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ALLIED-SIGNAL'S environmental system of excellence

Allied-Signal's formal world-wide Health, Safety & Environmental Policy, issued by its chief executive officer, Edward L. Hennessy, Jr., includes the affirmation: "It is the policy of Allied-Signal Inc. to design, manufacture, handle and distribute all products and to dispose of all materials safely and without creating unacceptable risks to health, safety or the environment."

The policy also states that Allied-Signal will "establish and maintain programs to assure that laws and regulations applicable to its products and operation are known and obeyed; adopt its own standards where laws and regulations may not be adequately protective, and adopt, where necessary, its own standards where laws do not exist; and stop manufacturing or distributing any product or carrying out any operation if the health, safety or environmental costs are unacceptable." The policy specifies a number of actions to which Allied-Signal is committed to carry out the policy. These include the identification and control of health and environmental hazards stemming from its operations and the sponsorship of accident prevention and occupational health programs to protect employees and the public. The policy also states: "Every employee is expected to adhere to the spirit as well as the letter of this policy. Managers have a special obligation to keep informed about health, safety and environmental risks and standards and to advise higher management promptly of any adverse situation which comes to their attention."

Allied-Signal's cumulative environmental capital and operating expenditures between 1970 and 1985 amounted to over $250 million and have averaged approximately 8-15 per cent yearly of total capital investment by the corporation for each year since 1972. As its capital expenditure increased, so did the number of qualified persons dealing with environmental matters until today the environmental staff numbers about 400 professionals throughout the corporation, from executive offices to the plant levels.

The Corporate Environmental Affairs Department consists of about 34 environmental professionals and is organized into six units:

- Pollution Control
- Worker Safety & Property Loss Prevention
- Medical Services/Toxicology
- Industrial Hygiene
- Product Safety
- Internal Inspection & Surveillance

Allied-Signal's environmental effort is headed by a vice president who reports to the corporate senior vice president of technology. In addition to Law Department support, the corporate department works closely with public affairs and others.

Recognizing the benefits of a multi-discipline approach to environmental matters, the directors of the units within the corporate environmental department meet approximately weekly to discuss policy and mutual concerns. The corporate Environmental Affairs Department is responsibly for 1) policies, overall programs and coordination, environmental planning, major assurance program and review of environmental financial matters, and 2) training, inspection and follow-up. The operating company, sector and plant environmental staffs (composed of basically the same six functions) have responsiblity for the day-to-day hands-on operation.

The success of Allied-Signal's environmental program is perhaps best illustrated by its very

ALLIED-SIGNAL INC.

Allied-Signal Inc. is a world-wide advanced technology company whose primary businesses are aerospace, electronics, automotive products and engineered materials. Headquartered in Morris Township, New Jersey, USA, the corporation employs 140,000 people at 650 facilites in 90 countries. Annual revenues are nearly $12 billion, and the company spends more than $1 billion per year in research, development and engineering. Allied-Signal businesses operate under such well known names as Allied Chemical, Bendix, Fram, Jurid, Garrett, King Radio and UOP.

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successful approach to worker safety and property loss prevention world-wide. Each year the corporate Safety & Loss Prevention group coordinates the setting of safety goals, conducts training programs and upgrades the goals to assure continuing efforts to achieve a solid safety record. The plants are responsible for their safety performance, and safety is taken seriously at every level of the corporation's activities. Allied-Signal is an industry leader in safety performance, and the cost of savings go, of course, directly to the bottom line.

Each of Allied-Signal's three operating sectors (Aerospace and Electronics, Engineering Materials, and Automotive) have safety staff who are responsible for assisting the line in implementing safety programs and improving safety procedures.

Reports on achievement of safety objectives are made regularly to top management. If the objectives have not been met, steps are taken immediately to rectify the situation. Those involved in Allied-Signal's corporate and operating company management eligible for year-end bonuses for increasing profitability have had a percentage of the bonus based on safety performance as measured against the yearly safety goals established for that unit.

Allied-Signal strives for an injury reduction rate each year. In its total case incident rate and lost workday cases incident rate (both per 100 employees for the past four years was:

Year	Total Cases Incident Rate★	Lost Workday Cases Incident Rate★
1982	2.96	1.26
1983	2.39	0.99
1984	2.03	0.85
1985	1.70	0.66

★ U.S. and Canadian incidence rates per 100 full-time employees, using 200,000 employee-hours as the equivalent.

