



WITH ENVIRONMENTAL PROBLEMS



TEXTILE TECHNOLOGY/ECOLOGY INTERFACE

1975

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Robert T. Miki, U. S. Department of Commerce

EPA's Industrial Hazardous Waste Practices Studies
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INTRODUCTION

Harry T. Zika

The fourth biannual symposium of the RA58 Committee finds the textile industry in difficult times. Inventories are up, profits down; meanwhile, the textile technology/ecology interface has assumed an immediacy which ranks in importance with dye shade matching or fabric quality control. A positive note this time is the fact that the picture is now much more sharply etched and that there is a solid background of experience with EPA and OSHA regulations and decisions. Much of importance has occurred since the last such symposium in 1973. Final Textile Industry Effluent Guidelines were issued by the EPA in July 1974; these came as no great surprise to the textile industry, since they had been preceded by preliminary Guidelines. It is true that portions of the Guidelines have been legally challenged and a decision regarding the final effluent guidelines limitations have been postponed by Federal court order, pending further joint studies by EPA and ATMI. However, the Guidelines, postponed or not, represent but one facet of the textile interface. Other obvious interfaces are those of air pollution control, solid waste disposal, and OSHA regulations.

Each of these interfaces is built into the program material of this symposium. Being number four in a series covering a six to seven-year time span, the symposium can provide to the textile industry much information based on the experience of past confrontations with regulatory agencies on one side of the interface, and current directions in pollution control technology, on the other side of the interface.

During the two years since the last symposium in Washington, a menacing new problem has had a serious impact on our industry, that posed by the energy shortage, with attendant escalation in energy costs and enforced changes in manufacturing procedures. This, too, is included in our program, albeit briefly.

Obviously, the regulated in attendance from the textile industry will obtain a wealth of pertinent information during these two days. Hopefully, the regulators from state and federal control agencies who meet with us will acquire keener insights into an enlightened understanding of the very real problems occurring at the interface.

FACE TO FACE WITH ENVIRONMENTAL PROBLEMS

Glenn E. Moore

INTRODUCTION

As we open this symposium today with the first session, "The Environmental Challenge", I hope that we are able to come "Face to Face with the Environmental Problems" that are presented.

Some of these problems will be addressed by speakers later in the program. Joe Ameen will try to face the challenge and he will be joined by many others. I am just the "placer of the targets." Hopefully, we will have many "marksmen" and even a "sharp shooter" among the speakers that follow.

Barry Commoner said, *"It would appear possible to reduce the environmental impact of human activities by developing alternatives to ecologically faulty activities. This can be accomplished not by abandoning technology and the economic goods which it can yield, but by developing new technologies which incorporate not only the knowledge of the physical science ... but ecological wisdom as well -- a process with serious economic, social, and political implications."*

Human activities in our society and our life style bring each of us "Face to Face" with some environmental problems almost every day. Most of us here today face more than one environmental problem every day. We see these as we travel from our homes to work, whether we go by car, train, bus, or plane.

Anyone who can see, hear, or smell is made aware of noise, odors, and change in the landscape as they pass. New developments, new buildings, roads, muddy streams, smoke from chimneys, stacks, and jet trails all make us aware of changes that lead to environmental problems. These are the apparent problems, many of which are subtle and are passed by unnoticed by the average person. If such a person exists today, I seem to meet more and more "experts" every where I go.

These "experts" have learned to detect ENVIRONMENTAL problems every where. Most of the time, the hardest problem to solve is the one that they, "the experts", want corrected FIRST. I'm sure all of you here today know someone like this. I don't mean to "put down" the "experts" because if it wasn't for them, we wouldn't be here today looking at the "Environmental Challenge". It is real and we must face it, the sooner the better.

Land Use Issues

The impacts of land development on the environment may well be the most important issue here today.

How the land is used determines to a large degree the overall "environmental impact". The "Cost of Sprawl" showed many of the environmental areas affected.

