

INDEX

- A. M. Best, 110, 242–3
 accident law, 304–5
 actual cash value (ACV), 211–12
 actuarial information, 200
 ACV. *See* actual cash value
 AIG, 239
 AIPN. *See* Association of International Petroleum Negotiators’
 Alexander Kielland, 91–2, 116
 Amendment Act 1988, 185–6
 American Nuclear Insurers (ANI), 217
 coverage under, 314–15
 American Petroleum Institute, 135
 Amoco, 201–2
 Amoco Cadiz, 1, 71
 AMSA. *See* Australian Maritime Safety Authority
 Anadarko Petroleum Corporation, 50
 ANI. *See* American Nuclear Insurers
 ANP. *See* Brazilian National Petroleum Agency
 Applicability of Limit of Liability, 51
 Articles of Association, OPOL, 203
 artificial islands, 12
 Ashmore Reef National Nature Reserve, 48
 Association of International Petroleum Negotiators’ (AIPN)
 International Model Well Services Agreement, 14
 Model International Operating Agreement, 14
 Athens Convention, 260–1
 Atomic Energy Act 1959, 223–7
 amendments to, 225
 Clause 2, 226
 Clause I(3), 226
 Clause I(8), 226
 goals of, 224
 Solidarity Agreement in, 225
 Atomic Energy Commission, 183–4
 Atomic Industrial Forum, 171–2
 Australia
 basis of liability, 158–60
 energy production, 154
 legal framework, 155–8
 legislation comparisons, 167
 national interest in, 154–5
 offshore liability regimes, 158–60
 well blowouts, 155
 Australian Maritime Safety Authority (AMSA), 46, 157, 162
 Australian Petroleum Production and Exploration Associations, 155
 Austria, 228
 Baltic Sea, 19
 offshore liability regimes, 90
 Barcelona Convention, 88–90, 94
 Art. 7, 89
 Offshore Protocol, 89–90
 participants in, 89
 Basel I, 249–50
 Basel II, 249–50
 Belgian Motor Insurance Guarantee Fund, 373
 Belgium, 376
 Bell, Phil, 243
 Bergen, 60
 Best Available Techniques, 127–8
 best practice, 166–7
 Bios report, 355–6
 Black Sea, 19, 66, 272–3
 exploration in, 19

- blue ray, 288–9
 BMT ARGOSS, 114
 BOEMRE. *See* Bureau of Ocean Energy Management, Regulation and Enforcement
 Booz Allen Hamilton, 248–9
 BP, 49–50, 201–2, 365
 captive of, 239
 hold-harmless clauses and, 258–9
 Munich Reinsurance and, 283–4
 self-insurance, 239
 Brazilian National Petroleum Agency (ANP), 15–16
 Brussels Convention, 173–4
 coverage caps, 181–2
 modification protocol, 287–9
 public funding in, 177–8, 180–1
 Supplementary, 192
 BSEE. *See* Bureau of Safety and Environmental Enforcement
 Bucharest Convention, 90
 Bulgaria, 19, 90, 299–300
 Bunker Convention, 84–5, 251–2
 Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), 56–7, 135, 146–7, 255–6
 Bureau of Safety and Environmental Enforcement (BSEE), 15–16, 135
 Burmach Oil, 201–2
 business interruption insurance, 251
- Cameron International, 50, 56
 Cameron Iron Works, 52
 Canada, 164–5
 attribution of liability, 164
 basis of liability, 164
 best practice, 166–7
 legal framework, 163–4
 legislation comparisons, 167
 national interest in, 163
 Canada Oil and Gas Operations Act, 163–4
 applicability in time, 165–6
 attribution of liability, 164
 basis of liability, 164
 best practice, 166–7
 comparative analysis, 166–7
 compensation, 165
 compensation mechanisms, 166
 Section 72.1, 166
 capital markets, 265
 analysis, 244
 practice, 243–4
 reinsurance and, 243
 stakeholders on, 243–4
 theory, 242–3
 capping devices, 113, 285
 captives
 of BP, 239
 costs of, 237–8
 creation of, 237–8
 functioning of, 239
 carbon dioxide, 241–2
 cargo, 414–16
 Cartier Island Marine Reserve, 48
 casualty insurance, 51–2
 cat bonds, 242–3
 in Fukushima, 243–4
 stakeholders on, 243
 catastrophe insurance, 278–9
 Catastrophe Reserve Fund, 216
 causation, 409
 in Norwegian offshore activities, 120–1
 offshore liability regimes and, 170
 under Offshore Petroleum and Greenhouse Gas Storage Act, 160
 in Oil Pollution Act of 1990, 137–8
 in OPOL, 104
 CFR. *See* Code of Federal Regulations
 CGAA. *See* Coast Guard Authorization Act
 CGMTA. *See* Coast Guard and Maritime Transportation Act
 Chartis, 248–9
 Chernobyl, 178–9
 Chevron, 56
 Civil Liability Convention (CLC), 70, 234
 1969, 71
 1971, 71
 1992, 74–5
 analysis of, 70–1

- Article VII.11, 77
 Claims Manual, 375
 compensation in, 75–6, 286
 compulsory financial guarantees, 76–7
 evolution of, 71–3
 historical background, 71–3
 liability in, 71, 74–5
 rapid claims management and, 361–2
 on transboundary harm, 377
 vessel-based pollution and, 233–4
 claims settlement, 410. *See also* rapid claims management
 in Deepwater Horizon, 364–6
 IOPC, 361–2
 offshore liability regimes, 170–1
 OPOL, 205–6
 CLC. *See* Civil Liability Convention
 Clean Air Act, 133
 Clean Water Act (CWA), 52, 54, 58, 133, 152
 CLEE. *See* Convention of Civil Liability for Oil Pollution Damage resulting from Exploration for and the Exploitation of Seabed Mineral Resources
 Climate and Pollution Agency, 15–16
 Cluff Oil Limited, 201–2
 Coast Guard and Maritime Transportation Act (CGMTA), 141–2
 OPA and, 142
 Coast Guard Authorization Act (CGAA), 138–9
 Coastal Zone Management Act, 133
 Code of Federal Regulations (CFR), 134–5
 collectivization, 306–7
 COM(2011) 688 final, 4
 Communication 2010, 93–4
 compensation, 7. *See also* international compensation, nuclear sector amount of, 410
 Canada Oil and Gas Operations Act, 165
 civil, 366–7
 in CLC, 75–6, 286
 efficient, 304–5
 fair, 306–7
 funds
 economic principles, 351–2
 insurance compared with, 349–51
 in OPA, 150–1
 OSLTF, 150–3
 rapid claims management, 371–2
 US offshore activities and, 150–3
 government role in, 343
 arguments against, 344–5
 arguments for, 343–4
 direct, 343
 instruments, 339
 market solutions, 307
 mechanisms, 411
 Canada Oil and Gas Operations Act, 166
 OPOL, 109–15
 Subsoil Act, 130–1
 under NRC, 231–2
 nuclear sector, 189–90
 offshore liability regimes and, 170–1
 under Offshore Petroleum and Greenhouse Gas Storage Act, 161–2
 under OPA, 141–2
 under OPOL, 107–8, 109–15, 209
 limits, 203
 under Petroleum Activities Act, 123
 principles of, 304–5
 reasons for, 305–6
 workers, 251
 compulsory financial guarantees, 76–7
 compulsory insurance, 332, 334
 Conoco North Sea Incorporated, 201–2
 ConocoPhillips, 56
 contamination, 75–6
 continental shelf, 12
 Continental Shelf Act, 127
 Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution (CRISTAL), 79–81, 233–4
 Contracting State, 78
 Contracts Act 1999, 207
 Convention for the Protection of the Marine Environment of the North-East Atlantic of 1992. *See* OSPAR Convention

