The Incinerator Siting Controversy in the United States

In 1990, the United States had 140 incinerators burning trash and generating electricity, but almost twice that number had also been canceled in the previous eight years because grassroots opposition made it increasingly difficult to build a trash plant anywhere in the nation after 1985 (Curlee et al., 1994). Before focusing on eight community struggles involving such facilities during that critical period, we trace the evolution of the technology and the increasing opposition it encountered. Even though the primary method of waste disposal in the United States is and always has been landfills, incineration has played an important auxiliary role throughout the twentieth century. Earlier versions of these facilities, however, were seldom challenged. How did things evolve thus, and why are increasing numbers of citizens aligning themselves against this modern variant of a technology that has been around in one form or another for more than a century?

First-Wave and Second-Wave Incinerators

Before the 1890s, waste disposal was handled by individuals, and burning was one of the more common methods. Municipal incineration of garbage
is an extension of this trend, which has followed a cycle of boom and bust since the first garbage incinerator was built on Governors Island, New York, in 1885 (League, 1993). It is convenient to divide the history of incineration in the United States into three major waves, with the third—including our eight projects—as the one of primary interest for us in this book.

The first wave began in the United States in the 1880s and continued until the early years of the twentieth century. Precipitated by the increasing waste generated by urban populations, the notion of solid waste management developed during this period, when the options for handling it included landfilling, farm usage (animal food or fertilizer), water dumping, reduction, and incineration (Blumberg and Gottlieb, 1989; Melosi, 1981). Before World War I, more than 70 percent of U.S. cities used some type of source separation program for wastes before disposal, as it became increasingly common to utilize incinerator designs then in use throughout Europe to cremate solid waste. The advent of motorized waste hauling pushed more urban areas toward combined collection and disposal systems by making such solutions more economical than separation. The first incinerator was built in the United States in 1885, and within the next twenty-five years 180 others were constructed (Whitaker, 1994). Because the country had an abundance of coal, oil, and wood to burn, this first generation of incinerators did not use excess heat to create electricity, even though pilot facilities doing that were tested during that period (Blumberg and Gottlieb, 1989). Most of these incinerators, however, were abandoned by 1910 because the U.S. waste stream was much wetter than the European designs could handle and therefore required considerably more energy input to burn (Whitaker, 1994). Incinerator operators who attempted to get by without using additional fuel for the wetter waste found themselves with lower temperatures, which caused incomplete burning and increased gas as well as smoke (Melosi, 1981).

A second wave of trash plants that were better able to handle the wetter U.S. waste stream began in 1906, peaked by the 1930s, and ended only in the 1960s. Several hundred of these second-wave incinerators with British design adaptations were in operation by 1915, and between 600 and 700 had been built in urban areas by the 1930s (Blumberg and Gottlieb, 1989). White landfills and dumps continued to be the primary method of waste disposal during this time, because land was cheap and such facilities were easy to construct, incineration became increasingly common in the cities as per capita waste generation increased. Between 1930 and the 1960s, the waste stream itself underwent major changes as hazardous new consumer

and industrial products entered the market and as television advertising encouraged both wasteful packaging and excessive consumption. For example, as the price for plastics dropped because of increased production and use, refillable bottles were replaced by plastic one-use containers (Whitaker, 1994).

Some Early Environmental Concerns

By the mid-1960s, when approximately 10 percent of the solid waste in the United States was being incinerated, the effects of a rapidly growing and changing waste stream, combined with poor waste regulation, forced the U.S. Bureau of Solid Waste Management to label 94 percent of all landfills and 75 percent of all incinerators then in use "environmentally inadequate"—based upon the criteria of air-water pollution, insect-rodent problems, and physical appearance (Blumberg and Gottlieb, 1989). The first rumblings of what would gradually evolve into an environmental movement then began in the United States, with a small but growing number of citizens emphasizing the importance of conservation, health, and natural beauty while insisting on the reduction of waste and litter. A few voluntary recycling programs emerged, and some citizens pressured the federal government to regulate the packaging of goods (Selle, 1990; Szasz, 1994).

Between 1965 and 1970, under pressure from an increasingly vocal citizenry, the federal government passed three noteworthy laws intended to improve the management of solid waste. The Solid Waste Disposal Act (1965) had two major goals: (1) to stimulate research on methods of disposal as well as reduction of the waste stream and (2) to provide technical and financial support in planning for solid waste. One result of this legislation was the sanitary landfill, which was a definite improvement over the existing type because it had a bottom liner intended to prevent leaking water from contaminating ground water and because at the end of the day it was covered with a layer of dirt to retard odor and prevent animal and insect problems. Two years later, in 1967, came the Air Quality Act, which was subsequently amended by the Resource Recovery Act of 1970. The 1967 legislation required older incinerators to add air pollution controls, commonly referred to as "scrubbers" or "precipitators." While significantly improving air quality, these pollution control techniques were expensive enough to put most of the second wave of incinerators out of operation.
because of the prohibitive costs involved in retrofitting existing facilities (Blumberg and Gottlieb, 1989). Then came the Resource Recovery Act of 1970, indicating a federal shift of emphasis in solid waste management away from waste disposal and toward more recycling and reuse of materials (Popp et al., 1985). It made increased federal funding available to state and local governments for new resource recovery and solid waste disposal facilities, and also promoted demonstration projects for more efficient handling of solid wastes.

The Waste-to-Energy Industry Flourishes

This convergence of federal funding, new laws, and stiffer landfill requirements—in conjunction with a constantly increasing trash stream—stimulated U.S. engineering firms to initiate the third wave of incinerators in the 1970s (League, 1993). Again, engineers in the United States looked to Europe for solutions and began to obtain the patent rights to different variants of municipal solid waste plants. In an effort to distance the new wave from its older, dirtier predecessors, the solid waste industry coined terms such as “waste-to-energy” (WTE) and “resource recovery” (Blumberg and Gottlieb, 1989).²

Additional factors, ranging from a global oil crisis in the early 1970s to local landfill disputes, converged to promote the emergence of these new plants. The Middle East crisis during those years, for example, coincided with the closing of the dirtier plants to make a new type of waste facility generating electricity as a by-product of its trash incineration particularly attractive. When the nuclear reactor market contracted about the same time, some manufacturers such as Westinghouse became actively involved in this new application, which required relatively minor adaptations of existing nuclear power plant technology. The electricity generated during those days of the first oil embargo could profitably be sold to utilities, which were then paying approximately three times their pre-embargo prices. An important related piece of federal legislation during the late 1970s that promoted the construction of WTE facilities was the 1978 Public Utility Regula-

³. Modern incinerators are typically referred to by the industry and by pro-incinerator parties as “waste-to-energy” or “resource recovery” facilities. Opponents, on the other hand, frequently refer to them simply as “trash” plants. Occasionally, both sides may use the label “trash-to-steam.” Such descriptive terms are used interchangeably in this book.

³. The Incinerator Siting Controversy in the United States

©. Policies Act (PURPA), ensuring that the local utility would purchase electricity generated by such plants (Carlee et al., 1994). Relatively lax regulatory controls on emissions, and various tax incentives, also contributed to the favorable climate for manufacturers of these new plants.