Better planning methods are needed so the development stimulants can be better understood. Federal, state, and local taxes are stimulants because some types of developments receive favorable treatment. The Clean Air Act and the Federal Water Pollution Control Act (PL92-500) have potential land use impacts. Funding of new public facilities has direct and indirect impacts on certain land uses. Highways and new sewers have had great impacts on developments. Last, but far from least today, land use has a very great impact on energy. We have all seen this at the gas station, in our light, fuel or gas bills.

Land use control is an area that every level of government is now attempting to regulate. Regional planning, zoning, and other regulations such as preferential assessments predetermine the land use thereby controlling the development in some orderly manner. There are needs for open space preservation and there is increasing evidence that this is economically beneficial to all.

Progress is being made in land use controls, but the mechanisms must be understood by all involved parties before the decisions on how to use the land is finalized.

Energy

Energy, as a major item in the environmental challenge, appeared in the last several years. Long lines at the gas stations, odd-even days for gas purchases, and higher prices for the gas are all examples. All of these things had the most noticeable effect on the public. Energy conservation emerged as a matter of national importance and the rigid link between energy growth and economic growth is no longer self evident. Managers, planners, and decision makers at all levels of the Federal, State and Local governments, industries - large and small - and even you and I have to realize that economic and social goals can be achieved with lower levels of energy use. To what extent this is possible determines how much the environment will benefit.

Can we grow economically with lower energy use? We have passed the peak of domestic petroleum production. Nuclear energy in the form of electrical power is increasing, but faces many obstacles such as safety, effects on the environment, and large capital expenditures. Coal use has declined over the past few years because of strikes, environmental problems, and cost. However, coal is our most abundant fossil fuel and the energy gap between petroleum and nuclear energy sources may have to be bridged with coal. The problems, many of which are environmental, must be solved if we are to span this energy gap.

Air Quality

The air quality area has posted many gains in the past few years as many of the problems were corrected because of their

high visibility. However, the energy shortages, Arab oil mainly, has slowed progress in many air quality improvement areas. Large utilities are resisting scrubber technology because of unproven results. Auto makers are having problems with the catalytic converters and have had the emission standards moved ahead. Mechanics are suffering respirator ailments because of SO₂ discharges while working on cars with the catalytic converters, much more so than from the discharges of cars still burning leaded gas with no catalytic converters.

So we go back to the drawing boards on this one. The 1975 Congress may still solve this one with amendments to the Clean Air Act.

Solid Waste

Solid waste had really mushroomed since we became a "throw away" society. No return bottles, cans, and just about anything else you care to name has become a problem. What do you do with it all? Land fill sites are becoming hard to find. Reclamation of many of the "throwaways" are not economical now, but may soon be because of energy and shortages of raw materials.

Many hazardous waste materials find their way to land fills for disposal. These can prevent problems in another area---groundwater.

Sludge waste from advanced water treatment (AWT) present a problem to many here today. Just what do you do with all that sludge? Does anybody know?

Water Quality -- National Pollution Discharge Elimination System

How all of us - - - that word?

The NPDES Permit Program has caused all of us here today many problems--the Feds, the State, the industries, and anyone else who has had to work on them or with them. Deadlines, compliance, regulations, and guidelines for permits have caused a real "paper blizzard." The issuance of point source discharge permits (NPDES) by the thousands has been and still is an enormous and complex task. When this task is "complete" then comes the permit compliance. Troubles have just begun!!

Where does everyone find the time, people, resources, and knowledge to keep the dischargers in compliance with their permits? Self monitoring by the discharger is required in the permit. Can the data be believed by the regulatory agencies? Many of the dischargers have no laboratories, and many who do, cannot do the testing necessary by the approved methods. Who can help? Who will help?

Training is needed and is being provided in some areas. Simpler analytical methods are needed. BOD₅ is a difficult test to understand and even more difficult to control. American Society for Testing Materials (ASTM) did away with it for that reason. What do we have to replace it with? As of now, nothing. We are stuck with it until something better can be found.

