

Subject Index

A

- Absorbed dose, 456
- levels, 433
- Accelerator transmutation of waste, 782
- ACRR reactor, 423
- Activation, 559, 792
 - calculation, 690
 - detector, 55, 618, 804
 - foils, 578, 720
 - measurements, 155, 323, 720, 751
 - method, 711
 - neutron resonance, 187
- Advanced Neutron Source, 568
- Alanine, 423
- ALICE, 804
- Aluminum, 568
 - alloys, 233
 - aluminum/sodium reaction, 720
 - detector, 800
- Amino acid, 423
- Annealing, 9, 19, 38, 447, 515, 546
- Arrhenius Equivalent Temperature, 195
- Associated Benchmark Data Base, 333
- ASTM Standards
 - E 706: 9, 19
- Axial distribution, 132

B

- Backscattering effect, 392
- Barium silicate, 456
- Beam tubes, 140
- Beltline plate materials, 628
- Benchmark, concrete, 392
- Benchmark data base, 333
- Benchmark experiment, 358
- Benchmark method, 401, 559
- Benchmark neutron spectra, 641

- Benchmark, Pool Critical Assembly, 376
- Benchmarks, neutron leakage, 368
- Beryllium, 187
 - irradiations, 546
- Boiling water reactor, simplified, 464
- Bonner spheres, 290, 300
- Boron, 792
 - concentrations, 167
- BR2 reactor, 546, 608
- Bubble detectors, 225
- BUGLE-80, 650
- BUGLE-95, 660
- B&W Nuclear Technologies, 744
 - B&WOG Cavity Dosimetry Program, 358, 447

C

- Calcium sulfate, 456
- Calibration, reference, 401
- CANDU reactors, 441
- Cavity dosimetry, 55, 358
- Cavity, reactor, 447
- CEA Nuclear Protection and Safety Institute, 411
- Chromatography, 203
- Cobalt, 177, 500, 727, 792
- Collision, 187
- Concrete benchmark experiment, 392
- Copper, 500
- Core loading, 147
- Counter, position sensitive, 263
- Covariance matrix, 310
- Critical assembly, 456
- Criticality accidents, 411
- Criticality calculations, 368
- Cross section adjustment, 348
- Cross section, cobalt, 727
- Cross section, differential scattering, 737
- Cross section evaluation, 694
- Cross section, gadolinium, 744
- Cross section, gold, 727

- Cross section library
 BUGLE-80, 650
 BUGLE-93, 660
 DOSCROS84, 680
 ENDF/B-VI, 348, 660, 680,
 704, 804
 ENDF-VI, 694
 GLUCS, 680
 IRDF-85, 641, 670
 IRDF-90, 680, 694
 JENDL, 187, 670, 720
 JENDL-3, 670, 680
 SAILOR, 650
 VITAMIN-B6, 660
 VITAMIN-C, 392
- Cross section standard, 704
- Cross section, thermal neutron, 711
- D**
- Damage, 140, 533
 Damage correlation, 490
 Damage intercomparison, 509
 Damage modeling, 9, 19
 Damage monitors, 9, 19
 Damage predictions, 628
 Damage rates, 523
 Decommissioning, 690
 DEMO fusion reactor, 773
 Detectors
 activation, 55, 618
 NE213 scintillation, 280
 proton recoil, 300
 rhodium, 245
 self-powered neutron, 255
 silver, 255
- Differential elastic scattering measurements, 737
- Differential operator method, 348
- Diffusivity, radiation enhanced, 533
- Diodes, monitoring, 509
- Discrete ordinates, 376
- Displacement damage, 578
- Displacement production, 782
- DOSCROS84, 680
- Dose mapping, 441
- Dosimetry methodology, 9, 19
- Dosimetry System 86, 751
- Drop detectors, superheated, 225
- DS86, 751
- Ductile fracture, 533
- Dummy assemblies, 147
- Dynamic compensation, 255
- E**
- ELECTRABEL, 323
 Electrical conductivity, 500
 Electron linear accelerators, 618
 Electron paramagnetic resonance, 423
 Electron spin resonance, 423
 FLXSIR library, 333
- Embrittlement, 3, 9, 19, 533
 boron effects on, 167
 data base, 515
 ductile fracture process, 533
 Nuclear Regulatory Commission research, 3
 transport data, 140
 VVER reactors, 464
 weld, 38
- ENDF/B-VI, 348, 660, 680, 704, 804
- ENDF-VI, 694
- Energy dependent cross section, 670
- Energy Selective Neutron Irradiation Test Facility, 727
- Euratom Working Group on Reactor Dosimetry, 233
- F**
- Fast Flux Test Facility/Materials Open Test Assembly, 500, 523, 773
- Filters, 310
- Fission fluxes, equivalent, 323
- Fission counters, 588
- Fluence monitoring, 29, 38, 55
 benchmark experiment, 358
 Bonner spheres, 290
 calculation, 114, 744
 damage, 472
 diodes, 509
 energy dependence, 704
 estimates, 45, 628
 factors affecting, 490
 helium accumulation, 761

