Index

Index

Administrative Conference of the United States, *262*
Advanced Electric Reactor, 176, 205
Angleton, TX, *204*
Association of State and Territorial Solid Waste Management officials, *164, 165, 242, 251, 252*
A systems analysis of Superfund, *61-99*
  current estimates of future Superfund needs, 61
  uncertainty and the need to evaluate the Superfund program, 63
    alternative approaches, 64
    historical performance
A systems analysis approach to define a long-term strategic plan, 67
  conclusions, 85
    health and environment effects, 88
    non-Federal money, 88
  definition of goals, 68
  interim strategy, 72
  model description, 71
  permanent strategy, 73
  simulation: a systems analysis method for comparing two strategies and incorporating long-term certainty, 70
  use of model findings, 74
Agency for Toxic Substances and Disease Registry, 63
Athens, GA, 32
Atomic Energy Commission, 32

Baltimore, MD, 33
Battelle Pacific Northwest Laboratories, 212
Biocraft Laboratories, 210
Borger, TX, *205*
Boulder, CO, 131
Burleson/Kennedy submerged reactor, 204
Butler Tunnel, 33

California, 5, 43, 48, 151, 159, 207, 242
  Avon, *28, 29, 223*
  Casmelia Resources landfill, 29
  Chino Basin, 29
  Conogo Park, 209
  Costa Mesa, 206
  Glen Avon, 28, 29
  Palo Alto, 207
  San Diego, 209
  West Covina, 29
Canada, 206
  Welland, 206
Casmalia Resources Landfill, 29
Center for Advanced Environmental Control Technology, University of Illinois at Urbana, *218*
Center for Environmental Management, 218
Chamberlain Manufacturing, 197
  GARD, 197, 198
Chemical Metals Industry, 33
Chemical Minerals Recovery Site, 32
Chester Township, NJ, 131
Chicago, 218
Chino Basin, 29
Cincinnati, OH, 208
Citizens for a Better Environment, 271
Citizens Clearinghouse for Hazardous Wastes, 268, 269, 271
Cleanup technologies, 171
  institutional practices and regulatory impacts, 177
  site conditions and waste, 172
  status quo bias, 179
  support of cleanup technology R&D, 214
    EPA technology R&D, 214
  technical options, 181
    conventional technologies, 182
    conventional treatment, 187
    innovative technologies, 193
  technology evaluation, 172
    barriers and improved technology, 175
Cleveland, 32
Colorado, 131, 271, 287
  Boulder, 131
  Marshall Lake, 131
  Superior, 131
Colorado Citizen Action Network, 267
Colorado Citizens Against Lowery Landfill, 271
Columbus, OH, 210
Commerce, U.S. Department of, 61
Comprehensive Environmental Response, Compensation and liability Act, 5, 10, 12, 17, 22
Concerned Neighbors in Action, 270
Congress, U. S., 6, 10, 17, 18, 20, 22, 23, 37, 40, 40, 49, 50, 54, 57, 63, 64, 126, 128, 139, 141, 218, 272, 273
Congressional Budget Office, 126
Connecticut, 46, 131
  Naugatuck, 131
Conogo Park, CA, 209
Costa Mesa, CA, 206
current institutional framework, 103
  approaches to establishing cleanup goals or standards, 106
    assessment of risks, 109

available technologies, 110
site-specific considerations, 108
National Contingency Plan, 104
use of cleanup goals, 105
use of Hazard Ranking System, 105

Danvers, PA, 33
Darby Creek, PA, 129
Darcy's Law, 224
Defense, U.S. Department of, 219, 249
Denver, CO, 267
Detox Industries Inc., 210
District of Columbia, 43

Emergency and Remedial Response Information System, 64, 161, 162, 163, 164, 165, 168
Energy, U.S. Department of, 249
Environmental Defense Fund, 260
Environmental Protection Agency, U. S., 3, 4, 5, 6, 10, 11, 12, 15, 18, 20, 22, 27, 28, 29, 31, 32, 33, 37, 38, 39, 42, 43, 44, 45, 46, 49, 51, 52, 53, 54, 55, 56, 57, 63, 64, 65, 68, 87, 88, 92, 98, 99, 104, 105, 106, 110, 115, 118, 120, 125, 127, 128, 129, 131, 134, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 161, 162, 163, 164, 167, 168, 171, 177, 178, 179, 180, 204, 206, 207, 213, 214, 215, 217, 218, 219, 225, 226, 227, 229, 230, 231, 233, 234, 235, 237, 238, 239, 240, 241, 242, 245, 248, 249, 252, 253, 257, 258, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274
office of Groundwater, 65-66
Alternative Technologies Division, 216
Chemical and Biological Technology Branch, 216
Thermal Destruction Branch, 216
Community Relations Program, 263
Hazardous Waste Committee, 215
Hazardous Waste Treatment Council, 229
Industrial Environmental Research Laboratory, 216
Releases Control Branch, 215
Office of Emergency and Remedial Response, 214
Office of Environmental Technology, 215
Hazardous Waste Engineering Laboratory, 215
Land Pollution Control Division, 215, 219
Containment Branch, 215, 216
Office of Research and Development, 215
Office of Solid Waste, 138
Surface Impoundment Assessment, 128, 134
Exner, Bonnie, 267, 269