Other test methods suffer from some of the same weaknesses as the BOD₅ test. Total coliform (MPN) the old method used to determine bacterial contamination suffers from the shortage of the testing media - brilliant green agar. Membrane filter (MF) does not give accurate results on chlorinated effluents. Chlorine residue by ortho toluidine suffers because ortho toluidine has been determined a hazardous material and chlorine is suspected of killing fish and other aquatic organisms.

Growth has kept the waste load from municipal treatment plant to the streams about equal although many plants have been upgraded at great expense. This is most disturbing to a regulatory agency trying to clean up our waters by 1977 or 1983. Many industries can do a better job than just staying EVEN.

Non-point source pollution may be an even greater problem than point source. It certainly is harder to determine who caused it. Also, it can come from so many places. After point source problems are corrected, and they will be. Then some priority can be given to NPS pollution.

Hazardous Pollutants

Hazardous pollutants or materials do not fit into any class specification by types but are a wide and specific group. Mercury, PCB, asbestos, pesticides, vinyl chloride, lead, and radio-active waste all have specific toxicity or present specific hazards to workers or persons exposed to them. Some are called carcinogens, but proof is vague and unclear because years are needed before a person will develop symptoms after exposure. Asbestos, for example, takes 20 to 40 years after exposure before cancer symptoms develop. Vinyl chloride exposure causes liver cancer, but it may take 15 to 20 years. If you get exposed to these two "toxic" substances - your fate is sealed 15 to 40 years down life's road. Can we really be concerned with such matters when so many others present a more immediate hazard?

Pesticides, such as DDT, have been banned, and others may follow. Are the substitutes any less of a hazard? PCB has met the same fate as DDT, but tons of PCB and DDT are still around and being used.

Lead in gas has poisoned our air, consequently we have gone to non-leaded gas so we can use the catalytic converter. It sprays the air with sulfuric acid and must be improved!! And it has only cost several billion. How do we solve this one?

Heavy metals have created many environmental problems. We all remember mercury. Well, we got through that one, but metals do present a very real problem to the aquatic environment. Fish, shellfish, and others disappear when subjected to heavy metal waste.

Radio active materials have gotten such a "bad reputation" that no one wants anything nuclear near them. AEC did a good job of making us all aware of the nuclear damages, but can there also be benefits and who will convince us of them. How long will it take?

Noise

We have all been passed by a truck on the highway that made so much noise it was almost unbearable. Trucks, jets, construction equipment, and trains are the most noticeable noise makers that the general public sees or is aware of.

Industrial workers know other noise makers such as heavy machinery, jack hammers, etc. All of these cause certain stresses on workers which can lead to accidents or affect the performance of their work. In many areas, the noise levels can be reduced. Levels of exposure have been proposed. If met, perhaps this problem can be corrected in most industries.

Outside noise makers like planes, trains, and trucks present a more costly and perhaps a more difficult problem--but it too can be solved.

NATURAL WILDLIFE PROTECTION

Land

Protection of wildlife on land is still limited to species huntable such as deer, quail, pheasants, etc. Almost all of the money (about 96%) comes from licenses and taxes on sporting goods paid by hunters and fishermen. These groups make up a very small percentage of the population, but have carried the conservation and protection of wildlife for many years.

Recently, other groups have become interested in saving other endangered species of wildlife other than the shootable kinds. Nearly 10% of the higher animals (mammals, birds, reptiles, and fishes) are endangered.

The greatest alteration to wildlife habitat is man. Man's activities help some species. Agricultural and forestry practices provide examples of these varied effects of human actions. Also, native species have been threatened by introduced species, as they sometimes carried diseases or are host for parasites that affect native species and man as well. Many of the introduced species have no natural enemies and multiply quite rapidly.

