

Figures

ix

Tables

x

Preface and Acknowledgments

xi

PART ONE BUSINESS IN THE LABYRINTH

1

Risk Issue Management

3

Frankenfoods; or, The Trouble with Science

16

Cellular Telephones

41

MMT, a Risk Management Masquerade

65

Regulating Nuclear Power The Mismanagement of Public Consultation in Canada

Michael D. Metha

102

Environment's x-File: Pulp Mill Effluent Regulation in Canada
125

PART TWO GOVERNMENTS IN THE LABYRINTH

165

Between Expertise and Bureaucracy: Trapped at the Interface of Science and Policy
167

The CEPA Soap Opera
193

Voluntary Instruments Eric Darier and Debora VanNijnatten
221

242

Into the Tobacco Uncontrolled daze of Moral Risks
259

Towards Competence in Risk Issue Management
278

Appendix: Providing Independent Expert Advice to Government and the Public
193

Notes

301

References

363

Index

385

Abstract at the back

In the chamber of risks shows that while industry and governments have made progress in managing risks to health and environment, they often mismanage public controversies in these areas. In a set of detailed case studies on genetically modified foods, cellular telephones, the fuel additive MMT, pulp mill effluent, nuclear power, substances legislation, tobacco, and cloning, William Leiss chronicles the erratic course of risk management and communication.

Index

A

Academie des Sciences, 294

academies as independent expert advice providers, 293-5, 361n7

AECB (Atomic Energy Control Board), 111, 112, 113-14, 115-16, 118

AIDS (Acquired Immune Deficiency Syndrome), 251

AIT (Agreement on International Trade), 76 (table 2), 95

anti-nuclear movements, 108-9

antisapstain fungicides, 193-4

AOX parameter, 125-6, 136-40, 144, 291, 326n2. *See also* organochlorines, pulp mill effluent

ARET (Accelerated Reduction/Elimination of Toxics), 212, 224-5, 345-6nn45, 46; process, 226, 228-9; mandate, 226-8

ARET Challenge, 223, 225, 230, 233-4; gains, 231-3; future of, 234-7. *See also* ARET

asbestos, 180, 184-5, 284

ASPP (American Society of Plant Physiologists), 25

B

Bacon's Wager, 262, 263-4, 358n12

Baird, Patricia, 266, 267

Barret, Katherine, 22, 23

Bethune, Doug, 91-2

Blade Runner, 259, 263

Bill c-29, 94-5. *See also* Bill C-94

Bill C-32, 214, 216, 350-In40. *See also* CEPA

Bill C-94 (Manganese-based Fuel Additives Act), 93, 94

Bill C-333, 83

biotechnology, 309-11, 339n64; applications of, 38; regulation of, 27-30, 39-40. *See also* GMOS

Blakemore, Colin, 63

bleached kraft mills, 136, 137, 138

Bowling, Milt, 43, 55

Buccini, John, 74 (table 2), 94

C

CANDU reactors, 111, 123

Cantel Industries, 42, 52

Carey, John, 143, 151, 152, 33In6I

Cashore, John, 141, 146, 153

cellular telephones, 4; effects on children, 44-5, 61-3; regulation Of, 41, 42. *See also* RF

CEPA (Canadian Environmental Protection Act): renewal of, 168-70, 200-2, 34InII, 12, 342n2I

Charest, Jean, 143

Chretien, Jean, 66, 83, 94, 97

Clean Air Act, 72, 73, 78-9

climate change, 6-10, 302n8

cloning, 266, 358nI8

closed-cycle technology, 161-2. *See also* pulp mill effluent

cod fishing, 5, 180

“Compound x,” 125, 126, 327n4. *See also* pulp mill effluent

Conway, Gordon, 19-20, 304n8

Copps, Sheila, 75 (table 2), 81, 89, 90, 93, 96

Cormick, Gerald, 145-6

Council for Biotechnology Information, 32-3

CPPI (Canadian Petroleum Products Institute), 85-91, 97-8

CWTA (Canadian Wireless Telecommunications Association), 59, 63

D

Department of Health and Welfare (Canada), 79, 80

DNA (Durham Nuclear Awareness), 116, 120, 121

dioxins, 280, 282. *See also* pulp mill effluent

Doll, Sir Richard, 3

E

ECF (Elemental Chlorine Free) pulp, 146, 151, 157-8. *See also* TCF Pulp economic instruments, 171-2