Within a few years, additional firms were competing for contracts to build and operate such WTE facilities, and their construction designs usually fit into one of two categories, depending upon the amount of preprocessing done to the solid waste before incineration. Because these two different types are occasionally referred to by disputants in subsequent chapters, it is useful to distinguish them briefly here. The most typical WTE design, and the one eventually settled upon in each of the cases we analyze, is commonly referred to as “mass burn incineration.” Such facilities accept mixed trash and burn it at high temperatures, removing only large and noncombustible items beforehand. A second incinerator design, introduced shortly after this mass burn model, was the refuse derived fuel (RDF) system, which separates out recyclable material and then shreds the remaining waste into uniformly sized pellets. These pellets are then incinerated much like coal (League, 1993).

Although a number of early mass burn and RDF plants experienced significant start-up and operational difficulties—for example, large volumes of ash, emission problems, excessive operating costs, and difficulties in marketing electricity—they became a bright hope during the oil embargoes because they promised to provide steam and electricity while dramatically reducing trash volume (Blumberg and Gottlieb, 1989). They were viewed as welcome partial solutions to the threatening problem of municipal solid waste accumulation in the midst of declining landfill space, especially in the Northeast, the Midwest, and California. There was also decreasing public acceptance of new or expanded landfills in nearby neighborhoods, with the U.S. Environmental Protection Agency (EPA) estimating total municipal solid waste (MSW) generation in the United States at more than 160 million tons in 1986, and rising at a rate of “slightly over one percent each year” (U.S. Congress, OTA, 1989:4). In a survey during the late 1980s, for example, the EPA indicated that approximately one-third of all existing landfills were expected to close by 1994 (EPA, 1988).

After two years of stopgap reauthorizations of the Resource Recovery Act, Congress passed comprehensive new legislation in 1976: the Resource Conservation and Recovery Act (RCRA). It included federal criteria for solid waste disposal facilities and a plan to phase out all open dumps within five years. Especially noteworthy is that this legislation authorized federal
grants for up to 75 percent of the cost of resource recovery demonstration projects (Popp et al., 1985). The RCRA did not, however, provide for a comprehensive regulatory role in the management of municipal wastes. Because there was not yet any aroused mass base of public opinion on the issues of either hazardous or municipal waste management, the legislators followed the typical pattern in essentially being captives of the industry they were supposedly regulating and decided "to regulate disposal rather than to encourage waste reduction" (Szasz, 1994:35). Thus tax incentives, the increasing volume of waste generated, and the shutting down of old facilities promoted the construction of new incinerators. When hazardous waste unexpectedly became a major issue shortly after the 1976 RCRA legislation was passed—primarily because of the alarming number of toxic waste sites then being uncovered—the EPA shifted most of its budget and personnel from municipal solid waste to hazardous waste (League, 1993; Blumberg and Gottlieb, 1989; Szasz, 1994).

The Cresting of WTE Industry Growth

Third-wave incinerator construction crested in the 1980s. As the federal government concentrated on the more politically pressing problem of hazardous waste, the Reagan White House encouraged privatization in the municipal solid waste field. While regulatory agencies such as the EPA were underfunded, incentives for private corporations to become involved expanded. The EPA's encouragement of private sector involvement coupled with favorable tax law changes and industrial development bonds made these MSW incinerator projects very attractive to private corporations (Blumberg and Gottlieb, 1989). In this climate, orders for waste-to-energy plants mushroomed.

State and local legislators grew increasingly concerned in the early 1980s about "the garbage crisis" as landfills were reaching capacity or closing due to new regulations. Public anxieties about landfill safety—especially ground water contamination and toxic air emissions—narrowed choices of disposal methods during this time when widespread recycling efforts as a means of handling the waste stream were seldom seriously discussed. County authorities turned increasingly to incineration. In 1980, for example, it was estimated there were 60 of the third-wave WTE incinerators on line, under construction, or proposed across the United States and by 1985 that total had reached 200. Yet as of 1990 there were only 202 WTE facilities "operational, under construction . . . or in the advanced stages of planning" (Car-
lee et al., 1994:38). Although the numbers in the various categories varied somewhat because of the criteria used, the evidence was clear that the upward curve of new WTE orders had leveled after 1985.1

Thus the waste-to-energy industry flourished into the mid-1980s as growing numbers of county governments viewed incinerators as solutions to their trash problems. Utilizing the energy created in the combustion process to generate electricity, WTE plants increased output with size even though the total amount of energy produced is actually small in absolute numbers because, as one industry analyst noted, "fundamentally, these projects are not energy projects but waste management projects" (Hocker, 1991:14–15).

Convergence of Problems for WTE

The challenges ultimately responsible for the waste-to-energy industry's reversal of fortunes later in the decade began emerging during the early 1980s from both external and internal sources. The drop in world oil prices during this period, for example, made outside investors less enthusiastic about the technology as an alternative source of electricity. More commonly, however, external problems were linked with industry vulnerabilities.

Loosely organized opponents were becoming increasingly common by the early 1980s. Until this time, regulatory challenges and environmental reviews of modern incinerator projects had been virtually nonexistent. Although state air permits were required, there had been no organized opposition, and the level of regulation by state agency personnel was comparatively primitive. County officials confronted with a landfill crisis simply decided where they wanted to build a WTE incinerator, put out a request for proposal, and selected a vendor from among those submitting proposals. Any additional issues were then discussed, special compensation for the host community was typically agreed upon, and costs were passed on to county

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1. The "Waste Not" newsletter published by incinerator opponents Paul and Ellen Connell offers an example of different numbers promulgated by variations in criteria. This source listed 102 operating WTE incinerators in 1988, 125 in 1991, and 113 in 1993 ("Waste Not," no. 251, Connell and Connell, 1993). The trend here is obviously similar, however, because of the years required for these plants to move from drawing board to operational status.
residents whose trash would be delivered to the incinerator. But things were changing.

By the early 1980s, sitings were becoming more difficult as opponents raised a host of new issues. Scientists such as Barry Commoner emphasized the harmfulness of dioxins released by the burning of trash, and the incinerator industry was accused of viewing these plants as the primary solution to the nation’s trash problems rather than as weak substitutes for serious source reduction and recycling. A few state and federal regulators were also beginning to echo the challengers’ criticisms. While the West Europeans and the Japanese were already using more integrated solid waste management systems, encouraging companies to recycle and reduce raw materials in production, incinerator manufacturers in the United States were still ignoring recycling as part of their waste management systems (Ross, 1992). Such major U.S. designers and builders as Ogden Martin, Wheelabrator, and ABB had only adopted WTE technology from abroad without emphasizing European and Japanese multifaceted approaches that included systematic recycling as part of an overall trash management system (Hocker, 1991).

Between 1982 and 1985, siting efforts caused much more acrimonious disputes because of the increasingly organized opposition they had to confront. This was the period when the anti-incineration movement coalesced and protests proliferated. In a 1989 interview, industry consultant Carolyn Konheim elaborated on some of the factors contributing to this change of climate:

Tax incentives for the builders of these plants contributed significantly to the rapid initial growth of this industry during the latter part of the 1970s and early 1980s. . . .

In about 1980 or 1981 there was a discovery of dioxin in the emissions of an operating plant in Hempstead, Long Island. And the fear of dioxin that was propagated from that point forward gave a legitimacy to a variety of different concerns. . . . A lot of scientific attention was given to dioxin. . . .

Barry Commoner was the first to make dioxin out to be the most threatening human carcinogen that ever appeared. . . . Commoner was viewed by the public as the major guru on dioxin. . . . People associated dioxin with Agent Orange, even if only subliminally, and mixed with their natural aversion to an incinerator this did not help the industry. . . . Then you have someone coming along saying, “I’m giving you a better answer to your trash problems: I’m saying you can recycle everything instead!”