Water

Much the same thing can be said about the water animals (fishes, shellfish, etc.) that has been said about the land wildlife. Fishermen, through licenses and sporting goods taxes, have carried the burden for years. Only in the past few years help has come from other groups. However, most of these groups have contributed little in the way of money to the cause, but have been effective in having laws passed where money could be used for the protection of fish and endangered species.

Again man's activities have contributed greatly to the loss of waterways, lakes, and streams needed for suitable fisheries. This has shown up a great degree in coastal zones, estuaries, and the tidal marshes where many of the estuarine species spawn and have their nurseries.

It has been reported that one state has lost 67% of its coastal estuaries' habitats in the process of coastal development over the past 20 years. Many other states are now facing similar problems with coastal development.

Waste discharges to our waterways, streams, and lakes have similar effects, however, they are not so noticeable. Massive fish kills and duck kills are generally the first signs that are seen and by then it is generally too late to take corrective action. Many of the toxic substances have low level effects which weaken the fish. The fish die only after some other stress has been put on them. Other substances cause immediate fish kills, or produces algae blooms which can be toxic or can deplete the dissolved oxygen to levels where fish cannot live.

Air

Smoke, smog, haze, or whatever it is called causes problems to all animals including man, birds, and even fish if it settles on the water. Metals from fossil fuel smokes are quite bad as is lead from gasoline burned in cars. Other gases that create problems to all air using creatures are: NO_3 , SO_3 , CO_2 . As many of the air problems are corrected, they may lead to additional water quality problems.

Therefore, all of the problems should be addressed together as land, water, and air because correcting one type may create additional problems in some other area. Somewhat like the old physics equation: ACTION - REACTION!! They just can *not* be separated.

MINERAL AND MATERIAL RESOURCES

Minerals and materials are required for economic and social developments here in the United States and throughout the world. The fuel shortage, caused by the Arab embargo, renewed our attention on other resource availabilities. How are supplies of other minerals and material? Can they meet the real or anticipated demands? Is the U.S. dependent on other nations for any critical items other than petroleum? Can recycling help extend reserves, and to what degree?

Several studies had been made on how possible shortages may or could limit growth. However, so many unknown factors have to be considered that it will be difficult to tell if the demand can be met.

Economic factors played a large part in all of the forecasts over the past 15 years; prices of raw materials have not changed a great deal with the exception of petroleum and some metals. Availability has just about kept pace with demands, but this has been done largely with increased knowledge. Technology has been found to use lower grades of minerals and material. Now with the higher cost of energy needed to recover the lower grades, supplies may become over taxed and prices are expected to increase. Some of the items may price themselves out of a market or substitutes will be found and used. Also, new sources will be exploited. The oceans are full of many items that are in short supply on land. The challenge is there; can it be met?

Recycling may be another way to extend the supply of some items. This recycling can help in two ways: it augments supplies and it conserves energy. For example, to process raw aluminum requires thirty times more energy than to process aluminum from scrap. Steel can be reprocessed from scrap with only 40% as much energy needed as from raw ore. Or, put it another way, 1 million tons of steel from raw ore takes 2.5 million barrels of oil to process--but 1 million tons of steel from scrap can be produced from 1 million barrels of oil. So, put it this way, every million tons of steel lost to corrosion or burial in a dump could result in energy losses of 1.5 million barrels of oil. Can we afford this? Recycling can go a long way to help the oil use here. Can we make the recycling work?

WATER RESOURCES

A quotable quote by Rep. John P. Saylor: *"Today's water is the only water that will be available in the future. There will be no more of it tomorrow than there is at present."*

The quote above brings us to the final item to be discussed in my challenge to be "Face to Face with environmental problems." Water resources--how do we guard them from abuse, misuse, over use, and other misunderstood or mismanaged ways. It has been said that we have enough water. It is just not where we need it, or not of the quality we need. Most of the problems are caused by man, which leads me to believe that anything caused by man can be cured by man. I suppose I could get a few of you to agree or disagree with me on this.