- Convention of Civil Liability for Oil Pollution Damage resulting from Exploration for and the Exploitation of Seabed Mineral Resources (CLEE), 101, 202
- Convention on Limitation of Liability for Maritime Claims, 107
- Convention on Supplementary Compensation for Nuclear Damage (CSC), 179, 190
- Council Directive 92/91 EEC, 92
- Court Supervised Settlement Program (CSSP), 366
- criminal liability, 153–4
- CRISTAL. *See* Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution
- CSC. *See* Convention on Supplementary Compensation for Nuclear Damage
- CSSP. *See* Court Supervised Settlement Program
- CWA. *See* Clean Water Act
- Cypriot, 19
- damages, 15
 - categories of, 367
 - under EMANI, 221
 - insurance, 251
 - international compensation, nuclear sector, 179–80, 189–90
 - in nuclear international compensation, 179–80
 - under Offshore Petroleum and Greenhouse Gas Storage Act, 160
 - OIL on, 211–12
 - under Oil Pollution Act of 1990, 139–41
 - in OPOL, 105–6, 209
 - under Petroleum Activities Act, 122–3
 - property, 189–90, 220–1, 230
 - remedies, 410
 - self-insurance and, 241–2
 - under Subsoil Act, 129–30
 - transboundary harm and, 379, 380, 381–2
 - in US, 220–1
 - WOAD cost estimates, 24
- Danish Energy Agency (DEA), 15–16, 126, 127–8
- Danish Environmental Protection Agency (DEPA), 127–8
- Darwin Magistrates' Court, 47
- DEA. *See* Danish Energy Agency
- DECC. *See* Department of Energy and Climate Change
- Declaration of Principles, 86–7
- deductibles, 352
- Deepwater Horizon, 1, 2–4, 21, 59–60, 62, 66, 98–9, 239–40, 274, 279
 - casualty insurance, 51–2
 - civil compensation, 366–7
 - claims settlement in, 364–6
 - costs of, 267–8
 - critical review of trust fund, 367–9
 - hold-harmless clauses, 259
 - Hull insurance, 52
 - insurance industry and, 258–60
 - legal issues, 49–53
 - limits of expert opinion on, 64–6
 - Lloyds on, 258–60
 - Noble Energy on, 296–7
 - overview of legal proceedings, 53–6
 - political instability from, 305–6
 - premiums and, 259–60
 - reinsurance and, 258–60
- Deepwater Port Liability Fund, 152
- Denmark
 - basis of liability in, 128
 - legal framework, 126–8
 - legislation comparisons, 167
 - national interest in, 126
 - offshore liability regimes, 128
 - regulation in, 129
- DEPA. *See* Danish Environmental Protection Agency
- Department of Communications, Marine and Natural Resources, 15–16
- Department of Energy and Climate Change (DECC), 15–16, 29, 43–4, 98–9, 100, 111
- Guidance Note, 111–12
- OPOL, 210

- Department of Interior (DOI), 131
 Department of Justice (DOJ), 53, 365–6
 Det Norske Veritas (DNV), 22–4
 Directive 2009/103/EC, 372
 Directive 2013/30/EU, 5
 on mandatory financial security, 337
 Directive on Carbon Capture and Storage, 338
 Directive on Safety of Offshore Oil and Gas Operations, 37, 94–7
 Annex I, 95
 Art. 20, 96–7
 data reporting format, 97
 Directive 94/22/EC, 95
 Directive 2013/30/EU, 95–6
 extra-territory effects, 96–7
 Preamble (38), 96–7
 Regulation (COM(2011) 688 final), 94–7
 transboundary effects, 96
 Disaster Relief Act, 371
 DNV. *See* Det Norske Veritas
 DOI. *See* Department of Interior
 DOJ. *See* Department of Justice
 Drilling Safety Rule, 56–7
 due diligence clauses, 252
 Dutch Terrorism Risk Re-insurance Company, 348
- Eastern District of Louisiana, 53
 Eastern Mediterranean Basin, 21
 Economic and Property Damages Settlement Agreement, 366
 economic channelling, 314–15
 EED. *See* Energy Exploration and Development Insurance
 EIA. *See* Energy Information Administration
 Ekofisk, 115–16
 Elgin platform blowout, 44
 HSE on, 44
 ELINI. *See* European Liability Insurance for the Nuclear Industry
 EMANI. *See* European Mutual Association for Nuclear Insurance
 Emission Trading Scheme (ETS), 328
 empirics, 9–10
 EMSA. *See* European Maritime Safety Agency
 Endangered Species Act, 133
 Energy Act 2008, 99
 Energy Exploration and Development Insurance (EED), 252
 Energy Independence and Security, 190
 Energy Information Administration (EIA), 16, 20
 energy losses, 34–5
 Energy Policy Act of 2005, 134
 Energy Safety and Security Act, 163–4
 ENO. *See* extraordinary nuclear occurrence
 Environmental Damage Insurance, 353–4
 Environmental Damage Regulations 2009, 101, 102–3
 Regulation 7, 107
 environmental funds, 352–6
 in Finland, 354
 Hungary, 352–4
 stakeholders on, 354–6, 357–8
 in Sweden, 354
 Environmental Liability Directive, 93–4, 304
 environmental liability insurance, 251
 Environmental Protection Agency (EPA), 57, 133
 Erika, 1
 Erika I, 2
 Erika II, 2, 71
 Esso, 201–2
 ETS. *See* Emission Trading Scheme
 European Commission, 2, 20, 71
 on offshore accident costs, 255–6
 European Insurance and Reinsurance Federation, 17
 European Liability Insurance for the Nuclear Industry (ELINI)
 coverage under, 221–2
 establishment of, 221–2
 members of, 223
 Paris Convention and, 223
 European Maritime Safety Agency (EMSA), 329–30