So even though the risk from dioxin was minimal according to scientific studies, the public doesn’t want to accept any kind of risk. . . . And then there were a few incinerator projects which didn’t work well and caused large tax increases. These were used by opponents.3

Both the economic and political tides were thus becoming less favorable for the incinerator industry after 1982. We turn next to a consideration of the evolution of the anti-incineration movement in the United States that both fostered and exploited these shifting tides.

The Anti-Incineration Movement

It was essentially the combination of outside opposition with internal industry vulnerabilities which promoted the effective mobilization of grassroots challenges to the third wave of incinerators. It is convenient for our purposes to discuss the complex combination of factors contributing to the evolution of the national anti-incineration movement under four general headings: (1) problems with the technology itself, (2) an internal industry document which was leaked and used by opponents, (3) the emergence of a major anti-incineration organization, and (4) involvement by a chemistry professor who became a national opposition leader. While each had its own special importance contributing to the mobilization of a national anti-incineration movement, their mutual interactions are most instructive. Internal technical problems and the embarrassing document, for example, became serious liabilities for the industry only when organized opponents used them to mobilize grassroots protests. Readers will find examples of such blendings of factors common in the following chapters.

3. Carolyn Konheim, interview by Ed Walsh on November 26, 1989, in Brooklyn, New York. Konheim discussed the history of the industry with which she was intimately acquainted, and her insights are drawn upon throughout this chapter. She is cited only when directly quoted. Because all of the interviews and focus group discussions drawn upon in this book were conducted by Ed Walsh, we will not repeat this fact in subsequent footnotes.
**Technical Issues**

Backyard protesters were slow to use Barry Commoner’s technical papers on the dioxin issue in the early 1980s because his technical language was virtually inaccessible to most laypeople. Not only was the content of these scientific reports difficult to grasp without the relevant background education, but they were not widely available. Early complaints from backyard citizen groups against their local incinerator projects typically focused instead upon burdens they were being asked to bear—such as increased traffic, noise from the facility, and decreased property values—for the presumed good of the larger county.

It was only when serious questions about such alleged benefits to the common good were raised, however, that effective grassroots mobilization became possible. The major environmental and health concerns responsible for the change from the routine sitings of the 1970s to the increasing challenges a few years later included atmospheric emissions, ash management, and prior recycling. These were not issues incinerator proponents wanted publicly discussed, but protest organizations also emerged during this period to popularize technical jargon and increase awareness of such negative evidence previously obscured from public view.

**Atmospheric Emissions**

Some familiar waste stream materials, such as papers and plastics, create furans and dioxins when trash is improperly burned. Harmful emissions also result from heavy metals contained in batteries or used in small quantities as additives in household items. Other problems derive from hazardous household wastes—estimated to comprise about 1 percent of all MSW by weight—burned without proper controls. The trace emissions from WTE plants commonly considered carcinogenic include furans, dioxins, and several metals, such as arsenic, cadmium, and chromium. Noncarcinogenic emissions include lead, mercury, particulates, sulfur dioxide, and nitrogen oxides. While all such emissions are potentially dangerous, the most serious concern has been raised about furans and dioxins, which are widely considered highly carcinogenic (Curlee et al., 1994).

Dioxin, the poison that caused the entire community of Times Beach, Missouri, to evacuate in the early 1980s, had really only begun to be studied by researchers in the early 1970s. Its presence in modern incinerator byproducts became a public issue when it was discovered as one of the chlorinated hydrocarbons contained in the flue gas from the combustion of municipal solid waste (U.S. Congress, OTA, 1989:226). Commoner and others attempted to focus public attention on two large groups of compounds known as chlorinated dioxins (dibenzo-p-dioxins, or PCDDs) and chlorinated furans (dibenzo-furans, or PCDFs), as well as other harmful constituents of incinerator by-products (Denison and Ruston, 1990:9). Some of these compounds are highly toxic to laboratory animals under certain conditions, and the EPA also considers one particular form—2,3,7,8-tetra-chloro-p-dibenzodioxin, or TCDD—a probable human carcinogen (U.S. Congress, OTA, 1989:226). Increasing concern about dioxins in the environment and in fish and dairy products led to a 1985 moratorium on new incinerators in Sweden, and new dioxin limits were established at much lower levels (U.S. Congress, OTA, 1989:244).

**Ash Disposal**

Another extremely controversial environmental and health issue associated with WTE incinerators is ash disposal. Toxic ash is the noncombustible part of municipal solid waste. Critics consider it the Achilles’ heel of the modern incinerator industry because the more successful a given facility is in removing toxins from the air, the more toxic its residual ash necessarily becomes. After combustion, an amorphous, glasslike material that includes minerals, metals, unburned organic carbon, dirt, and grit remain (U.S. Congress, OTA, 1989:247). Combustion results in both fly ash and bottom ash. Fly ash contains 5 to 15 percent of total ash and consists of light particles, such as that carried off the grate by turbulence. Bottom ash, on the other hand, is the relatively coarse uncombusted or partly combusted residue that accumulates on the incinerator grate. The ash from U.S. incinerators is typically 15 to 30 percent by weight and 5 to 15 percent by volume of the MSW original. The potential risks associated with this ash are the subject of considerable debate because several exposure pathways exist for pollutants in the ash. Substances may leach into ground water, and airborne or waterborne transport of ash during handling operations or from landfills may lead to inhalation, ingestion in food crops, or dermal exposure (U.S. Congress, OTA, 1989:254).

Because most of the information about released substances from modern solid waste incinerators is based upon modeling and inference rather than upon "real data on what happens to substances released from stacks," any scientific health risk assessment "should expressly acknowledge the uncertainties in the data and models" (Denison and Ruston, 1990:219). While
modern air pollution control equipment can remove from emissions a significant fraction of particles and certain gases, these substances are often merely transferred to the ash, which must be transported and disposed of in some storage facility. Furthermore, it is difficult to predict the actual environmental behavior of incinerator releases because laboratory predictions often give inaccurate results:

For instance, we now know that dioxin in the environment does not break down very quickly, although pure dioxin does break down when exposed to ultraviolet light in the laboratory. This discrepancy is explained by the fact that the dioxin released from incinerators is tightly bound to organic material and is shielded from degradation. (Denison and Ruston, 1990:220)

The primary controversy involving incinerator ash disposal is over what type of landfill should be used. About 47 percent of incinerator ash is currently sent to sanitary landfills along with other municipal waste, and the remaining 53 percent is sent to specially designed monofills. A critical question is whether incinerator ash should really be classified as a hazardous waste and thus landfilled at sites with even more stringent standards and designs, as well as at much higher disposal costs than conventional municipal landfills (Curlee et al., 1994:14).

The Recycling Alternative

"Recycling" means different things in different contexts, ranging from source separation to the construction of glass manufacturing plants to the enforced composting of household garbage. This variety of specific meanings for the term contributes to the confusion over solid waste recycling estimates, which range from a low of 15 percent by some incinerator proponents, to a high of 90 percent by enthusiasts such as Barry Commoner (1990:590). Because local communities or counties can do relatively little in the way of waste reduction involving national legislation covering bottling and packaging requirements or reductions in the use of raw materials, and because the old solution, landfilling, became increasingly problematic, the choices for increasing numbers of counties and local communities boiled down to recycling and incineration. And although the two may theoretically be considered complementary, they typically appeared as alternatives in zero-sum contests. If anything near recycling enthusiasts' estimates of percentage reduction of the trash stream were accomplished, of course, it would leave little incentive for the incinerator industry, because the EPA estimated that the number of recycling programs in U.S. communities had almost doubled between 1986 and 1991 (Ross, 1992).