Federal Register, 272
Fijimasu Synthetic Chemical Laboratories, 213
Florida, 149

GARD, 197, 198
G.A. Technologies, 208
General Accounting Office, 88, 140
Geological Survey, U. S., 151
Georgia, 32
Athens, 32
Luminous Processes, Inc., 32
Gibbs, Lois, 268, 270
Glen Avon, CA, 28, 29
Gratiot Country Golf Club, 33
Greenville, MS, 33
Groundwater Decontamination Systems, Inc., 210
Gwynn Falls, MD, 34

Hatfield, PA, 202
Hazard Ranking System, 45, 49, 51, 64, 68, 99, 105, 131, 132, 133, 162, 163, 261, 266
Hazardous Waste Center, Louisiana State University, 218
Health and Human Services, U.S. Department of, 6, 18, 53
House Committee on Government Operations, 249
Houston, TX, 210
J. R. Huber Corp., 176, 205
Advanced Electric Reactor, 176, 204

Idaho, 208
Idaho Falls, 208
Illinois, 43, 46, 48, 141, 198
Chicago, 218
Niles, 198
Illinois State Geological Survey, 151
Indiana, 27, 211, 223, 270
Mishawaka, 211
Seymour, 27, 28, 106, 223, 270
Industrial Hazardous Waste Elimination Center, Illinois Institute of Technology, Chicago, 218
Industry/University Cooperative Center, 214
Interior, U.S. Department of, 53, 249
Irvine, R. L., 211
IT Corp., 204

Japan, 213
Takasago West Port, 213

Tokyo, *213*
Waka River, 213
Johnson, Lillian, 270
Justice, U.S. Department of, 272

Kansas, 213
Wichita, 213
Kingston, NH, 272
Knoxville, TN, 205

Lawrence, MA, 30
legislation:
Administrative Procedures Act, 259, 273
Clean Air Act, 112, 259
Clean Water Act, 27, 33, 88, 112, 259, 260, 272, 273
Comprehensive Environmental Response, Compensation, and Liability Act, 5, 10, 12, 17, 22, 44, 45, 52, 56, 57, 64, 69, 103, 104, 105, 111, 112, 113, 114, 117, 118, 119, 142, 146, 147, 148, 149, 154, 1.58, 175, 180, 214, 242, 259, 260, 261, 262, 265, 268, 270, 272, 273, 274
Endangered Species Act, 259
Freedom of Information Act, 267
National Environmental Policy Act, 273
Resource Conservation and Recovery Act, 5, 11, 12, 17, 20, 37, 41, 46, 49, 50, 51, 55, 56, 57, 63, 65, 68, 112, 125, 126, 128, 129, 131, 133, 134, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 152, 155, 156, 157, 158, 159, 173, 175, 177, 178, 180, 194, 215, 218, 231, 233, 234, 248, 258, 259, 272, 273, 274
Safe Drinking Water Act, 112
Small Business Innovative Development Act, 217
Toxic Substances Control Act, 175, 177, 194, 259
Lester, Steven, 269
LIFE, 270, 271
Lockheed Missiles & Space Co., 207
Lopat Enterprises, 178, 212
Love Canal, 5, 106, 108, 260
Lowell, MA, 30, 32
Lowell Fair Share, 271
Lowery Landfill Monitoring Committee, 267
Luminous Processes, Inc., 32