Such performance is kept and monitored world-wide by the corporate and Sector Safety Staff, which works with the operations in setting goals, establishing programs, training and follow-up.

Safety engineers employed within the corporation and from outside services periodically inspect Allied-Signal plant locations, checking potential and actual hazards, including process hazards, possible unsafe working procedures and hazardous working areas. After the inspections, the engineers sent letters confirming inspection, and/or recommendations to the plants, which are monitored by management personnel.

During the year, each company and the corporate management not only monitor how well the safety objectives established at the year's beginning are being met, but carry forth a comprehensive safety program tailored to their needs. Allied-Signal's 1986 "Strive for Excellence" safety program revolves around themes:

1) Hazard Identification/Evaluation
2) Probable Maximum Loss
3) Government Regulations/Legal Liabilities
4) Education and Training — Communications
5) Safety & Loss Prevention Guidelines
6) Capital Appropriation Request
7) Accident Prevention Plans & Statistical Objectives
8) Assurance Reviews

These themes are highlighted at management meetings and then programs implemented through plant safety meetings, where employees meet in small groups to permit individual employee participation in problem solving and in executing safety procedures. Each worker is reminded of his responsibility to himself and his fellow workers for maintaining a safe working environment.

At many of the monthly safety meetings, video cassette tapes of about 20 minutes length produced by the corporate safety department at Allied-Signal plant locations are shown. The video tapes are accompanied by workbooks. The same tape may be presented at many locations to develop the current theme of the program. For example, one such tape is entitled "Safety is Caring . . . About the Proper Use of Protective Clothing and Equipment". It stresses the role played by protective clothing and equipment in assuring worker safety. Respiratory protection and a variety of gear, both commonplace and exotic, is described. The tape tells employees that injuries due to failure to wear protective clothing are the most preventable of all.

The "Strive for Excellence" safety campaign is publicized in several ways, including display of a series of eye-catching photographic posters and other material distributed at the beginning of the year to plant locations. Programs at different Allied-Signal sites are developed on the same theme concurrently. The themes are changed periodically to accent a different safety concept.

In addition, Allied-Signal conducts special safety training courses for supervisors to teach them how to instruct their workers in safe working procedures. Workshops for all safety professionals are held annually in the U.S., in Europe and in Latin America, for example, at which case histories, current safety programs, and Allied-Signal's comprehensive and strict safety standards are discussed. The Corporation also holds technical loss prevention sessions during the year on topics such as combustion control and fire prevention technology. Some of these programs are on cassettes. One tape, for example, is "The Supervisor as an Educator". It describes the basic educational tools needed by the supervisor in fulfilling his responsibilities in the field of employee safety training.

A second example of the environmental program's value is The Risk Assessment Committee (which Allied-Signal calls TRAC) and the Product Integrity Committee (which Allied-Signal calls PIC) to do risk and hazard evaluation and product defect review.

The "Strive for Excellence" safety program and the Product Integrity Committee are part of a fabric on interrelated programs carried out at the company and plant levels "to establish and maintain programs to ensure that laws and regulations applicable to its products and operation are known and obeyed" both in "spirit as well as the letter . . . ", including "to advise higher management promptly of any adverse situations . . . "

Other important programs include:

Product responsibility, in which the operating businesses plan and carefully carry out their activities in a manner designed to meet their obligations in research, product development, manufacturing, distribution, and sale of its products so as to ensure a high and competitive degree of product safety.

Comprehension *pollution control* management, in which the corporation's manufacturing operations are permitted and monitored to carry out proper air, water and solid waste disposal practices, including careful procedures for disposing of wastes in licensed locations.

Occupational health, medical and nursing guidelines, and education and training, to ensure a high level of attention by company health personnel to the corporation's workers.

An *environmental data system* to store and retrieve health and safety, as well as product toxicity and waste management control information, required by regulation and/or critical to the safe operation of the company's manufacturing plants and businesses.

Assurance Reviews or inspections with follow-ups based on Allied-Signal standards and keyed to Allied programs as well as compliance with local laws and regulations by skilled health, safety and environmental professionals 1) from the corporate group and the operations and 2) from outside inspections in, for example, the insurance undustry. An independent *surveillance system* which on a sampling basis world-wide, reviews various environmental aspects of the Allied-Signal plant activities and reports to plant management deficiencies found so that they may be expeditiously corrected.

All these programs work together at corporate, sector, and plant levels to help Allied-Signal strive toward its goals of environmental excellence.

Allied Signal

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