The financing arrangements for incinerators often precluded significant recycling because they required from the county a certain number of tons per day for burning. If recycling efforts subsequently reduced the amount of waste available for incineration under such contracts, counties would default on their loans or be required to import trash from elsewhere to feed their incinerators. Critics insisted that the "put or pay" clauses in such contracts that assured vendors some specified level of compensation regardless of fluctuations in the solid waste stream—and thus locked the county into a certified minimum amount of trash to be burned—served as counterincentives to the development and expansion of a serious recycling program.

The Embarrassing Cerrell Report

A 1984 industry-sponsored report from a California consulting firm suggested strategies and tactics for overcoming the increasing grassroots resistance being encountered in the early 1980s, but after opponents somehow obtained a copy this report itself became an important protest resource. Prepared for the California Waste Management Board by a Los Angeles group calling itself Cerrell Associates Inc., the ninety-page document advised potential incinerator builders on ways to overcome public opposition. While its usefulness for the intended industry audience is uncertain, this document became invaluable to incinerator opponents who commonly referred to it as the Cerrell Report. Drawing upon questionnaires received from city officials and private planners across California, telephone interviews with sales representatives of several major WTE manufacturing firms, engineers, key officials at successful as well as unsuccessful sitings, and a literature review of public attitudes toward "noxious" facilities, the report was entitled "Political Difficulties Facing Waste-to-Energy Conversion Plant Siting." Geared to assisting proponents in avoiding or overcoming public resistance, the following excerpts suggest its guiding assumptions and main themes:
The environmental advantages of this [WTE] process are enormous: an alternative energy source in waste products reduces the amount of land that need be spoiled for landfilling purposes. . . . Most importantly, the development of an alternative energy source will help lessen the costs and dangers associated with dependence on oil and coal resources. . . . Waste-to-energy facilities are economically and environmentally progressive waste management facilities. The benefits of disposing waste products in a useful, efficient, and safe manner make traditional waste management techniques such as landfilling seem prodigious at best. . . . The most formidable obstacle to Waste-to-Energy facilities is public opposition. . . . What decisions can be made in selecting a site that encourage community acceptance of the project? . . . Candidate sites can be suggested partly on the basis of neighborhoods least likely to express opposition . . . [and] the people most likely to express opposition to a Waste-to-Energy project can be targeted in a public participation program and public relations campaign.

After discussing issues confronting proponents of various waste management projects in the face of public opposition, the authors suggest demographic features of populations where such opposition is most likely and list “for facility proponents the selection of a Waste-to-Energy site that will tend to offer the least amount of political resistance to the project” (Cerrell Associates, 1984:5). They conclude with “a program designed to enhance community acceptance of a proposed Waste-to-Energy project.” The report's authors summarize their findings on the demographic characteristics of support and opposition to such facilities in an appendix and list “strong indicators” of so-called “least resistant” communities: community size under 25,000, rural location, receiving significant economic benefits from facility, politically conservative, above middle age, and where the average education is high school or less. They also include “mild indicators” of these same communities: Republicans, business or technology-related occupations, low income, Catholic religion, not previously involved in voluntary associations, and longtime residents in the community.

By the second half of the 1980s this document, which was clearly not designed to flatter citizens at proposed sites, was circulating among anti-incineration groups. Activists used it, as will be seen, to mobilize local residents who resented being patronizingly regarded as “least resistant” to what opponents characterized as the incinerator industry’s exploitation.

THE CITIZENS CLEARINGHOUSE FOR HAZARDOUS WASTES (CCHW)

In the early 1980s, the beginnings of what would become a major organizational player in the national anti-incineration movement emerged in the Northeast when Lois Gibbs, a Love Canal housewife, started the Citizens Clearinghouse for Hazardous Wastes. The era of routine sitings only ended as such organized opposition to third-wave incinerators coalesced in the mid-1980s to exploit the industry’s technical and political vulnerabilities. Each of the projects analyzed in this book were in process during this transition period. Loosely coordinated groups and individuals were reaching out to one another for resources and moral support in challenging such projects. In the absence of such outside assistance, opponents in the early communities selected as host sites for modern trash plants found themselves unable to neutralize the industry’s scientific arguments and the “NIMBY” label used to tar challengers.

Within a few years, calls from communities challenging municipal waste projects were pouring into the CCHW for assistance, and the organization responded by preparing useful booklets for local activists. Focused initially on hazardous rather than municipal wastes, this protest organization expanded its concerns in response to the demands it received for information. Andrew Szasz (1994) provides a thorough analysis of its important role in the contemporary environmental movement. Given the blurring of the boundary between certain variants of municipal and hazardous wastes associated with incinerator ash, it was a natural transition for a national citizen organization initially focused on the latter to expand into the former.

Started by the leader of the Love Canal Homeowners’ Association because she wanted to “give other people the kind of help she wished she had gotten when she first started at Love Canal” (CCHW, 1986:15–16), the CCHW defined its mission as Saul Alinsky-style community organizing—“help[ing] people help themselves.” One of its many documents made available to community groups, “The Polluters’ Secret Plan” (Collette, 1989), used cartoons and caricatures to summarize the Cerrell Report in a way designed to arouse potential WTE host communities. It also gave abundant advice on effective countermoves that targeted communities might use. In its early pages, for example, was the claim that “not one single citizens’ group that’s followed our advice on how to block a proposed LULU (‘Locally Undesirable Land Use,’ an industry
term) has ever lost" (Collette, 1989:1). It advised communities targeted by industry for a LULU to

... point out that industry and government are wrong to insist "it's got to go somewhere"... [because] we believe this is a self-fulfilling prophecy. ... Take a "NIABY" position—Not in Anyone's Back Yard—and take a hard-line stand FOR waste reduction, recycling and toxic use elimination. (Collette, 1989:9)

This CCHW organizing manual warns targeted communities against believing that the citizen advisory committees sometimes established in conjunction with such projects will be anything other than co-optative mechanisms: "The advisory committee process is built on the assumption a site will be built. The committee's purpose is to 'advise' industry or government on how much pollution 'the community' will tolerate" (Collette, 1989:13). The same manual warns communities against accepting "economic enticements," which it labels "bribes to get communities to accept new sites":

Just say NO. Don't play the game by your opponents' rules and don't tolerate those who do. ... Don't sit on the committees. Challenge and poke holes in the claims they make about how wonderful their new facility will be. Demand that they be specific about promises of jobs or new industry. Ask: "How many jobs? What skills will be required for those jobs? What will they pay? How many local people will be hired? What new companies are itching to come to this town? NAME THEM!" (Collette, 1989:14)

Running through a litany of industry and government strategies used against local community groups, the manual suggests counterstrategies that, it claims, will be more effective for grassroots groups speaking for "the true majority position," concluding:

In the final analysis, the millions of dollars industry and government have been forced to spend in the so-far futile efforts to cope with the Grassroots Movement for Environmental Justice is a tribute to our success. (Collette, 1989:33)

By the mid-1980s, the CCHW was providing important assistance to a variety of grassroots activists. Some consider the CCHW a key player in the development of the "hazardous waste" movement into a much more broadly defined "toxics" movement that is still evolving and may become the vehicle for reinvigorating progressive politics in the United States (Szasz, 1994). The CCHW certainly played an important role in providing grassroots activists with information as well as emotional support in a number of the cases analyzed in the following chapters.