Madison, PA, 207
Marathon County, WI, 133
Marshall Lake, CO, 131
Maryland, 33, 129, 132, 271
Baltimore, 33, 271
Chemical Metals Industry site, 34
Gwynn Falls, 34
Massachusetts, 30, 48, 218, 242, 270, 271
Lawrence, 30
Lowell, 30, 32
Merrymack River, 30, 31
Methuen, 30
New Bedford
Merrimack River, MA, 30, 31
Methods Engineering, Inc., 204
Methune, MA, 30
Michigan, 33, 159, 242, 272
Gratiot Country Golf Club, 33
Pine River, 33
Velsico Chemical Co., 33
St. Louis, 33, 272
Midland-Ross Corp., 208
Miller, David W., 249
Minnesota, 46, 48, 181
Mishawaka, IN, 211
Mississippi, 33
Walcott Chemical Co., 33
Greenville, 33
Missouri, 5, 219
Times Beach, 5, 219
Verona, 178
MODAR, Inc., 177, 203, 204

Naugatuck, CT, 131
Nashua, NH, 30, 223
National Academy of Sciences, 109, 139
National Campaign Against Toxic Hazards, 237
National Contingency Plan, 51, 63, 64, 103, 104, 111, 115, 179, 229, 231, 260, 261, 263, 266, 272
National Governors Association, 43
National Interim Drinking Water Regulation, 152
National Pollution Discharge Elimination System, 133
National Priorities List, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 17, 27, 28, 38, 39, 40, 41, 42, 44, 48, 49, 50, 52, 53, 54, 55, 57, 61, 63, 64, 65, 68, 70, 71, 72, 104, 111, 118, 125, 126, 128, 129, 131, 132, 133, 134, 137, 138, 142, 145, 159, 162, 163, 164, 167, 223, 227, 230, 234, 235, 237, 238, 239, 240, 241, 248, 261, 263, 264, 265, 266, 267
National Research Council, 127
National Response Center, 147, 265
National Response Team, 261
National Science Foundation, 214
National Water Well Association, 251
Nevada, 151

Beatty, 151
Las Vegas, 151
New Bedford, MA, 271
New England, 230
New Hampshire, 30, 46, 216, 228, 272
Kingston, 272
Nashua, 30
Sylvester site, 30, 31, 32, 223, 228
New Jersey, 104, 129, 131, 141, 210, 211, 213, 242, 262, 270
Chester Township, 131
Industry/University Cooperative Center, 214
Waldwick, 211
Wanamassa, 213
New Materials Technology Corp., 213
New York, 5, 43, 46, 99, 128, 129, 159, 177, 206, 242, 260, 271
Energy Research and Development Authority, 211
Love Canal, 5, 106, 108, 206, 271
Niagara Falls, 211, 271, 272
Syossett, 132
Niagara Falls, NY, 211, 271, 272
Niles, IL, 108
North Carolina, 48
Notre Dame University, 211

Office of Groundwater, 65-66
Office of Technology Assessment, 3, 4, 7, 8, 9, 11, 12, 13, 15, 17, 20, 23, 27, 29, 30, 32, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 50, 52, 54, 56, 61, 66, 71, 74, 84, 85, 88, 89, 103, 104, 105, 119, 120, 125, 127, 129, 134, 137, 138, 154, 159, 165, 167, 168, 178, 193, 194, 197, 219, 223, 225, 227, 229, 230, 231, 232, 235, 238, 239, 240, 241, 243, 244, 252, 263
Ohio, 32, 46, 267
Chemical Minerals Recovery Site, 32
Cincinnati, 208
Cleveland, 32
Columbus, 210
Toledo, 208

Palo Alto, GA, *207*
Pennsylvania, 33, 129, 130, 271
Bruin Lagoon, 271
Butler Tunnel, 33
Danvers, 33
Darby Creek, 129
hatfield, 202
Madison, 207
Philkadelp hia, 129
Pittston, 33
Sharon Hill, 129

performance at site cleanups, 223
adequacy of site assessments, 228
constraints on Superfund contractors, 228
containment rather than treatment, 226
contaminant transportation, 224
design of remedial measures, 232
effects on early responses, 231
EPA staffing needs, 240
analysis of demand projections, 251
availability of qualified technical personnel, 243
estimates of future demand, 249
estimating pool of professionals, 249
other factors, 252
technical specialists, 245
expanding program's need for technical oversight, 234
implications for future strategy, 233
larger program, 235
multiple studies and contractors, 225
political pressures, 227
studies versus timely actions, 227
Philadelphia, PA, 129
Pine River, MI, 33
Pittston, PA, 33
Plasma Arc Technology, 206
policy options, 4, 37-57
choosing a strategy for the Superfund system, 37
generic strategic goals, 40
two-part strategy, 39
comprehensive and effective national protection, 40
coping with uncertainty, 42
financing Superfund, 45
funding increases over time, 42
funding levels, 41
long-term program, 40
matching funds from States, 43
other uses of Superfund, 44
program duration and equity, 44
spending by responsible parties, 42
goal 2: accurate estimates of the national problem, 48
goal 3: initial responses at all priority sites, 49
better use of an improved hazard ranking system, 51
economic issues, 52
nature of initial responses in the two-part strategy, 50
technical issues, 52
goal 4: implementation needs of a long-term program, 53
detailed strategic planning, 56