I'll use Virginia as an example since I know more about the situation there than elsewhere. So here I go!

Virginia is blessed with a variety of abundant water resources. Many water problems have been created because of the abundant water resources which lead to urbanization and population growth. Virginia has managed to stay about even with the problems, but has not been able to correct all the problems or make the progress that the public has come to expect.

Some examples follow: (1) a small community may have had little concern about stream contamination by a local plant--until the plant couldn't meet new water quality standards and lay off began, (2) the same community may have ignored its sewage treatment plant until it learned that the facility had to be replaced or upgraded at a tremendous expense to meet the same water quality standards as the plant, (3) a homeowner in a new home in a subdivision located on a stream may have scoffed at the thought of flood insurance--until the muddy water filled his paneled family room in the basement that he had worked on so hard, and (4) an oysterman may have had such faith in the self-cleaning ability of the water on his shore that he thought pollution was no threat to his livelihood--until suddenly his shellfish bed was condemned because of dangerous bacterial contamination.

All of the above have occurred in Virginia in recent months. There are other similar problems in Virginia that have brought the need for remedial action and better water resource planning and management into sharp focus NOW.

Virginia did this in 1973 with the "Virginia Environmental Coordination Act of 1973" which states: *"In recognition of the vital needs of the citizens of the Commonwealth to live in a healthful and pleasant environment and necessity of using the natural resources of the Commonwealth to improve the quality of her citizens lives, it is hereby declared to be the policy of the Commonwealth to promote the wise use of its air, water, land, wildlife, and other natural resources so that they shall be preserved for the use and pleasure of future generations."*

Virginia is still working on her problems in water resources because these problems are not easy to solve. We have an objective. As Raymond Dasman once said, *"Once we could make mistakes in our environment that made entire regions uninhabitable. Today we are capable of making the entire world uninhabitable."* Hopefully this won't happen, but we need to begin to correct many water resource problems. We can't afford to be too late!!

In conclusion, I have tried to present the future speakers with targets. So, gentlemen, the targets are up, fire away!!

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FACING THE CHALLENGE
Joseph S. Ameen

For the past four years we have seen and have been involved in a movement which has developed into a classic case of the tail wagging the dog. The result has been a serious impact upon the industrial and domestic economy of this great nation.

What began with a few calling for a cleaner and safer environment a decade ago, has now moved rapidly into the legislative and judicial arena. What at one time were voluntary, permissive and good faith measures to provide a safe environment, have developed into mandatory controls with all manner of acts, statutes, rules, regulations, and ordinances. All levels of government are involved, all industry is affected, and every citizen feels the consequence.

Our industry today must face the challenge of environmental control in addition to the many other challenges of inflation, energy shortages and competition in the world market place. To some it will be a matter of just plain survival. Can we survive the challenge? I would like to think so, but the future looks dark, indeed. With all facets of environmental control, health and safety regulations converging upon American industry at one time, raised to the e - factor (energy) and multiplied by the inflation rate, the demands for capital outlay and operating funds could easily break many companies.

As the science of analytical measurements has developed new low level assay techniques over the past few years, control legislation has also moved in a parallel to require permissible levels of unrealistic proportions. Thus, many millions of dollars have been spent to assay raw materials and final products to determine trace elements -- hidden costs which are beginning to show up as we face the environmental challenge.

We have just begun to enter the economic phase of environmental legislation. The Congress over-reacted in adopting such massive legislation and did not look in depth at the economic and energy implications or the side effects. Much of the legislation is written around the Utopian concept which is of course highly desirable but largely impractical because we simply don't have resources to create such an idealistic environment; 92-500 was adopted with practically no discussion. Some have since described it as a "disaster."

For instance, to enact air pollution control legislation requiring sulfur control of less than 1% when that basic fuel is not even available! Or to control water pollution to zero discharge by distillation with no concept of the fuel required, and with no ultimate sludge disposal by land or ocean

discharge allowed -- something that simply cannot be accomplished.