**Paul Connett, Academic Activist**

Around the same time that the CCHW expanded its focus to include WTE incinerators, Paul Connett, a chemistry professor at St. Lawrence University in northern New York State, was also becoming involved in the struggle against a proposed trash plant in his own backyard. By the late 1980s, if an industry proponent were asked to identify a single individual symbolizing the opposition, Connett's name would probably be the first one mentioned. Although social scientists prefer to emphasize the impact of structures on individuals, the process is often delightfully reversed in the real world. While Connett did eventually create small teams to assist in his work, many viewed him as a personal symbol of technical and scientific opposition to incineration—a hero to grassroots opposition groups and a demon in the eyes of the WTE industry.

In an interview, Connett and his wife, Ellen, discussed his involvement. After receiving his college degree from Cambridge University in England in 1962, Connett worked at other jobs until he earned a Ph.D. in chemistry from Dartmouth two decades later, in 1983. His area of research was the interaction of metals with biological systems. Connett had been at St. Lawrence University in Canton, New York, for only eighteen months before becoming involved in the local incinerator controversy. He explained:

Around Christmas of '84 the college librarian came up to me one day and said, "You're a chemist; what's the issue of incineration?" My first reaction when I heard her description of incineration was that it sounded like a pretty sensible idea—you would get rid of a lot of lousy landfills (these landfills weren't too good around here), and

5. Paul and Ellen Connett, taped interview on December 11, 1999. Direct quotations in this and subsequent chapters of our book are from this interview.
you would concentrate the problems all in one spot which could be regulated, and you would make energy to boot. My feeling was, initially, that this librarian and the few other concerned people in this area who opposed it were overreacting to the proposed incinerator...

Very few local people knew much about the issue at this time,... although nationally Barry Commoner and NYPIRG were out there very much concerned, and some groups in California were also opposing such facilities. ... And while the Cerrill Report was also completed about this time, I didn't become aware of it until years later. ...

The first thing I did was go to the County Planning Office, where they were very helpful and gave me a lot of documents to read. But as I read, I became more troubled. One area of concern was dioxins, a fascinating chemical in many respects—especially for a chemist. ... One of the first reports I read was from the California Air Resources Board from May of 1984 which said dioxin would be destroyed when heated above a certain temperature in the laboratory. ... Would this also happen in an incinerator? ... The document said, "Yes, based upon work reported by an engineer, Floyd Hasselriis." ... He basically said that above a certain temperature there would be no dioxin.

Shortly thereafter Connell came across a challenge to Hasselriis by Barry Commoner and his group, who insisted that the original data did not support Hasselriis's conclusions. Connell went to the published sources of Hasselriis's report and found that they indeed did not support the claim that dioxins would be destroyed by high temperatures.

So at this point I phoned up Barry Commoner—about in March of 1985. And to my amazement he picked up the phone, and I explained that I had just read his analysis of the Hasselriis graphs. ... He said "If you're interested, next week at Hofstra University on Long Island both Hasselriis and I are going to give presentations, and I am going to challenge him in public to explain [the discrepancies]." ... I went down. ... Hasselriis produced the same graphs again, ... and Commoner challenged him. ... But Hasselriis had no real answer.

You can see from the way I've dwelt upon this that it was a real turning point for me because I was appalled that he even attempted to do what he did with the [deficient] data he was using, and then appalled again that when it was made public all hell didn't break loose.

Connell was further disturbed by his local planning board officials, who seemed to take the whole issue of scientists judging data for political purposes in stride:

The local officials perceived me as an obstacle to building this incinerator, which they had to get around. As long as it was on the scientific level, they had to get around the science, but the moment it became obvious that the science they were relying upon was bogus—rather than admitting that, they used the high school debating tactic of saying things like "Well, I've met recyclers who lie." ... In other words, "Whatever the problems you are going to throw up against incineration, there are problems with recycling too, so what's the big deal?" This is April of 1985, so then I knew what I was up against.

Returning to Dartmouth that summer, Connell became involved with another local incinerator conflict, where he brought the dioxin issue to the attention of citizens who were basing their challenge primarily on the noise level of the proposed plant. He used technical information from Denmark and Sweden on the dangers of dioxins. Connell noted that the health-risk assessment done for St. Lawrence County had considered only the danger of inhalation exposure to dioxin, whereas the Danish documents had emphasized that the danger of dioxins from the food chain was 500 times greater than that from the air, and the Swedes had put a moratorium on committing any more incinerators because of their concern about dioxins:

[This dioxin data] was a shocker, and I thought with these Danish and Swedish documents that such information was going to stop the St. Lawrence County incinerator in its tracks because this is the largest milk producing county in the whole of New York State. ... But I was going to be surprised because we had not won at all.

After giving a presentation in the summer of 1985 at Dartmouth, incorporating some of this information, Connell was invited to speak against
other incineration projects in Vermont, New Hampshire, and Massachusetts.

So now I'm in contact with Barry Commoner's group, who's fighting an incinerator in Brooklyn [New York]. We have people fighting the Claremont [New Hampshire] incinerator, people fighting the Rutland [Vermont] incinerator, and the people fighting the Holyoke [Massachusetts] incinerator during the first summer after I got involved.

Connett and Commoner joined forces to debate two industry representatives at the Vermont Law School in October 1985, and in the audience were people from different parts of New England:

After the debate was over, I suggested that we all sit down... and right there we formed the National Coalition Against Mass Burn Incineration and for Safe Alternatives. I volunteered to put out the first newsletter—it was forty pages long... We charged five dollars for it... The next newsletter took me nine months to get out because it was several hundred pages long and it came out in August 1986... So the debate was in October, and it took until February [1986] to get the first newsletter out, and until the following August [1986] to get this big bugger out [showing a 200-plus page document]... By August 1986, however, we'd begun to network with many other groups... This marked an important building of momentum for the anti-incineration movement.

Connett said that, until this time, incinerator proponents had been able to isolate and discredit any local opposition they encountered. It was common, he explained, for them to portray Barry Commoner as a radical who had run for president and had questionable scientific credentials:

All of a sudden, the opposition was not isolated but rather networking around the country. And also, it was getting very well informed, and the worst thing for the incinerator industry is their track record to be exposed. As long as they can come in with their PR presentations saying this is a brand-new incinerator which looks like a five-star hotel with a little spout on it—and you juxtapose that for local politicians with their awful landfill with the seagulls shitting everywhere.

It wasn't easy for an opponent before this to get through to Barry Commoner for assistance... His reports were very technical, and there was little there which ordinary citizens could understand... And just about this same time, the Citizens Clearinghouse (CCHW) also got involved in solid waste—because previously they had been primarily concerned with hazardous waste... And they were very good.

In 1985, it was difficult for laypeople to get their hands on scientific materials that were useful in challenging WTE facilities. Ellen Connett emphasized the role of New York's Department of Environmental Conservation (DEC), which, she noted, actively promoted these incinerators:

I believe that, in twenty or thirty years, what the DEC is doing today will be seen as major criminal acts... They push incinerators down communities' throats, even though they give a lot of lip service to recycling... The DEC goes along with the Mafia and organized crime which has run the waste industry in this state since the fifties. There's more money in incineration for them than in recycling.

Paul Connett brought the discussion back to the newly formed coalition's attempts to produce a regular newsletter responding to the need of people for more technical information about incineration and related issues, emphasizing how much he had learned from seeing another academic activist's more streamlined newsletter after being quite disappointed at his own first efforts in this regard:

We realized that our first huge newsletter was ridiculous, that it was taking far too much of our time, and that it wasn't doing the job it was intended to do. We tried to get other member groups in the coalition we were forming to put this out, and somebody in Bloomington, Indiana, volunteered to do it, but couldn't. Then somebody in San Francisco got one issue out, got subscriptions, and never got No. 2 out because of family problems... It became very sporadic so that, for example, when important news would come through I would be phoning every contact, etc...