- European Mutual Association for Nuclear Insurance (EMANI)
 - coverage under, 221
 - damages under, 221
 - establishment of, 221
- European Union (EU)
 - high risk wells in, 284–5
 - mandatory financial security in, 332–3, 335–8
 - nuclear sector pooling mechanisms in, 221–3, 227–9
 - offshore accidents, 91–2
 - offshore activities, 91–2
 - stakeholders on, 268
- EUROSTAT, 18–20
- exclusive jurisdiction, 177
- exploitation
 - mining processes, 13
 - Offshore Protocol on, 89–90
- exploration, 13
 - in Black Sea, 19
 - licenses, 17
 - Offshore Protocol on, 89–90
- extraordinary nuclear occurrence (ENO), 184–6
 - NRC on, 184–5
- extra-territory effects, 96–7
- Extremus, 348
- Exxon Valdez, 1, 133–4, 150–3
- ExxonMobil, 56
- facilities, 18–20
- fair compensation, 306–7
- Federal Energy and Regulatory Commission, 134
- Feinberg, Ken, 282
- financial caps
 - liability, 317–19
 - Noble Energy on, 293–4
 - nuclear sector, international compensation, 181–2
 - Oil Pollution Act of 1990, 293
 - Paris Convention, 181–2
- Finland, 354
- fire insurance, 247
- first layer coverage, 239–40
- first party insurance, 247
- Fishermen Compensation Regulations, 117
- fishing vessel, 416–17
- Fitch, 110, 242–3
- fixed platforms, 13
- force majeure*, 6
- Forties Alpha, 91–2
- Fukushima, 171–2, 224, 373
 - cat bonds in, 243–4
 - channelling of liability, 314
- Fund Convention, 2, 70
 - analysis of, 70–1
 - Article 4.7, 361
 - Article 6, 361
 - international legal framework, 77–9
 - rapid claims management and, 361–2
 - on transboundary harm, 377
 - vessel-based pollution and, 233–4
- Gannet Alpha, 43–4, 91–2
- GAREAT, 348
- gas drilling, 257–8
- GCCF. *See* Gulf Coast Claim Facility
- general liability insurance, 251
- geopressures, 61–2
- German Environmental Liability Act of 1990, 335
- Germany
 - nuclear pooling mechanisms in, 223–7
 - development of, 225
 - financial security in, 223–7
 - nuclear sector in, 224–5
 - unlimited liability in, 228
- GL Noble Denton, 255–6
- government, 386
 - as reinsurer, 346, 348–9
 - arguments against, 347–8
 - arguments for, 346–7
 - role in compensation, 343
 - arguments against, 344–5
 - arguments for, 343–4
 - direct, 343
- Greenland, 284–5
- Group Excess Reinsurance Policies, 216
- Group-Hydra Insurance Company, 217

- guarantees, 265
 analysis, 245–6
 insurance compared with, 245
 OPOL on, 245–6
 practice, 245
 stakeholders on, 245
 theory, 244–5
 verification, 246
- Guidelines for Relief Well
 Planning, 113
- Guidelines on Financial Responsibility
 from Oil and Gas UK, 241–2
- Gulf Coast Claim Facility (GCCF), 50,
 63, 271–3, 359–60, 364–6, 368
 declaration of losses in, 255–6
- Gulf of Mexico, 53, 61, 66, 252, 259–60
 drilling in, 269–71
 Munich Reinsurance on, 280–1
 risks in, 268–9
 stakeholders on, 269–71
- Gulf Region Health Outreach
 Program, 367
- GulfOil Production Company, 201–2
- Gullfaks C incident, 41, 91–2
- Halliburton, 50, 52
- Hamilton Brothers, 201–2
- Hannover Ruekversicherung AG,
 248–9
- Harvard Report, 173
- HCRs. *See* hydrocarbon releases
- Health and Safety Executive (HSE),
 15–16, 26–30
 in Elgin platform blowout, 44
- Hebei Spirit, 369–70
- hit-and-run strategies, 271
- hold-harmless clauses, 171–2
 BP, 258–9
 Deepwater Horizon, 259
- HSE. *See* Health and Safety Executive
- hull insurance, 52
- Hungary, 352–4
- Hurricane Sandy, 279
- hurricanes, 270
- hydrocarbon releases (HCRs), 28
- hydrocarbons, 33
 Ula field, 42–3
- Hydrocarbons Licensing Directive
 1994 (94/22/EC), 92–3
- Hydrocarbons Licensing Directive
 Regulations, 99
- IADC. *See* International Association of
 Drilling Contractors’
- IAEA. *See* International Atomic Energy
 Agency
- IAT. *See* Incident Analysis Team
- iceberg theory, 23
- IMO. *See* International Maritime
 Organization
- Incident Analysis Team (IAT), 155
- Indonesia, 85–6
 transboundary complaints, 48–9
 information asymmetry, 320
- INPO. *See* Institute of Nuclear Power
 Operations
- insolvency risk, 273–6, 337–8
 liability and, 320–1
 offshore accidents, 273–6
 reinsurance and, 274
 safety regulation and, 320–1
 stakeholders on, 274–5
- installations, 18–20
- Institute of Nuclear Power Operations
 (INPO), 183–4, 221
 NEIL and, 223
- insurance, 17, 265. *See also specific types*
 actors in, 248
 analysis, 260–1
 brokers, 249
 business interruption, 251
 capacity, 252–5, 258–9
 catastrophe, 278–9
 combinations, 264
 compensation fund compared with,
 349–51
 compulsory, 332, 334
 costs estimation, 255–6
 Deepwater Horizon and, 258–60
 demand for, 247
 environmental liability, 251
 expansion of, 277
 fire, 247
 first party, 247

- insurance (cont.)
 general liability, 251
 guarantees compared with, 245
 hull, 52
 liability, 247
 limitations, 260–1
 Lloyds on, 254
 mandatory, 277–9, 340–1
 MODU, 251–2
 in nuclear sector, 198
 offshore accidents, 277
 operators extra expense, 251
 OPOL and, 263–4
 physical damage, 251
 pollution and, 253
 pooling mechanisms compared with, 198–201
 premiums, 249–50
 calculation of, 257–8
 Deepwater Horizon and, 259–60
 operators on, 258
 P&I, 215–17, 258
 retrospective, 219, 295
 principles of, 247
 risk analysis, 255–6
 risk aversion and, 246
 risk calculation, 250
 self-insurance compared with, 260–1
 stakeholders, 248–50
 structure of coverage, 250–2
 terrorism, 348
 theory, 246–8
 third party, 247
 types of, 247
 utility-based theory of, 246
 workers compensation, 251
- integration of methodologies, 10
- International Association of Drilling Contractors' (IADC), 16, 34
 Standard Form of International Offshore Daywork Drilling Contract, 14
- International Association of Oil and Gas Producers (OGP), 34
- International Atomic Energy Agency (IAEA), 173–4
 public funding and, 180–1
- international compensation, nuclear sector
 channelling of liability, 175–6
 conventions, 181–2
 coverage caps, 181–2
 critical comparisons, 191–5
 exclusive jurisdiction, 177
 extraordinary nuclear occurrence, 184–6
 financial protection, 187
 financial security, 176–7
 first generation, 172–3
 origin of, 172–3
 property damage and, 189–90
 public funding in, 177–8, 180–1
 scope of damage in, 179–80
 second generation, 178–9
 strict liability, 172–3
 third party liability, 187–9
 in US, 182, 183–4, 186–7, 189–90
- International Convention on Civil Liability for Oil Pollution Damage, 1–2
- International Fund for Compensation for Oil Pollution Damage, 1–2
- international legal framework, 69–70
 Fund Convention 1971/1992, 77–9
 voluntary mechanisms, 79–81
- International Maritime Organization (IMO), 2, 72–3, 85–6, 376–7
 Legal Committee, 85–6
- International Model Well Services Agreement, AIPN, 14
- International Oil Pollution Compensation Fund (IOPC), 70–1, 361
 claims management, 361–2
- International Regulators' Forum (IRF), 33, 34
- International Union of Marine Insurance (IUMI), 17
- IOPC. *See* International Oil Pollution Compensation Fund
- IRF. *See* International Regulators' Forum
- IUMI. *See* International Union of Marine Insurance