In facing the challenge, industry is now caught in the middle, with enforcement on one side and compliance on the other. The choice -- either comply or face judicial action. Was it the intent of Congress to pass legislation with overly restrictive or impossible deadlines for compliance? I think not. I feel that the Congress favored cleaning up the environment within a reasonable time and to reasonable limits. But deadlines crept into the Act without a realistic evaluation of the pollution equipment industry's ability to produce such controls or the public's ability or willingness to finance it.

To further complicate the whole picture, billions of dollars were provided in federal grants to public authorities to upgrade or build new treatment works with little regard for cost because the money was "free" from Washington. Higher interest rates resulted, and oversold pollution equipment manufacturers lengthened delivery dates in many cases beyond the compliance deadline. So today, many face the impossible task of meeting the statutory deadlines of the Act.

In facing the challenge, the legislative battle has been lost. Industry must now comply or shut its doors. The Federal Act is very explicit in its penalty clause where it states that the fine shall be no less than \$2,500 per day nor more than \$10,000 per day with each day constituting a new offense. If one is found in violation of the Act, the authority is granted to the administration of the EPA to issue an administrative order giving 30 days for compliance. Then the above penalty is automatically invoked. Thus, the challenge to comply or else. EPA has given some relief to municipalities on compliance deadlines, but little to industry.

As we study the environmental and related laws, we find that they were written around enforcement rather than a practical approach to accomplishing the intent of the Act. Why have a law which can't be enforced? Yet more important, why have a law whose edicts cannot be met and which must result in litigation? This, we feel, is the route which our laws have taken. Some would suggest turning back the environmental clock. Little consideration is given to the technical and economic realities, while the overriding emphasis is on enforcement.

We have the phrase "best available technology" written into the law, with the interpretation that this is anything which has been laboratory tested or pilot studied -- not practical operating technology. Who will spend or is expected to spend millions of dollars on such unproven technology? Who can take the chance? Yet the law clearly demands this interpretation.

Economics! Who determines whether the requirements of the law are economically feasible? There is a problem in North Carolina of getting economic studies on cost of nutrient removal. No reliable studies have been made; yet we're facing the requirement.

Again and again, the law demands that the system be economically achievable. But by whose measure?

That which is economically feasible today may not be tomorrow. Business periods such as the one we're in now heighten the difficulty of compliance. Industry must be able to roll with the punches and compromise the requirements of environmental control.

In facing the challenge, industry is compelled to do many things in a short span of time. When we spread out all the requirements and then apply the available funds, we are found wanting. We then must pitch the coin to see how this money will be spent. The Congress doesn't understand because it merely passed the law.

The laws are very specific in its requirements and there are few opportunities for industry to gain relief.

Thus, here is industry like a sitting duck, the target of all legislative acts. Industry, the prime mover of the American way of life, has been receiving the brunt of this legislation. Even so, the full economic impact has not yet been felt.

As we face the challenge, we look down the road and see many costs to be picked up as we travel into the 1980's. First, we see the substitution of all materials bearing the so-called toxic components. This is a massive undertaking and quite costly when we consider only the analytical work to be done. We are unprepared to undertake this tremendous task but we must do so. Chemical substitution is not as simple as it sounds and cannot be done lightly without much research and study. And ultimately the consumer must pay the freight, with most of the blame placed on industry.

Next, we find OSHA requirements very demanding. Many corrections must be made to old equipment and older plants. Noise enforcement is an example. It could cost the weaving industry more than all other health, safety, and environmental controls combined. Who will yield on this standard or who will idle his plant for lack of compliance?

Air pollution guidelines, with a deadline of July, 1975, cannot be met by many because of several factors, notably poor equipment delivery and changes in processes in response to federal regulations in areas such as flammability.

Water pollution is now under the National Pollution Discharge Elimination System which requires permits on all industrial point source discharges. Those industries using municipal sewers are faced with capital payback to the municipality, sewer surcharge, and possibly pre-treatment.

