Development of a Hazardous Waste Management Program in Providence, Rhode Island Leading to a Hazardous Waste Treatment Facility: A Case Study

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The Federal programs of the Environmental Protection Agency have in recent years tried to establish mechanisms to deal with the increasing complexity of regulating hazardous substances: The Safe Drinking Water Act 1974, The Resource Conservation and Recovery Act 1976, and The Comprehensive Environmental Response, Compensation, and Liability Act 1980. These statutes stem from the original National Environmental Policy Act that declared that it was the business of the government to create and maintain conditions under which man and nature can exist in productive harmony, and required Federal agencies to prepare detailed assessments of the environmental consequences of their actions; because NEPA does not define what constitutes an impact the Council on Environmental Quality adopted regulations in 1973 requiring impact statements to address the effects of proposed action on the natural environment, population growth, community faculities, land use, urban conjestion, health, transportation, noise, neighborhood characteristics, low income populations, recreation, and object of cultural significance; the idea was to make an objective index for measuring environmental change forces, as to make judgements about the importance of different components.[1]

One of the differentiated components of the measurable environmental change forces is the impact of various chemical substances on the natural system. Recognising this need to regulate the use and disposal of hazardous substances, EPA proposed criteria for identifying characteristics of hazardous waste and for listing hazardous waste for national attention. In classifying a substance as hazardous EPA takes into account toxicity, persistence, degradability in nature, potential for accumulation in tissue and other factors such as flammability and corrociveness, as determined by a series of test andefinitions.[2] (appendix 1)

Additionally, a waste is hazardous if it is listed as such for any of the following reasons: coming from certain sources, such as hospital departments, being generated by industrial processes, containing any of a large number of substances already acknowledged to be toxic (including selected pesticides, certain priority pollutants, and bacterial, fungal and viral agents)[3] ( )

Recognising the desire to regulate the use and disposal of hazardous substances, EPA proposed, The Toxic Substance Control Act 1976 and The Resource and Conservation Act 1976, to bring the problem of chemical control to National attention.

> The Toxic Substance Control Act 1976 (TSCA) requires a premanufacturing Notification Form. Premanufacturing Notification (PMN) gives EPA notice of intent to manufacture or import a chemical, chemical category, identity volume of manufacture, expected use, a description of by-products, number of people to be exposed and disposal methods. Those chemicals not on the "inventory" are subject to PMN, the inventory is existing chemical substances - those in commerce as of last july 1979. On inventory are 70,000 substances; copies of the U.S. inventory are available at the Industry Assistance Office of EPA/OTS. The substances are listed according to chemical name, chemical abstracts service number, and molecular structure.[4]

The Resource Conservation and Recovery Act provides the framework for a cradle to grave management scheme for hazardous waste, by monitoring its movement and requiring its disposal in licensed facilities which meet environmentally acceptable standards.

RCRA charges EPA with:[5]

1. Developing criteria for determining which wastes are hazardous
2. Issuing standards to regulate each phase of a waste's life cycle: generation, transport, and final disposal at an approved hazardous waste facility
3. Enforcing these standards by requiring permits for the operation of hazardous waste facilities
4. Assist States in developing their own hazardous waste programs
5. Conducting inventories of currently operational waste sites

In turn EPA has determined that it is best to allow states to fine tune their regulatory mechanisms to the needs and desires of the area, while meeting the national goals for pollution abatement. Supposedly a local approach to the pollution problems of the state will serve to bring the regulators to the heart of the states ability to meet the Federal directives from USEPA.[6] However, their are a number of inadequacies in administering the objectives of TSCA and RCRA. These can be listed quite easily as the following:

1. Four years after RCRA is still incomplete so the public cannot be regulated by regulations which have not been adopted.
2. Regulations to identify hazardous waste is the cornerstone of RCRA, the identification process may be faulty. EPA has chosen to rely upon its own resources to seek out and identify all the processes and subprocesses in American industry, leaving the Toxic Substance Strategy Commission with an excessive amount of work to evaluate risk and the rate of growth in number and volume of chemicals.
3. Difficult to determine the various routes by which humans and the environment are exposed and measure the effects.
4. Regulations have not been set to account for synergistic effects or combined effects, nor acute and chronic effects.[7]

Rhode Island was one of the first states to adopt regulations to comply with RCRA, while the policy behind Rhode Islands Hazardous Waste Management Plan is sketchy, the effects of the Hazardous Waste Treatment Facility Siting Law are notable in the siting of the Antonelli Wastewater Treatment Facility in Olneyville. This thesis will make a case study of Providence, Rhode Island's efforts to create an environmentally sound city, while special attention will be given to policy and various implementation techniques.