- Japan, 373
 Jiyeh, 19
 JOA. *See* joint operating agreements
 joint and several liability, 316–17
 joint arrangements, 82
 joint care case
 negligence rule in, 310–11
 strict liability rule in, 310–11
 Joint Committee on Atomic Energy, 188
 Joint Committee on Atomic Law, 185
 joint operating agreements (JOA), 14
 Article 7, 119
 standard form of, 15
 Joint Protocol, 179
 joint research centre (JRC), 24
 Juneau, Patrick, 366
 Jupiter Insurance Ltd., 51, 239
- Kimberly coastline, 48
Kirki, 46
Klif, 118
- Law 128, 19
 Leading Oil Government's Oil and Gas Industry Task Force (LOGIC), 14
 Lebanon, 19, 376
 legal analysis, 6
 Letters of Undertaking, 215
 Levantine Basin, 21
 liability, 7, 8. *See also* offshore liability regimes
 attribution of, 313, 409–10
 basis for, 408
 cargo, 414–16
 causal relationships in, 321–2
 channelling of, 313–16
 Fukushima, 314
 nuclear sector, international compensation, 175–6
 in nuclear sector, 314
 in Paris Convention, 175–6
 in Price Anderson Act, 186–7
 TEPCO, 314
 in Vienna Convention, 175–6
 in Civil Liability Convention, 71, 74–5
- criminal
 knowing violation, 153–4
 negligent violation, 153–4
 United States offshore activities, 153–4
 as deterrent, 318
 economic theory, 308–12
 efficient, 303–5, 308, 384
 environmental, insurance, 251
 financial caps, 317–19
 fishing vessel, 416–17
 general, insurance, 251
 insolvency and, 320–1
 insurance, 247
 joint and severable, 316–17
 limited, 176
 limits exceeded by incident date, 418–30
 limits exceeded by vessel type, 412–17
 under negligence rule, 309
 in NRC, 183
 under Offshore Petroleum and Greenhouse Gas Storage Act, 158–60
 in PAA, 183
 in Paris Convention, 174–6
 under Petroleum Activities Act, 121–2
 principles of, 304–5
 public law, 183–4
 rapid claims management and liability law, 372
 regulation compared with, 319, 326–8
 relieving, 314–15
 stakeholder assessment of, 328–30
 standards, 271–3
 strict, 172–3, 174–5, 208
 strict liability rule, 310
 in joint care case, 310–11
 negligence rule compared with, 311
 in offshore accidents, 312–13
 Subsoil Act, 129
 suits, 321–2
 tank barge, 413, 414
 tank ship, 413

- liability (cont.)
 - unlimited, 228
 - in Vienna Convention, 174–6
- licensees, 13
- operators distinguished from, 95
- Lloyds
 - Casualty Reports, 22–4
 - on Deepwater Horizon, 258–60
 - on insurance, 254
 - Macondo and, 254, 273
 - on mandatory financial security, 334–5
- LOGIC. *See* Leading Oil Government's Oil and Gas Industry Task Force
- losses, 15
- lost time accidents (LTA), 32
- Macondo, 35–6, 53, 59–60, 64–6, 270, 273–4
 - Lloyds and, 254, 273
 - Noble Energy on, 293–4
 - responses after, 56–7
- MAERP. *See* Mutual Atomic Energy Reinsurance Pool
- Malta, 21
- mandatory financial security
 - criteria for, 331–2
 - Directive 2013/30/EU on, , 337
 - in EU, 332–3, 335–8
 - Lloyds on, 334–5
 - offshore risks and, 332–3
 - stakeholder assessment, 332–3
- mandatory insurance, 277–9, 340–1
- Marine Environment Protection Act, 127
- Marine Strategic Framework Directive, 3, 93
 - Directive 2013/30/EU, 96
- Marine Well Containment Company, 56
- MARPOL, 70
 - Annex I, 83
 - Art. 2, 83–4
 - definitions in, 83–4
 - on discharge, 83–4
 - Unified Interpretation of, 83
- Martin, John, 364–6
- Medical Benefits Class Action Settlement Agreement, 366, 367
- Mediterranean Sea, 19, 21, 292
 - offshore activities, 21–2
 - offshore liability regimes, 88–90
- Member State Law, 2–3
- Memorandum of Association, 203
- Merchant Shipping Act, 129–30
- Merchant Shipping Regulations 1998, 109–10
- Migratory Bird Treaty Act, 55
- Minerals Management Service (MMS), 56–7
- mining processes, 13
- Ministry of Petroleum and Energy, 30–1, 117–18
- Mitsui Oil Exploration Company of Japan (MOEX), 50, 51, 54
- MMS. *See* Minerals Management Service
- Mobil North Sea Limited, 201–2
- mobile drilling units (MODU), 84–5
 - in insurance, 251–2
- MOEX. *See* Mitsui Oil Exploration Company of Japan
- Montara, 45–7, 49, 376
- Montara Commission of Inquiry, 45–6, 155, 156–7
- Montara Development Project, 45
- Moody's, 110, 242–3
- moral hazards, 332
 - control of, 331
 - Munich Reinsurance and, 282
 - remedies, 352
 - of self-insurance, 240–1
- Motor Vehicle Insurance Directive, 374–5
- Multi-District Litigation docket, 53
- Munich Reinsurance, 248–9, 287–8, 314–15
 - analysis, 285–6
 - BP and, 283–4
 - on Gulf of Mexico, 280–1
 - moral hazard and, 282
 - on Noble Energy, 298
 - proposal, 340–1
 - reaction by, 284–5
 - on risk differentiation, 298–300