Eggleton, Art, 76 (table 2), 94

EIA (environmental impact assessment), 114, 334nI5

EMF (electromagnetic fields), 280, 282, 313nnI4, 16. *See also* RF

emissions credits, 6-7

endocrine modulating substances, 270

environmental management, 167-8, 169; government role, 175; margin of error, 187-9; public perception, 168-9

Environment Canada, 334n21, 334-5n22; structural disorganization, 169-70

EPA (Environmental Protection Agency, US): and MMT, 71-9, 81, 96, 98-9; and pulp mill effluent, 134, 139, 156

ethanol, 83-4

Ethyl Corporation: and MMT, 65-70, 72; in America, 73-9; in Canada, 87, 94, 95, 96. *See also* MMT

ETS (environmental tobacco smoke), 242, 243, 249, 251-3, 354n30, 354-5n37; and child health, 255, 256-7, 354n30, 355-6n43. *See also* tobacco

F

federal authority, 170; in environmental management, 194-5, 197-8, 215

Ford Motor Company, 75 (table 2), 76-7, 85, 86

forestry, 283

Frankenstein, 264-5

Fraserview, Vancouver, BC, 42, 43, 49, 52, 54. *See*

also RF

G

General Motors, 91-2

genetic engineering, 260

Genetic Manipulation Advisory Committee (Australia), 36

genetic screening, 357n9

germline therapy, 263

GMOs (genetically modified organisms), 305n14, 307nn28-33; history, 18-21, 281; labelling, 31-3, 308n42; presentation to the public, 22-7; risk management recommendations, 35-8. *See also* biotechnology

Government in the Sunshine Act (US), 121

Gray, Herb, 95

greenhouse gas: levels of, 8

Greenpeace, 18, 45; and pulp mill effluent, 127, 128(table 3), 134, 147, 152; and genetically modified foods, 282

H

hazard vs. risk, 198-9, 204-5

Health Canada: and MMT, 71, 74 (table 2), 80-1, 82-3, 98

HiTech 3000. *See MMT*

I

Imperial Oil, 86

independent advice: functioning, 296-9; purpose, 295-6; scope, 294-5

Industry Canada, 41

information management and policy, 177, 336n28

Internet, 58, 122-3, 190; potential for public use in risk controversy, 45-50, 271-7

issue capture, 279

issue cascading, 280

J

Jospin, Lionel, 18

K

Kenny, Senator Colin, 249

Kraft Foods, 6, 311n54

Krewski, Daniel, 82

Kyoto Protocol, 8, 190

L

Lai, Henry, 60

latency, 3

M

MacMillan Bloedel, 5, 145

mad cow disease, 4, 5, 301n5

MAI (Multilateral Agreement on Investment), 45

managerial competence, 14

manganese: effects of, 66, 68, 79, 323-4n8o

manganism, 66, 68

Marachi, Serio, 65, 94

May, Sir Robert, 31

Mazankowski, Don, 83

Microcell Corporation, 42, 43, 49, 52, 56. *See also RF*

Milton, John, 264, 266

minimum impact mills, 136. *See also pulp mill effluent*

MMT (methylcyclopentadienyl manganese tricarbonyl), 65-101, 291, 318n10, 319nn15, 16, 321n52;

history in US, 73-9;

emission control system aspects, 84-9;

health aspects, 79-84;

sources and amount in environment, 67-8, 69, 97. *See also Ethyl Corporation*

Monsanto Corporation, 5, 17-20, 26, 303n2, 304n8

Moore, Elizabeth, 22

MVMA (Motor Vehicle Manufacturers Association), 85-8, 90

N

NAFTA (North American Free Trade Agreement) 65, 67

"The National" (CBC News) 65, 66

Natural Law party, 39, 311n54

NDG (New Directions Group), 224

"No Margin of Safety" Report, 127, 128 (table 3), 134. *See also* Greenpeace, nuclear power