In the meantime, we met Peter Montague and saw his "Rachel's
Hazardous Waste News," and we got such a big kick out of it that we realized this was the way to do it: keep it short, keep it regular, send it with three holes in it with a number at the top so people could take the information, file it away. And what I really liked about it was that it was something you read when you received. Peter's newsletter was going for two or three years before this. It was our model. ... Ellen decided to take on the responsibility, for pay of course, and she's been doing it since April of 1988. ... We're now up to issue number 123, and I think it's one of the best things that we've done. We get compliments all the time, and I have to say it's my wife that does it.

In addition to this newsletter and telephone links around the nation, Connett also emphasized his national group's creation of twenty-three video tapes. ("I think it's over 3,000 copies now that have been distributed—and there have been some incinerators, such as one in Georgia, stopped on the strength of the videotape alone without our even having to go there.") There were also his own personal presentations across the United States, which had amounted to "over 600 in forty-two states in six years—tomorrow will be forty-three states when I go to New Mexico." Connett emphasized the scientific credibility that he saw his own work bringing to the WTE opposition movement:

In September of 1985, this college [St. Lawrence University] financed my going to the Fifth International Symposium on Dioxin in Western Germany. That was the first time I'd been to such an international conference, and it was fascinating. If I had any doubt, it was firmly proven that dioxin was an extremely political issue, and it was very disturbing. ...

Risk assessment is full of politics. ... Scientists who criticize the status quo must be prepared to be ostracized, but if there's anyone who gets it worse than scientists, it's farmers. ... Farmers who complain are always told they are bad farmers, that they just do not know how to farm properly. I can give you chapter and verse on that. Go to Utah for the sheep that died from nuclear testing and the farmers were blamed. Go to Michigan where the cattle were poisoned and the farmers were blamed. Go to Bonny Bridge, Scotland, and the hazardous waste incinerator where the cattle died and the farmers were blamed. I was prepared because I saw what happened to the scientists in the 1970s over the lead issue—how they were attacked in the scientific press. ... We saw it with Barry Commoner up here [see Chapter 7], where Mary Verlache who had absolutely miniature stature as far as anything scientific is concerned stands up and says that Barry Commoner is not a scientist. ... So I was prepared for this. ...

The thing with incineration is that when industry spokespersons say things like "Most scientists feel this way or that," they are only talking about scientists working for the industry. ... Most other scientists don't know anything about it because they don't have any incentive to study the issue. ... So our biggest problem is not being attacked by fellow scientists, but rather not having fellow scientists with enough time, energy, commitment or motivation to find out who the hell is right. You're out there by yourself, you're out there alone.

As far as the college is concerned, it's been wonderful. ... The dean provided over a thousand dollars for me to go to that West German conference. ... But I was more worried that people would view my spending enormous amounts of time on trash as not a very professional thing for a chemistry professor to do. ... Yet the people in our chemistry department have been very supportive. ... The industry has given me minor problems by calling up the college to try to get them to make damaging statements about me—two main issues they focused upon: "Is my work peer reviewed?" and "Does the college support me in my position?" ... And the college has made it clear that it does not endorse my position as such, although I've had a couple of awards from the college which are in the way of saying that they are not displeased with my activities. ... To be real hard-nosed about this, St. Lawrence University sees that its name is getting out there many, many times. It sent me copies of recent clippings of my activities from newspapers all over the place during 1985 to 1988 which are eight or nine inches thick. ... Occasionally, an editor will call me Professor NIMBY or something, but by and large these articles are very positive.

Connett emphasized how important the three "teams" that "keep me going" were. Besides his wife, Ellen, who has taken responsibility for their national newsletter, "Waste Not," he mentioned Roger Bailey, with whom he worked to make numerous videotapes, and Tom Webster, who worked
for Barry Commoner. He met Webster in 1985, and “that’s extremely significant because that’s my scientific team. Tom and I have written practically everything together since that point.”

We have presented papers now at the last five international symposia on dioxin. I gave a paper in Japan in ‘86, Tom and I presented in Las Vegas in ‘87, and then in Sweden in ‘88, Toronto in ‘89, and we just presented our fifth. . . . The first four have been published, and the fifth is being submitted for publication. . . . There are a lot of questions about dioxins that are unresolved. It is very problematic. . . .

There’s a split in the scientific community, and what exacerbates that split is that there’s a lot of people working for government agencies and they’re not allowed to say too much, and people working for the incinerator and chemical industries who have an axe to grind. . . .

It’s only when they try to put one in your own backyard that most scientists become involved, and then they become what I call a NIMBIE [Now I Must Become Involved]. . . .

Most of the scientists we meet at these meetings who are not under pressure from anybody are concerned about dioxins and their impact on the environment and on human health. . . . A subset of these scientists are concerned about dioxins from incineration, and some of them are beguiled by the notion that with proper regulation such dioxins can be controlled. . . . The Europeans, especially the Germans, are much more sanguine about what technology can do than most are in this country, where we don’t much trust our regulatory agencies because they are viewed as pawns of very strong economic interests. . . .

We certainly don’t trust the Mafia, and the Mafia’s running the waste industry. . . . So what might apply in Europe doesn’t apply in this country. . . . People talk about strong regulations, but they can only protect you where there is adequate monitoring and vigorous enforcement. Otherwise, the regulations mean beans. . . . There is what I would call the “survival of the incompetent” in regulatory agencies, the “survival of the boring.” . . . I’ve said many times on public platforms that I do not think we are the victims of evil people out there, but rather of boring people, people with no imagination and no vision. They’re the kind of people that survive. The others are either hired away or they have to fight like tigers to keep their jobs and funds in the face of state attempts to cut such activists’ budgets or fire them.

Connett went on to list a few regulators whom he felt were exceptions at both the state and federal levels, people who brought to light evidence of toxic effects from hazardous wastes and similar pollutants, whose research grants and sometimes even their offices were taken away from them: Ward Stone, a New York wildlife pathologist; Gary Glass of the EPA; and Roy Gorman, a North Carolina toxicologist.

On his own involvement in opposing incineration, Connett observed:

This work has taken over my whole life. I would say that in ’85 it was within the bounds of reason, and ’86 was when it really began to take off. Every time I got up and talked on this issue, somebody in the audience calls me back and says I heard you talk about the incinerator in such-and-such a place and would like you to come here. One thing leads to another.

It all started for Connett with his opposition to the incinerator in Ogdenburg, which was approximately seventeen miles northeast of his home in Canton within the same St. Lawrence County (see Chapter 7 for the details of this particular struggle). Connett explained that after he and an industry consultant disagreed about the effects of dioxin and cited different studies, an administrative law judge ruled it a technical debate that the judge himself was not qualified to referee:

. . . The administrative law judge dismissed our case, taking the position that it was a scientific dispute in which he could not make a judgment about which of the two scientists was correct. And therefore because the Department of Health and the Department of Environmental Conservation said it was okay, and in the absence of any compelling evidence to the contrary, this judge decided to accept the Department of Health’s word for it and ruled that therefore this dioxin is not an issue. . . . We had Austrian and Dutch scientists ready to testify in court, but we never got the opportunity to get the industry’s experts under oath. That was a real disappointment for me. . . .