- SOS model, 280–2
 stakeholder's assessment, 283–4
mutatis mutandis, 312
 Mutual Atomic Energy Reinsurance Pool (MAERP), 187–8
 mutual monitoring, 200–1, 298, 342–3
 in P&I Clubs, 232–3
 pooling mechanisms, 200–1, 229–30
- NatCat, 288
 National Energy Board, 163
 National Environmental Policy Act, 135
 National Fish and Wildlife Foundation (NFWF), 55
 National Oceanic and Atmospheric Administration (NOAA), 140–1
 National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), 15–16, 156–7, 159
 National Pollutant Discharge Elimination System (NPDES), 133
 National Pollution Funds Center, 145, 152–3
 national regulatory authorities
 in Norway, 30
 offshore activities, 24–6
 in UK, 26–30
 natural gas, 20
 NEA. *See* Nuclear Energy Agency
 negative redistribution, 307
 negligence rule, 309
 in joint care case, 310–11
 liability under, 309
 strict liability rule compared with, 311
 NEIL. *See* Nuclear Electric Insurance Limited
 NELIA. *See* Nuclear Energy Liability Insurance Association
 Netherlands, 20–1, 376
 offshore activities in, 31
 personal injuries in, 32
 Netherlands Oil and Gas Exploration and Production Association (NOGEP), 16
 NFWF. *See* National Fish and Wildlife Foundation
 9/11 Fund, 371–2
 1984 Protocols, 71
 NOAA. *See* National Oceanic and Atmospheric Administration
 Noble Energy, 342–3
 background, 293–4
 on caps, 293–4
 challenges in, 299–300
 on Deepwater Horizon, 296–7
 evaluation of, 298–300
 on Macondo, 293–4
 on polluter pays principle, 293
 proposal contents, 294–5
 stakeholders on, 297–8
 weaknesses, 298
 NOGEP. *See* Netherlands Oil and Gas Exploration and Production Association
 NOPSEMA. *See* National Offshore Petroleum Safety and Environmental Management Authority
 Nordic Convention, 88
 North Africa, 19, 252
 North Sea, 3, 63, 375, 376
 drilling in, 269–71
 offshore activities in, 19, 20–1
 offshore liability regimes, 87–8
 Valhall PCP production platform fire in, 41–2
 North Sea Offshore Authorities Forum (NSOAF), 31–3
 North Sea Sun Oil Company Limited, 201–2
 Northern Territory Department of Resources, 46–7
 Norway, 20, 26, 376
 national regulatory authorities in, 30
 offshore activities
 basis of liability in, 119
 causation in, 120–1
 legal framework, 116–18
 national interest in, 115–16
 regulation, 120
 offshore liability regimes, 119
 oil spills in, 30–1

- Norway (cont.)
 personal injuries in, 30
 rapid claims management in, 360–2
 Norwegian Environment Agency, 118
 Norwegian Petroleum Directorate (NPD), 117–18
 Norwegian Statoil, 17
 NPD. *See* Norwegian Petroleum Directorate
 NPDES. *See* National Pollutant Discharge Elimination System
 NRC. *See* Nuclear Regulatory Commission
 NSOAF. *See* North Sea Offshore Authorities Forum
 Nuclear Electric Insurance Limited (NEIL), 220
 INPO and, 223
 self regulatory agencies and, 223
 WANO and, 223
 Nuclear Energy Agency (NEA), 173–4, 192–3
 public funding in, 180–1
 Nuclear Energy Liability Insurance Association (NELIA), 187–8
 Nuclear Liability Act, 176
 nuclear radiation, 179–80
 Nuclear Regulatory Commission (NRC), 182, 183–4, 218
 compensation under, 231–2
 on extraordinary nuclear occurrences, 184–5
 liability in, 183
 pooling mechanisms of, 228–9
 safety standards, 230
 nuclear sector
 channelling of liability in, 314
 coverage in, 287–9
 development of, 171–2
 in Germany, 224–5
 insurance in, 198
 international compensation
 channelling of liability, 175–6
 conventions, 181–2
 coverage caps, 181–2
 critical comparisons, 191–5
 exclusive jurisdiction, 177
 extraordinary nuclear occurrence, 184–6
 financial protection, 187
 financial security, 176–7
 first generation, 172–3
 origin of, 172–3
 property damage and, 189–90
 public funding in, 177–8, 180–1
 scope of damage in, 179–80
 second generation, 178–9
 strict liability, 172–3
 third party liability, 187–9
 in US, 182, 183–4, 186–7, 189–90
 offshore liability regimes and, 171–2
 pooling mechanisms in, 217
 development of, 225
 in EU, 221–3, 227–9
 financial security in, 223–7
 Germany, 223–7
 Price Anderson Act, 217
 public liability in, 217
 retrospective premiums, 219
 Nuclear Waste Fund, 186–7
 Obama administration, 57, 60
 OCIL. *See* Oil Casualty Insurance Ltd.
 OEE. *See* operators extra expenses
 offshore accidents
 analysis of recent, 41
 costs of, 255–6
 distribution of, 23
 energy losses from, 34–5
 in EU, 91–2
 EU Commission on, 255–6
 funds for, 356–9
 insolvency risk, 273–6
 insurance, 277
 large, 276
 liability standards, 271–3
 major, 268–9
 mandatory insurance, 277–9
 market capacity and, 273–4
 middle-size, 276, 301
 observation from available data, 36–7
 operators in, 271
 overview of, 37

- political instability from, 305–6
- potential costs of, 267–8
 - verification, 268–9
- probability of, 272–3
- safety regulation, 269
- self-guarantee, 276–7
- small, 275–6, 301
- strict liability rule in, 312–13
- technical differences in, 269–71
- in US, 275–6
- vessel-based pollution in, 270–1
- victims, 305–6
- WOAD definition, 23, 24
- offshore activities
 - Australia
 - legal framework, 155–8
 - legislation comparisons, 167
 - national interest in, 154–5
 - well blowouts, 155
 - Canada
 - best practice, 166–7
 - damages under, 164–5
 - legal framework, 163–4
 - legislation comparisons, 167
 - national interest in, 163
 - Denmark
 - legal framework, 126–8
 - legislation comparisons, 167
 - national interest in, 126
 - regulation in, 129
 - EU interest in, 91–2
 - expert evaluation, 61–4
 - financial responsibility, 149
 - importance of, 18
 - industry database, 33–6
 - industry structure of, 13–15
 - limits of expert opinion on, 64–6
 - mandatory financial security and, 332–3
 - Mediterranean Sea, 21–2
 - national regulatory authorities, 24–6
 - in Netherlands, 31
 - in North Sea, 19, 20–1
 - Norway
 - causation in, 120–1
 - legal framework, 116–18
 - national interest in, 115–16
 - regulation, 120
 - pollution from, 81–2
 - regional database, 31–3
 - regulation of, 322–4
 - risk calculation, 250
 - terminology in, 12–13
 - United Kingdom
 - legislation comparisons, 167
 - national interest, 98
 - statutory laws, 98–100
 - United States
 - compensation funds, 150–3
 - on jurisdictional issues, 153–4
 - legal framework, 131–6
 - legislation comparisons, 167
 - national interest in, 131
 - regulation in, 137
- Offshore Crude Oil Production of EU-28, 18–20
- Offshore Exploration Regulations 2009, 99–100
- Offshore Gas Storage and Unloading Regulations 2009, 99–100
- offshore liability regimes, 86–7, 91
 - Australia, 158–60
 - Baltic Sea, 90
 - basis of liability in, 103–4, 170
 - Canada, 164
 - causation and, 170
 - claims settlement, 170–1
 - comparative comments, 167–71
 - compensation and, 170–1
 - country studies, 97–8
 - Denmark, 128
 - Mediterranean, 88–90
 - North Sea, 87–8
 - Norway, 119
 - nuclear sector and, 171–2
 - regulation and, 170
 - United Kingdom, 100–3
 - United States, 136, 153–4
- Offshore Oil Pollution Compensation Fund, 152
- Offshore Petroleum and Greenhouse Gas Storage Act, 47, 156
 - attribution of liability under, 160
 - basis of liability in, 158–60
 - causation under, 160
 - compensation under, 161–2

