.