public participation, 57
resolve cleanup goals issue and address scientific uric, erta inties, 53
technical staffs, support, and oversight, 55
technology}, 54
Princeton University Water Resources Program, 143
Protecting the Nation's Groundwater From Contamination, 193
public participation and confidence in Superfund, *257*
EPA community relations program, 263
National Contingency Plan, 260
public participant ion provisions under CERCLA, 259
public part icipat ion under CERCLA versus RCRA, 273
Superfund program in action, 264
National Priorities List, 265
fund-financed removals and remedial responses, 267
enforcement and other legal act ion, 271
Puerto Rico, 129
Pyrolysis Systems, Inc., 206

Randall, Margaret, 265
Regional Response Team, 261
Richland, WA, 32, 212
Rockwell International, 209
RoTech Inc., 207
Rothschild, WI, 204
Ruckelshaus, 240

San Diego, CA, 209
A. L. Sandpiper Corp., 209
SBR Technologies, 211
Science Advisory Board, 195
Senate Appropriations Subcommittee on HUD, 266
Seymour, IN, 27, 28, 106, 223, 270
Seymour Recycling Corp., 27, 28, 106, 223, 230, 232, 233, 270
Sharon Hill, PA, 129
sites requiring clean up, 125
hazardous waste facilities, 137
compliance monitoring, 155
contaminant tolerance levels, 145
EPA's dependence on standard, 138
site selection process, 159
estimate of future NPL, 164
variability among EPA regions, 162
solid waste facilities, 126
cases of facilities, 131
current recognition and evidence of problem, 127
estimate of possible future contributions to the NPL, 134
South Carolina, 46
St. Louis, MI, 33
Stringfellow Acid Pits, 5, 28, 29, 106, 223, 228, 230, 231, 232, 235, 270
Superfund, 3, 6, 7, 8, 10, 13, 18, 22, 23, 27, 28, 30, 32, 33, 37, 39, 40, 42, 43, 44, 45, 48, 49, 51, 52, 54, 55, 56, 61, 63, 64, 66, 67, 68, 69, 70, 71, 74, 75, 80, 82, 85, 92, 103, 104, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 119, 125, 126, 127, 128, 129, 131, 134, 136, 137, 138, 140, 168, 171, 172, 175, 176, 181, 182, 191, 197, 206, 209, 214, 215, 216, 217, 218, 219, 223, 224, 225, 227, 229, 233, 234, 235, 237, 239, 240, 241, 242, 244, 245, 246, 249, 252, 257, 258, 259, 261, 262, 264, 265, 270, 271, 272, 273, 274
policy options, 4
Superior, CO, 131
surface impoundment assessment, 128
sylvester site, 30, 31, 32, 106, 223, 226, 228, 233
Syossett, NY, 132
systems analysis of Superfund, 61

Takasago, West Port, Japan, 213
Tennessee, 205, 242
Knoxville, 205
Texas, 134, 151, 205
Anglet on, 204
Borger, 205
Houston, 210
Thagard Research, *205, 206*
Times Beach, MO, 5, 219
Tokyo, 213
Toledo, OH, 208
Trezak, George J., 253
Tufts University, 218
Turner, A. Keith, 253

University of Arizona Water Resources Research Center, 151
University of Gottingen, 211
U.S. Coast Guard, 262
U.S. Circuit Court of Appeals, 259, 260

Velsico Chemical Co., 33
Verona, MO, 178
Virginia, 133, 271
Virginia Environmental Endowment, 271

Waka River, Japan, 213
Walcott Chemical Co., 33
Walwick, NJ, 211
Wanamassa, NJ, 213
Washington, State of, 32
  Richland, 32, 212
Waste-Tech, 208
Welland, Canada, 206
West Covina, 29
West Germany, 211
  University of Gottingen, 211
Westinghouse Electric Corp., 206
Wichita, KS, 213
Wisconsin, 133, 151
  Marathon County, 133
  Rothschild, 204

Zimpro, 203, 204