- Offshore Petroleum (cont.)
 damages under, 160
 regulation under, 160
 Section 569, 160
 Section 569(1), 158–9
 Section 571, 159, 161–2
 Section 775D, 160
- Offshore Pollution Liability Agreement (OPOL), 100, 234, 265, 267, 301, 335–6, 379
 application, 210
 arbitrators, 207
 Articles of Association, 203
 attribution of liability in, 105
 basis of liability in, 103–4
 causation in, 104
 claim settlement, 108–9
 claims handling, 205–6
 Clause II.B of, 204
 Clause III.2 of, 204
 Clause IV, 204–5
 Clause IV (A), 208
 Clause VI, 206
 Clause VII, 206
 Clause XIII, 207
 combinations, 264
 compensation in, 107–8, 209
 compensation limits in, 203
 compensation mechanisms, 109–15
 coverage of, 101–2, 263, 274
 damages in, 105–6, 209
 DECC and, 210
 enforcement, 206–7
 evaluation, 208–10
 expansion of, 291–3
 extension of, 202
 financial responsibility, 204–5
 FR1, 204–5
 FR2, 204–5
 on guarantees, 245–6
 insurance and, 263–4
 limitations of, 209, 210, 292
 main features, 202–3
 mandatory membership of, 291
 member states, 232
 membership of, 202
 Memorandum of Association, 203
 obligations in, 204–5
- OEE and, 264
 operators in, 203–4
 origins of, 201–2
 personal injuries under, 106
 pooling mechanisms in, 209, 232
 practice, 207–8
 rapid claims management, 360
 remedial measures in, 105–6, 205
 risk-sharing in, 208–9
 rules, 203–4
 self-insurance in, 204–5, 208, 242–3
 strengths, 208–10
 strict liability in, 208
 structure, 203–4, 209
 transboundary harm and, 380
 transformation of, 292
 in UK, 232, 263
 weaknesses of, 209–10
- Offshore Pollution Liability Association, Ltd., 203
 membership in, 204
- Offshore Protocol, Barcelona Convention, 89
 on exploitation, 89–90
 on exploration, 89–90
- Offshore Safety Act, 127, 129–30
- offshore units, 84
- OGP. *See* International Association of Oil and Gas Producers
- OIL. *See* Oil Insurance Ltd.
- Oil and Gas Standard Form Joint Operating Agreement, 14
 regulation in, 137
- Oil and Gas UK, 255–6, 375
- Oil Casualty Insurance Ltd. (OCIL), 213, 265
 expansion of, 290
 risk sharing, 261–2
 shareholders, 213
- Oil Insurance Ltd. (OIL), 211–12, 265
 coverage under, 211–12
 expansion of, 290
 formation of, 211
 on physical damage, 211–12
 ratings, 211
 risk sharing, 261–2
 shareholders, 211, 212

- Oil Pollution Act of 1990 (OPA), 1,
 50–1, 54, 70, 133–4, 141,
 196, 335
 Applicability of Limit of Liability, 51
 basis of liability, 136
 causation in, 137–8
 CGMTA and, 142
 claim settlement, 144–6
 compensation funds and, 150–1
 compensation under, 141–2
 damages under, 139–41
 financial security and, 146–53
 liability cap, 293
 limits under, 280–2
 rapid claims management, 363–4
 Section 1016, 146–7
 Section 2702, 137–8
 Section 2703, 137–8
 section 2713, 363
 state legislation and, 143
 oil pollution emergency plans
 (OPEPs), 112
 Oil Pollution Preparedness Responses
 and Co-Operation 1990 (OPRC
 Convention), 84–5
 on offshore units, 84
 Oil Spill Contingency and Response
 (OSCAR), 113–15
 Oil Spill Information System (OSIS),
 113–15
 Oil Spill Liability Trust Fund
 (OSLTF), 145
 compensation funds, 150–3
 components of, 151
 Emergency Fund, 151
 financial sources, 151
 Principle Fund, 151
 Oil Spill Prevention and Response
 Advisory (OSPRAG),
 111–12, 113
 oil spills, 43–4
 clean-up costs, 256
 high profile, 37
 in Norway, 30–1
 from offshore blowouts, 38
 Oilmap, 113–15
 OOG. *See* Overlegorgaan Olie en Gas
 OPA. *See* Oil Pollution Act of 1990
 OPEPs. *See* oil pollution emergency
 plans
 operators, 13
 licensee distinguished from, 95
 in offshore accidents, 271
 in OPOL, 203–4
 on premiums, 258
 Operator's Cooperative Emergency
 Services (OCES)
 Joint Declaration and Emergency
 Assistance Code, 16
 role of, 16
 operators extra expenses (OEE), 35–6,
 51, 251, 252
 OPOL and, 264
 OPOL. *See* Offshore Pollution Liability
 Agreement
 OPRC Convention. *See* Oil Pollution
 Preparedness Responses and
 Co-Operation 1990
 OSCAR. *See* Oil Spill Contingency and
 Response
 OSIS. *See* Oil Spill Information System
 OSLA. *See* Outer Continental Shelf
 Lands Act
 OSLTF. *See* Oil Spill Liability Trust
 Fund
 OSPAR Convention, 87–8
 Annex III, 87–8
 Art. 2(2)(b), 87
 on pollution, 87–8
 principles of, 87
 OSPRAG. *See* Operator's Cooperative
 Emergency Services
 Outer Continental Shelf Lands Act
 (OCSLA), 131, 136
 on jurisdictional issues, 153
 Section 1334, 147
 Section 1337, 147
 Overlegorgaan Olie en Gas (OOG), 329
 PAA. *See* Price Anderson Act
 PAL. *See* Passengers and their Luggage
 by Sea
 parametric trigger-coverage, 281, 340
 Paris Convention, 173–4, 179
 channelling of liability, 175–6
 coverage caps, 181–2