We appealed his decision, but basically the judge would always await the pro-incineration lawyers’ briefs and then use them in his
own. That's my interpretation of what he did.... This whole health-risk assessment is a bugus process here in New York State.

Reflecting on his experience in challenging incinerators in his own county and around the nation over six years, Connett discussed issue framing and gender concerns in grassroots mobilization over environmental justice:

What we've learned from all this is that basically it is a political battle. If these incinerators get that far into your community, somebody's persuaded the politicians that this is a good idea. What you've gotta do is get into the system and persuade the politicians this is a bad idea. The politicians could be just naive and being misled, in which case you might get a chance to change their minds. On the other hand, these politicians may be being paid off and then you've gotta vote them out of office....

Environmental issues are what get the people emotionally involved because of their concern for their children, the threat of dioxin, and the heavy metals, so you shouldn't neglect the environmental aspects because it may keep some people fighting like tigers when others have given up. But in terms of winning a county, the real issue is usually economics....

The waste issue is the average person's most concrete connection with the global environmental crisis. And there is a tremendous army of people becoming involved, with the key soldiers in this army being women, particularly mothers. What they're doing is fighting for their kids, and they don't compromise when they're fighting for their kids.

Connett emphasized the independence among the local, state and national Work on Waste (WOW) groups he was instrumental in establishing:

We're involved in both WOW St. Lawrence County and in the National Coalition Against Mass Burn Incineration and for Safe Alternatives. WOW St. Lawrence County was a member of the national group.... Most of the people in WOW, however, have not become very much involved in the national issues.... Ellen and I have been very much involved in networking at the national level.... We changed the name of our national organization to Work on Waste USA because neither we nor others could remember the other name very well.... After that we formed Work on Waste New York State,

which is a statewide coalition.... There was a point where Work on Waste USA could have become a very structured organization, but we decided against that because we wanted to keep it as a network where you don't control anybody, you do what you want—if you're against incineration, you're one of us.

Although outspokenly unimpressed with his adversaries' abilities to separate their science from politics, Connett emphasized his own accomplishments in this regard:

Industry didn't realize that I could keep the science and the politics separate.... You can look at our scientific papers until you're blue in the face, but you won't find any politics.... Tom Webster is a brilliant mathematician.... They have been unable to dismiss our science.... If you like, of course, you can say that the reason we did the science is because we were politically involved with the incineration issue.... I don't lie, and can't be bought—and that's another thing they find it very difficult to deal with.... I do take contributions for my work, but nothing like those bozos get on the other side.

Connett also reflected on the similarities he perceived between the incinerator and nuclear power industries:

As people get more and more concerned about air emissions, and the technology gets increasingly expensive, the incinerator industry is really going down the tubes, just like nuclear power.... What's happened in Europe is very important because they're talking in Germany about standards for a medium sized incinerator, which will cost between 25 and 30 million dollars to retrofit to meet the new dioxin requirements.... They're retrofitting incinerators in Holland, Germany and Austria right now with activated charcoal filters.... So incineration is going to get more and more expensive, just like nuclear power before it.

He went on to discuss some of the companies involved in designing and building modern incinerators:

Although all of the leading companies in the [incinerator] industry are not former nuclear power plant builders, some such as Westing-
house, General Electric, Babcock and Wilcox, and Combustion Engineering certainly were. Another way to put it is that they are all major engineering firms, and major engineering firms have got to build something. Incineration was seen as the biggest boost to construction engineering since nuclear power.

Connett concluded by suggesting that just as Europe had preceded the United States in getting into modern incinerators, we might look there and find even the most previously enthusiastic supporters turning away from this technology because of concerns with such things as dioxin, mercury, and toxic ash. He admitted being very disappointed with the published report by the U.S. Congress Office of Technology Assessment—even though he was himself on its Advisory Panel—and he criticized the way industry can prepare ahead of time when it knows twenty-four days or so in advance the date on which dioxins are going to be measured. Despite what he regarded as a regulatory stacked deck in the industry’s favor, however, Connett felt confident that dioxin and ash problems would eventually overwhelm it:

Europeans are very much more concerned about dioxin than Americans—dioxin in the food chains and dioxin in mothers’ breast milk. Although incinerators are not the only sources of dioxins, they are certainly a significant one.

The better they get at protecting the air, the worse the ash is going to get. ... The worst thing you can do to toxic metals is to burn them. ... Take this bit of plastic here [picking up a small container], and suppose it has a cadmium additive to stabilize the plastic. There’s no way I can get the cadmium from the plastic into my nose and into my lungs. If it gets buried into a landfill, it may take as long as a thousand years for that cadmium to leach out of that plastic because it’s a very stable matrix. However, if I burn it, that cadmium will come out either as a gas or as a tiny particle which can go deep into my lungs. So the worst thing you can do with things that have toxic metals like mercury, cadmium, chromium, arsenic, and lead is to burn them. ... And trash incineration is the second largest source of mercury in the United States, after coal burning.

In Bavaria, the home of trash incineration in Europe, they’ve built seventeen incinerators in twenty years with fifteen more planned. ... They’ve ninety groups organized against incinerators there because doctors are concerned about respiratory problems, and because of the build-up of dioxins in the environment and in mothers’ breast milk. ... Bavarian doctors are much more concerned about dioxin in mothers’ milk than doctors in this country. ... So, one of the most pro-incinerator provinces in Germany which is itself one of the most pro-incinerator nations is likely to say “no more incinerators in Bavaria.” ... The U.S. builder Ogden-Martin is based in Bavaria, and has long used as one of its selling points that if there were anything wrong with this technology it would have been found out long ago in Germany.

Chastened Industry Perspectives

By the late 1980s, incinerator proponents might disagree with such dismal assessments about the future of the technology, but they had to acknowledge the significant impacts of Connett and the organized protests of the mid-1980s on incinerator siting processes. It is instructive to notice the strong emphasis in the industry’s own journals by the late 1980s on incineration as merely a single component of a more comprehensive system for handling municipal solid waste.

For example, a Westinghouse official writing near the end of the 1980s told his pro-incineration readers they had to change their attitudes if they wanted to continue in business. Cautioning against their tendency to view the WTE plants themselves as major solutions to the nation’s trash problem, he insisted that “waste management and disposal is much broader than designing, building, and operating waste-to-energy plants”:

We are not in the waste-to-energy business. We are in the business of providing a variety of environmentally sound solutions to solid waste problems. ... It is really a business with four essential parts: waste reduction, recycling, resource recovery, and landfills. ... Resource recovery plants do not offer a single solution to waste disposal. And those of us who think of ourselves merely as waste-to-energy plant vendors and operators may not survive in the 90s. (Pollier, 1989:6)

This writer and other industry consultants were now echoing the priorities emphasized earlier by West Europeans and Japanese: the reduction of as
much MSW as possible at the source, maximum recycling and/or composting of whatever MSW is generated, incineration of whatever MSW cannot be recycled or composted, and landfilling of the rest:

In America, with our vast geographical expanse, few people thought there would ever be any limits on our ability to keep finding new places where we could dump our garbage. For far too long, municipal solid waste officials felt their main job was to find out-of-the-way and out-of-sight locations to landfill waste. This strategy worked for a long while.

But it doesn’t work anymore. It doesn’t work when groundwater moves pollutants into water supplies; it doesn’t work when communities are banding together to prevent landfills from being sited near them; and it doesn’t work when cities and states are sealing their borders against the importation of waste from other jurisdictions.