Environmental control requires energy -- large quantities of energy. To implement the Clean Air Act, the OSHA requirements for in-plant air quality, and water pollution control, require vast amounts of energy. To remove a contaminant from the environment requires large quantities of energy. The greater the degree of removal, the greater the energy use. It is as simple as that!

The energy required to upgrade all waste waters to 94 percent is equivalent to the total output of the TVA system. To raise this to 96 percent would require two TVA systems. To reach the 1985 no discharge would require at least the output of five TVA systems. Who is ready to accept this as the national standard? Can the nation afford to divert this vast energy load to the waste water program? If not, why do we have such laws on the books? Yet, as long as they are on the books, we have no alternative but to abide by their mandate.

Thus, the challenge is narrowed down to these two items -- economics and energy. Do we have the energy and can we divert it to the environmental cleanup mandated by the Congress? How clean an environment do we need? Stream standards

have now reverted to effluent discharges as per the 1977, 1983, 1985 standards of the Federal Water Pollution Control Act. These effluent limitations are related to treatment alone and not to stream water quality. They can however be superceded in some cases where stream water quality segments prevail. Yet, neither case governs fish yield or aquatic life but best water quality use. Do we need distilled water effluent for discharge to the waterways rather than a balance between water quality and energy? The challenge says we do, but practical stream biology says we don't. However, the law says you either comply or be prosecuted.

Economics! The cost of implementing the overall environmental program is the deciding factor in facing the challenge. Many industrial groups have already filed lawsuits against the EPA on the grounds that the 1983 water quality limitations are not economically achievable. A joint study is underway to determine what really is feasible. There are also requests from industrial groups to postpone the effective dates of other regulations. Why? Because the impact is too great upon industry to meet all requirements in the same time frame. What is being asked of the Congress is to extend the deadline to a practical timetable. Again, let's point out that this is only the beginning of the economic impact. We are looking at not just a one-time capital outlay, but a continuing operating and maintenance cost. When we accumulate the incremental costs of air, water, solid waste, etc., we find not only a large portion of the GNP is for pollution control equipment, but a large portion of the outlay by industry is for operating expense.

The future does not look bright for us in the field of industrial environmental control. How much increase can the consumer product bear and still compete in the market place? Environmental control should be a process which can gradually be upgraded to meet future standards. It should not be discarded in its entirety for a new treatment concept. I'm afraid that this is what will be happening as we move into the 1980's, that there will be little resemblance between the 1983 facility and the 1985 no discharge facility. We are presently planning in five-year increments in pollution control and this is entirely inadequate. We are not only wasting funds and manpower, but more important, we're wasting our natural resources. We have seen many of our municipalities construct new treatment plants within the past five years only to find these facilities yielding to the larger regional waste facilities. Tons of concrete, steel, and other metals are lost in these so-called temporary facilities not to mention local bonds that must be amortized over the next 30 years, an added tax burden on the community and its industry.

Bleak and dark. Can we see any light in the distant future? Yes, but there must be some changes in direction of enforcement, and a return to more realistic points of view by agencies all up and down the line. Industry is now faced with the difficult choice of compliance or citation. There is little middle ground. The question is, how many of us can live through the economic hardship and still be strong and viable members of an essential industry?

Environmental Enforcement

Howard D. Zeller

Abstract

General enforcement procedures of the Environmental Protection Agency will be discussed, with a brief outline of major Federal laws and portions of other Federal legislation that EPA is responsible for administering.

Particular emphasis will be directed toward enforcement procedures in Region IV regarding compliance with National Pollutant Discharge Elimination System procedures utilized within the Enforcement Division, along with a general discussion of the agency's approach to permit enforcement. Comments and background on the National Pollutant Discharge Elimination System permitting program, permits issued, activity proposed for nonfilers, and the EPA philosophy on enforcement will be described.

(No manuscript available)