- Paris Convention (cont.)
 ELINI and, 223
 exclusive jurisdiction, 177
 financial security, 176–7
 limited liability in, 176
 modification protocol, 287–9
 pooling mechanisms and, 227–8
 public funding in, 177–8, 180–1
 strict liability in, 174–5
 Supplementary, 192
- Passengers and their Luggage by Sea (PAL), 260–1
- Pemex Mexico, 59
- personal injuries
 fatal, 32
 in Netherlands, 32
 in Norway, 30
 under OPOL, 106
 PSA on, 30
- Petrobras Brazil explosion, 58
- Petroleum Act 1998, 99, 100, 109–10
- Petroleum Activities Act, 115–16
 adoption of, 116–17
 attribution of liability under, 121–2
 claim settlement, 123–4
 compensation under, 123
 damages under, 122–3
 regulation under, 120, 124
- Petroleum Licensing Regulations
 2004, 99
- Petroleum Licensing Regulations
 2008, 99
- Petroleum Regulations 2008 109
- Petroleum Safety Authority (PSA),
 15–16, 26, 42, 118
 on Gullfaks C, 41
 on personal injuries, 30
 Section 8-3, 119
- Petroleum Taxation Act, 116
- Phillips Petroleum Company, 201–2
- P&I Clubs. *See* Protection and Indemnity Clubs
- Piper Alpha, 91–2, 98, 272–3
 political instability from, 305–6
- PLA. *See* Public Liability Action
- Plaintiffs' Steering Committee,
 54, 366
- polluter pays principle, 293
- pollution
 insurance and, 253
 from offshore activities, 81–2
 OSPAR Convention on, 87–8
- Pollution Control Act, 117
- Pool Re, 348
- pooling mechanisms, 234, 383. *See also*
 risk-sharing
 advantages of, 200–1, 229–32
 contributions to, 231
 insurance compared with, 198–201
 literature on, 229–30
 mutual monitoring, 200–1, 229–30
 mutual trust in, 231
 of NRC, 228–9
 nuclear, in EU, 221–3
 in nuclear sector, 217
 development of, 225
 in EU, 221–3, 227–9
 financial security in, 223–7
 Germany, 223–7
 Price Anderson Act, 217
 public liability in, 217
 retrospective premiums, 219
 in OPOL, 209, 232
 Paris Convention and, 227–8
 premiums, 229–30
 for property damage, 230
 in US, 220–1
 under Protection and Indemnity Clubs, 198–9
 restrictions of, 201
 Vienna Convention and, 227–8
- Preliminary Report on Financial Protection Against Atomic Hazards, 171–2
- premiums, 249–50
 calculation of, 257–8
 Deepwater Horizon and, 259–60
 operators on, 258
 P&I, 215–17, 258
 retrospective, 219, 295
- Prestige, 370
- Price Anderson Act (PAA), 68–9,
 171–2, 182, 190, 194–5, 235,
 285–6, 300, 314–15, 342–3
 advantages of, 191–2
 channelling in, 186–7

- contributions under, 231–2
- coverage, 287
- liability in, 183
- passage of, 183
- pooling mechanisms in, 217
- premium system, 198
- public law liability in, 183
- retrospective premiums, 219, 295
- primary restoration, 140–1
- Princess Anne Marie*, 46
- private interest criteria, 322
- private regulation, 324–6
- property damage
 - nuclear sector compensation and, 189–90
 - pooling mechanisms for, 230
 - in United States, 220–1
- Protection and Indemnity Clubs (P&I Clubs), 76, 235, 249, 297, 350, 369–70
 - available amount in, 217
 - benefits, 215
 - Catastrophe Reserve Fund, 216
 - contributions to, 216
 - coverage under, 214–15
 - entry, 215–17
 - fund mechanisms of, 362
 - Group Excess Reinsurance Policies, 216
 - Letters of Undertaking, 215
 - mutual monitoring in, 232–3
 - origins, 214
 - pooling under, 198–9
 - premiums, 215–17, 258
 - rapid claims management, 362
 - reimbursement in, 214
 - risk coverage, 258
 - risk-sharing, 216
 - rulebook, 214–15
 - services of, 215
 - supplementary calls, 216
- Protocol on the Establishment of a Supplementary Fund for Oil Pollution Damage, 73
- PSA. *See* Petroleum Safety Authority
- PTTEP Australasia, 45, 47, 48
- public interest criteria, 322
- Public Liability Action (PLA), 184
- public regulation, 324–6
- rapid claims management, 387, 359. *See also* claims settlement
 - combinations, 372–4
 - compensation funds, 371–2
 - evaluation of, 374–5
 - existing schemes, 359–60
 - liability law and, 372
 - mechanisms, 369–70
 - in Norway, 360–2
 - under OPA, 363–4
 - OPOL, 360
- Rares, Steven, 18
- RCV. *See* replacement cost value
- Red Cross, 371
- regulation
 - in Denmark, 129
 - information asymmetry and, 320
 - liability compared with, 319, 326–8
 - in Norway, 120
 - offshore liability regimes and, 170
 - under Offshore Petroleum and Greenhouse Gas Storage Act, 160
 - of offshore risk, 322–4
 - under Oil and Gas Standard Form Joint Operating Agreement, 137
 - under Petroleum Activities Act, 120, 124
 - private, 324–6
 - public, 324–6
 - relationship with, 408
 - safety, 269, 319–21, 330
 - self-regulation, 324–6
 - in US, 137
- Regulation 1112/2014, 33
- reinsurance, 265, 266
 - brokers, 249
 - capital markets and, 243
 - Deepwater Horizon and, 258–60
 - on insolvency risk, 274
 - practice, 248–50
 - stakeholders, 248–50
 - structure of coverage, 250–2
 - theory, 246–8

- reinsurer of last resort, 346, 348–9
 - arguments against, 347–8
 - arguments for, 346–7
- remedial measures, 105–6, 205
- replacement cost value (RCV), 211–12
- restricted work cases (RWC), 32
- retrospective premiums, 219, 295
- risk aversion, 246
- risk differentiation, 262, 299, 307
 - Munich Reinsurance on, 298–300
- risk-sharing, 199, 341. *See also* pooling mechanisms
 - expansion of, 289–90
 - OCIL, 261–2
 - OIL, 261–2
 - in OPOL, 208–9
 - P&I Clubs, 216
 - for vessel-based pollution, 233–4
- Romania, 19, 90
- Rote, 48
- Royal Dutch Shell, 57
- RWC. *See* restricted work cases
- safety regulation
 - criteria, 319–20
 - insolvency risk and, 320–1
 - offshore accidents, 269
 - policy conclusions, 330
- Santa Barbara well blowout, 211
- SDR, 2
- Section 1337, 132
- Securities and Exchange Commission (SEC), 54–5
- self-guarantee through taxes, 339–40
- self-insurance, 149–50, 237, 265
 - analysis, 240–2
 - BP, 239
 - captives
 - costs of, 237–8
 - creation of, 237–8
 - combinations, 264
 - credit ratings and, 238–9
 - damages and, 241–2
 - disadvantages of, 241
 - first layer coverage, 239–40
 - insurance compared with, 260–1
 - of majors, 238–9
 - moral hazards, 240–1
 - in OPOL, 204–5, 208, 242–3
 - practice, 238–40
 - reserves, 237–8
 - stakeholders on, 238–9
 - theory, 237–8
- self-insured retentions (SIR), 125, 239–40
- self-regulation
 - arguments for, 324–5
 - enforcement of, 325–6
- Shavell, Steven, 319–20
- Shell, 43–4, 56, 328
- Shell UK Limited, 201–2
- Shetland Islands, 60
- Siebens Oil and Gas, 201–2
- Signal Oil and Gas Company Limited, 201–2
- SINTEF, 114
- SIR. *See* self-insured retentions
- SLA. *See* Submerged Lands Act
- Small Tanker Oil Pollution Indemnification Agreement (STOPIA), 79–81, 233–4
- SOS model. *See* Sudden Oil Spill model
- Soviet Union, 178–9
- stakeholders, 15–17
 - on capital markets, 243–4
 - on cat bonds, 243
 - on environmental funds, 354–6, 357–8
 - on EU, 268
 - on guarantees, 245
 - on Gulf of Mexico, 269–71
 - on insolvency risk, 274–5
 - insurance, 248–50
 - interviews with, 406–7
 - on liability, 328–30
 - on mandatory financial security, 332–3
 - on Munich Reinsurance, 283–4
 - on Noble Energy, 297–8
 - on offshore-related risk funds, 356–9
 - reinsurance, 248–50
 - on self-insurance, 238–9
 - on well blowouts, 268
- Standard Form of International Offshore Daywork Drilling Contract, IADC, 14
- Standard & Poor's, 110, 242–3
- state regulatory authorities, 15–16