The 90s will demand a broader view—including the ability of potential [incinerator] vendors to meet existing and emerging recycling demands and environmental criteria. Events of the last decade have ushered in a new age of environmental awareness that will be with us for the rest of this century. The images are striking: Bhopal, Chernobyl, the greenhouse effect, toxic waste, garbage and ash-laden barges looking for homes. All of this has helped change the way most of us look at the environment. Now we see an environmentalist every time we look in the mirror. (Polier, 1989:5–6)

A writer in another industry journal acknowledged that the anti-incineration perspectives common by the late 1980s had created a political environment which could be characterized as adding “uncertainty to even the most technologically and economically sound projects” (Hacker, 1991:12).

An additional issue that emerged in the course of the conflict between proponents and opponents of modern incinerators was “flow control,” which will be central in one of the New York disputes analyzed in Chapter 7. As the phrase suggests, this refers to the right of county officials to control the flow of trash to a particular facility. The key question is whether authorities should have the right to order all of the municipal waste from any particular area to a particular disposal facility, or whether trash haulers should be allowed to make their own decisions based upon cost and other factors. An industry manager looking back upon the conflict from a 1993 perspective emphasized the importance of flow control, as well as air, ash, recycling, and what he considered biased media coverage in the political struggle over incinerator siting:

In the early 1980s, financial analysts and industry executives were awaiting a predicted boom in WTE facility construction. Waste generation levels were expected to increase at a fast pace, and landfill capacity was decreasing. Financial firms, law firms, design/construct firms, consultants, and full-service vendors all positioned themselves to capture a piece of this new market; the number of major vendors proposing to build and operate facilities exceeded a dozen. A decade later, however, the boom has yet to occur.

The 1980s were not a complete bust for WTE. More than 100 facilities were constructed and there are now 143 facilities in operation. . . . Despite the occasional “successes” for WTE, the fact remains that WTE has fallen short of the expectations of industry professionals.

What proponents of WTE did not anticipate was the fervor of the opposition driven by environmental concerns and, as a result, the lengthy—and, in some cases, aborted—siting and public acceptance process.

Over the years, opponents of WTE projects have used a variety of environmental issues to delay or prevent the implementation of projects. One such issue is mercury emissions from WTE facilities. . . . The evidence compiled to date shows that mercury emissions from WTE facilities are insignificant in comparison to the total amount of mercury emitted to the environment. However, as a result of the debate . . . all of the WTE facilities recently receiving permission to construct include add-on mercury controls to reduce the emissions of mercury. These controls will be installed because, without clear guidance from the regulatory community, project proponents must install all available technologies to mitigate public opposition and avoid further project delays . . .

An element of organized opposition that often frustrates engineers and scientists is the lack of accountability for statements made to the press or before elected officials. Misrepresentations of facts often find their way into print and achieve, thereby, an undeserved mantle of credibility that can influence decisions of elected officials regarding the direction of MSW management for their jurisdiction. The issue of “toxic ash” is an example.
Although ash residue from WTE facilities contains organic compounds and heavy metals that are of concern if released into the environment, there is no evidence that these compounds cannot be properly managed and contained when properly landfilled. In fact, considerable scientific evidence shows that if managed correctly, the disposal of ash potentially poses less risk to the environment than landfills raw MSW.

The ash residue disposal issue continues because certain laws are inconsistent with the scientific evidence. While a number of states and the EPA have addressed the issue and regulate WTE ash as a special waste, Congress continues to debate whether ash residue should be managed as a hazardous waste or special waste. Without resolution, the public is left to decide for itself and support a cautious approach, thereby substantially increasing costs for the development of a WTE facility. Experience has shown that in properly designed integrated waste management programs, WTE and source reduction and recycling programs are not only compatible but complementary.

Flow control—one of the pillars of most WTE facility financing—... is now being challenged as unconstitutional. Flow control typically refers to local ordinances or state enabling statutes that stipulate that all waste generated within a defined geographic area must be disposed of at a location specified by the local government. Although the concept of flow control is quite old, it was not used extensively until the development of highly capitalized WTE facilities. Most WTE projects are financed based on revenues generated from the receipt of waste. Flow control ordinances are enacted to ensure that the waste generated in the planning area for which the disposal facility is constructed is actually delivered to the facility.

In most states, local government has the responsibility to provide for the safe and adequate disposal of MSW generated within its borders... Regardless of whether an existing or new facility is stipulated in the waste management plan, the control of the waste for which the plan is generated is often essential to the effective implementation of the plan... During the early development of WTE facilities, the constitutionality of flow control was addressed a number of times and the courts upheld the right of local government to enforce flow control ordinances. In the last few years the opposite

has occurred—some lower courts have ruled against local governments and struck down the constitutionality of flow control...

Another type of flow control currently being debated is the importation of waste. Contrary to early court decisions regarding the export of waste, courts in past years have found that banning the importation of waste by a state was unconstitutional.

Having addressed many technical roadblocks over the years, WTE now faces institutional road blocks as well, which engineers and scientists will have considerable difficulty overcoming. (Dempsey, 1993:92–96)

Does WTE Have a Future?

While opponents such as Paul Connell insist that the death knell has sounded for the WTE industry, many incineration proponents disagree. Although the latter acknowledge the effectiveness of the anti-incineration movement in dramatically slowing the industry's growth during the 1980s, and complain that the federal Clean Air Act amendments of 1990 as well as the EPA's Emission Guidelines of 1991 will mean expensive retrofits of pollution control systems, they foresee a resurgence of incinerator sitings. New companies have become involved in building these plants, and they expect opportunities to expand in the near future. For example, the vice-president of one new WTE firm said: "[By the late 1990s] we think the public will be more educated about the benefits of WTE, and public agencies will have developed integrated waste management programs that include incineration along with source reduction, recycling, and landfills" (Hocker, 1991:13).

Industry executives also suggest that public attitudes toward recycling will become more "realistic" because "after you achieve the maximum in materials recovery and recycling, you're still left with about 75 percent of the original waste stream for incineration or landfilling" (Hocker, 1991:17). Some environmentalists, on the other hand, insist that solid waste management officials who assume a 25 percent recycling rate maximum are likely to actively subvert efforts to achieve even higher levels of recycling if they perceive them as jeopardizing the amounts of trash available for their projects.
Whatever the future for WTE facilities, opposition has been mobilized and the era of routine sitings is over. The three states in which our projects were located—New York, New Jersey, and Pennsylvania—are nationally ranked first, fourth, and sixth, respectively, in terms of their total numbers of WTE plants (Hocker, 1991:16). Each of the siting attempts that are the focus of this book was in process after the mid-1980s when the anti-incineration movement began to hit its stride. Some were defeated by organized citizen opposition, while others were completed, and our task is to account for these divergent outcomes.

2

Theoretical Perspectives on Technology Protests

Both sides, in each of the challenges to modern incinerator projects that are analyzed in this book, claimed to be operating in the public’s best interests. While we try to be evenhanded in analyzing these conflicts, our primary focus is on the grassroots protests as viewed through the lenses of contemporary social movement theory and environmental sociology.1 A selective summary of the evolution of social movement theory in recent decades provides a useful background for understanding our theoretical perspectives.

What Is a Social Movement?

Movements of various political stripes have become increasingly common in the United States in recent decades. African Americans, Native Americans,

1. For more of an industry perspective on the same general topic, see Carlee et al., 1994, a book that came to our attention as we were completing this one. Although it focuses primarily upon aggregate social and economic indicators, rather than on the actual dynamics of specific grassroots struggles, it is interesting to see some surprising similarities in conclusions about processes and outcomes arrived at via their "top-down" and