nuclear disarmament, 110-11

nuclear power, 102-3, 107-8, 284; Canadian regulation of, 113-17; current situation, 123-4; history in Canada, 110-13; public involvement, 111-3; and risk paradigms, 117-21

nuclear waste, 191-2

NWRI (National Water Research Institute), 131 (table 3), 137, 143, 152

O

OBD II(onboard diagnostic systems), 71, 72, 79, 85, 86-7, 90, 95

organochlorines, 125, 135, 136. *See also* AOX parameter, pulp mill effluent

P

PAPRICAN (Pulp and Paper Research Institute of Canada), 128-30 (table 3), 140-1, 147, 149

Pascal's Wager, 260-2, 268

pesticide regulation, 180

Pickering Nuclear Power Plant, 116, 124

pollution prevention: creation vs. release, 218-19; managerial ethic, 219-20

premature policy closure, 190

pulp mill effluent, 125-7;

and chlorine dioxide, 150, 151;

and dioxins, 127-35, 185-6;

and EEM (Environmental Effects Monitoring), 125-6, 129 (table 3), 142-3, 160;

policy development, 140-50, 152-8;

science in, 150-2, 181.

See also AOX parameter, closed cycle technology, "Compound X," ECF, minimum impact mills, TCF public-interest groups, 182-3

Project Environment/ Cellulose I(Sweden), 135, 137-8

R

Radio Protection Bureau, 42

Red Book (Liberal party), 97, 98

Repacholli, Michael, 43, 44

"Responsible Care," 239, 289

RF(radio frequency), 41, 43, 48, 50, 59, 338n48;

and risk assessment, 53;

and risk communication, 50-3;

and risk management, 54-6, 57-8;

and social issues, 53-4.

See also cellular telephones, Microcell Corporation, Frasersview

risk assessment, 281

risk controversy, 12, 278-87

risk communication, 292

risk dialogue projects, 269-70

risk domain, 11-12

risk issue management, 10-15, 286-92

risk management, 10, 285-6; change in issues, 183-6, 189, 216-17, 338n50; cost of, 186-9;

managerial competence, 14; and science, 178-83, 190, 191-2

risk managers, 3-5

"risk society," 106-7

Royal Commission on Lead, 74 (table 2), 79-80

Royal Society (Canada), 49, 52, 59, 191, 295

Royal Society (London), 36, 38, 40, 294

S

second-hand smoke. *See* ETS

science, in policy, 172, 176-8, 290-91, 340nn65, 67

Shapiro, Robert, 17, 20, 304n11

Sierra Club, 70, 109

smoking. *See* tobacco

social movements, 105-7, 120-1

Somerville, Margaret, 267

Sousi, Angela, 43, 44

Stewart Report, 60, 63

Swiss Reinsurance Company, 56

T

TCF (totally chlorine-free) Pulp, 146, 151, 157-8. *See also* ECF Pulp

technology: regulation of, 103-5, 259; risk communication, 268

tobacco, 142-3; obstacles to deterrence, 245-51; patterns of use, 143-5, 352nn3, 5, 8, 9, 10; risk communication, 244-5; social control, 252-3; solutions, 254,353nn17, 25, 26. *See also* ETS

Toyota, 86-7

toxic substances, 194, 195-7, 343n32.; and CEPA, 197-8, 203-4, 208-11; risk assessment, 205-6, 336n; screening, 202, 207

Transport Canada, 86

V

virtual elimination, 121-15, 339n55

virtual reality, 265-6

VNRIS (Voluntary or Non-Regulatory Initiatives), 221-3, 138-40, 350-1n40

W

Walt Disney Company, 63

Weyerhaeuser Company, 5

WHO (World Health Organization), 43, 44, 82

Wirc (Wireless Information Resource Centre), 63

WTR(Wireless Technology Research), 60

WWF(World Wildlife Fund), 45, 284