- State Supervision of Mines, 15–16,
 31, 36–7
- Statoil, 115–16, 125
- stock exchange, 242–3
- STOPIA. *See* Small Tanker Oil
 Pollution Indemnification
 Agreement
- strict liability rule, 310
 in joint care case, 310–11
 negligence rule compared with, 311
 in offshore accidents, 312–13
- Submerged Lands Act (SLA), 131
 on jurisdictional issues, 153–4
- subsidization, 378
- Subsoil Act, 126–7, 132
 attribution of liability in, 129
 compensation mechanisms, 130–1
 damages under, 129–30
- Sudden Oil Spill (SOS) model, 280–2
- Superfund, 357
- Supplementary Fund of 2003, 79–80
- Supplementary Fund Protocol, 286
- Svenska Geologiska Undersökning,
 15–16
- Sweden, 354
- Swiss Re-insurance Company, 243,
 248–9, 283
- Syverud, Kent, 364–6
- Tanio, 71
- tank barge, 413, 414
- tank ship, 413
- Tanker Oil Pollution Indemnification
 Agreement (TOPIA), 79–81,
 233–4
- Tanker Owners Voluntary Agreement
 concerning Liability for Oil
 Pollution (TOVALOP), 79–81,
 233–4
- TEPCO, 314
- terrorism insurance, 348
- Terrorism Risk Insurance Act
 (TRIA), 348
- Teton Dam, 64–5
- Texaco North Sea UK Company, 201–2
- third party insurance, 247
- Three Mile Island, 184–5, 189–90
- Timor Sea, 45, 48
- TOPIA. *See* Tanker Oil Pollution
 Indemnification Agreement
- Torrey Canyon, 1, 79–81
- tort law, 319
- Total Oil Marine Limited, 201–2
- TOVALOP. *See* Tanker Owners
 Voluntary Agreement concern-
 ing Liability for Oil Pollution
- Trans-Alaska Pipeline Liability
 Fund, 152
- transboundary effects, 96
- transboundary harm, 376–8
 CLC on, 377
 damage above 750 million dollars,
 381–2
 damage between 250 million and 750
 million dollars, 380
 Fund Convention on, 377
 max damage of 250 million
 dollars, 379
 OPOL and, 380
- Transocean, 49–50, 51–2, 53, 55
- Transport Council, 72
- Treasury, US, 294–5
- TRIA. *See* Terrorism Risk
 Insurance Act
- Ula field, 42–3
- UN Conference on Human
 Environment, 86–7
- UNCLOS. *See* United Nations
 Convention on the Law of the
 Sea
- UNEP. *See* United Nations
 Environment Programme
- Unified Interpretation of MARPOL, 83
- United Kingdom (UK)
 legislation comparisons, 167
 liability, 100–3
 national interest in, 98
 national regulatory authorities in,
 26–30
 offshore liability regimes, 100–3
 OPOL in, 232, 263
 statutory laws, 98–100
 worker injuries in, 26–7

- United Nations Convention on the Law of the Sea (UNCLOS), 12, 48–9, 69, 70, 376–7
 Annex III of, 81–2
 Art. 11, 82
 Art. 23, 83
 Art. 168, 83
 Art. 56, 12
 Art. 60, 12
 Art. 77, 12
 Art. 81, 12
 Art. 198, 49–53
 Art. 235, 81–2
 international legal framework, 79–81
 on joint arrangements, 82
 United Nations Environment Programme (UNEP), 86–7
 United States (US)
 basis of liability, 136
 compensation funds, 150–3
 criminal liability, 153–4
 declaration of losses in, 255–6
 on jurisdictional issues, 153–4
 legal framework, 131–6
 legislation comparisons, 167
 national interest in, 131
 nuclear compensation, 182
 compensation and, 189–90
 public law liability, 183–4
 offshore accidents, 275–6
 offshore liability regimes, 136, 153–4
 property damage in, 220–1
 regulation in, 137
 Treasury, 294–5
 upstream losses, 39, 40
 Valencia Basin, 21
 Valhall PCP production platform
 fire, 41–2
 investigation of, 42
 vessel-based pollution
 Civil Liability Convention and, 233–4
 cover for, 286–7
 Fund Convention and, 233–4
 in offshore accidents, 270–1
 risk-sharing agreements for, 233–4
 Vienna Convention, 173–4, 179
 channelling of liability, 175–6
 exclusive jurisdiction, 177
 financial security, 176–7
 limited liability in, 176
 pooling mechanisms and, 227–8
 public funding in, 177–8
 revisions of, 194–5
 Soviet Union in, 178–9
 strict liability in, 174–5
 voluntary mechanisms, 79–81
 W. B. Berkley Corporation, 248–9
 WANO. *See* World Association of Nuclear Operators
 Waste Framework Directive, 93–4
 WELD. *See* Willis Energy Loss Database
 well blowouts
 in Australia, 155
 catastrophic, 272–3
 Santa Barbara, 211
 stakeholders on, 268
 well control equipment, 33
 Well Control Incident Database, 33–4
 Wells Committee, 33–4
 West Africa, 284–5
 West Shetlands, 63, 255–6, 270
 Willis, 34–5, 239, 273
 Willis Energy Loss Database (WELD), 34–5
 WOAD. *See* Worldwide Offshore Accident Databank
 worker injuries
 causes of, 27
 in UK, 26–7
 workers compensation insurance, 251
 Working Environment Act, 116
 Working Environment Authority, 128
 Workplace Safety Rule, 56–7
 World Association of Nuclear Operators (WANO), 223
 Worldwide Offshore Accident Databank (WOAD), 22–4, 36–7
 accidents, 23, 24
 consequences according to, 24
 damage costs according to, 24
 incidents, 22–3
 insignificant events, 22
 near-misses, 22