LEPRICON, 65, 75
 light water reactor, 104
 magnetic response, 215
 mapping, 804
 PCDC calculations, 155
 rate measurements, 233, 401,
 515
 scraping samples for, 147
 short decay times, 177
 test reactor, 598
 three dimensional test, 343,
 358, 376
 uncertainties, 85, 94
Flux, 203, 343, 559, 690
 beginning-of-cycle, 140
 monitors, 233
 neutron distribution, 588
 neutron, estimations, 205
 neutron, spectrum, 447
 neutron, thermal component,
 650
 neutron transient, 245
 research reactor, 568, 588
 three-dimensional synthesized,
 358
Foil, monitor, 177
Foil technique, 187
Ford Nuclear Reactor, 628
Framatome reactor, 65
Fuel monitoring, spent, 225
Fuel rod power, 608

G

Gadolinium, 744
Gamma calculations, two
 dimensional, 608
Gamma detector, 447
Gamma induced damage, 578
Gamma neutron environments,
 423
Gamma radiation, 433
Gamma rays, 441, 456, 751
Gamma transport analyses, 114,
 650
Gas cooled reactor, 761
GLUCS, 680
GNASH, 727
Gold, 711, 727

H

Hardening, 533
Heavy water reactor, 568
Helium
 formation, 546, 782
 measurements, 167, 310, 761
HETC computer program, 559,
 800
High flux test reactor, 140
High resolution neutron
 transmission, 737
Hiroshima, 751
Hydrogen determination, 271

I

Inconel 718, 782
Indium metal target, 187
Integrating Thermal Monitor,
 195
Integrity, vessel, 3
International Atomic Energy
 Agency, 690
 Coordinated Research
 Programme, 464
International Reactor Dosimetry
 File, 641
Ion chambers, 588
IRDF-85, 641, 670
IRDF-90, 680, 694
Iron, 310, 744
Iron displacements, 384
Iron fluence detectors, 147
Iron inelastic scattering, 392
Iron wires, 215
Isomer ratio, 177
Isotope reactor, high flux, 140

J

Japanese Evaluated Nuclear Data
 Library Dosimetry File,
 187, 670, 720
 JENDL, 187, 670, 720
 JENDL-3, 670, 680
Japanese Nuclear Data
 Committee, 670
JENDL, 187, 670, 720
JENDL-3, 670, 680

K

- Kerr soft-tissue kerma factors, 300
 Kinki University Reactor, 711
 Koeberg reactor, South Africa, 155
 KORPUS facility, 480
 KUCA, 456
 Kyoto University Critical Assembly, 456
 Kyoto University Reactor, 711

L

- LAHET, 773, 782
 LAMPF, 773, 804
 LANSCE, 704
 Least squares formalism, 75, 348
 LEPRICON, 75
 adjustment, 333
 methodology, 65
 Light water reactor, 104, 123
 data base, 533
 standards, 9, 19
 surveillance, 392
 Light water spectrum, 472
 Linear differential system, 245
 Liquid Scintillation Counter, 45
 Lithium fluoride high fluence rate gamma detector, 447
 Lithium targets, 761
 Loading
 core, 147
 MOX, 132
 Long counter, 263
 Los Alamos Neutron Scattering Center, 704
 Los Alamos Spallation Radiation Effects Facility, 773
 Loviisa reactors (See also VVER-440), 45

M

- Magnesium silicate, 456
 Magnetic properties, 215
 Magnox reactors, 384
 MAPLE-X10 reactor, 588
 Mapping, gamma ray dose, 441
 Mass spectrometry, 167, 203

- Materials development, 773
 Materials Dosimetry Reference Facility, 401
 Matrix damage, cascade induced, 533
 Maxwellian distribution field, 711
 MCBEND, 123, 323, 384
 MCNP transport code, 368, 376, 523, 588, 773, 782
 Mechanical property changes, 490
 Metallurgy, 9, 19
 Metal target, 187
 MHTGR, 761
 Modeling
 cobalt, 177
 damage, 9, 19
 geometrical, 608
 measurement apparatus, 368
 microstructural, 533
 nonlinear regression, 694
 reactor sides, 384
 sensitivity, 114
 theoretical model method, 727
 transport analysis, 744
 Monitor foil, 177
 Monitoring, fluence, 29, 38, 55
 benchmark experiment, 358
 Bonner spheres, 290
 calculation, 114, 744
 damage, 472
 diodes, 509
 energy dependence, 704
 estimates, 45, 628
 factors affecting, 490
 helium accumulation, 761
 LEPRICON, 65, 75
 light water reactor, 104
 magnetic response, 215
 mapping, 804
 PCDC calculations, 155
 rate measurements, 233, 401, 515
 scraping samples for, 147
 short decay times, 177
 test reactor, 598
 three dimensional test, 343, 358, 376
 uncertainties, 85, 94

Monte Carlo, 323, 348, 368, 376, 773
 indium natural target, 187
 LAHET, 773, 782
 MCBEND, 123, 323, 384
 MCNP, 368, 376, 523, 588, 773, 782
 Saint Laurent B1 MOX, 132
 simulations, 263, 618
 MOS dosimeter, 441
 MTR, 598, 608
 Multiple scattering, 187

N

Nagasaki, 751
 National Institute of Standards and Technology, 447, 509
 Neptunium, 704, 711
 NE213, 300
 scintillation detectors, 280
 Neutron detection, 225
 rhodium detectors, 245
 silver detectors, 255
 Neutron energy, 263
 Neutron field spectrometry, 290
 Neutron fluence monitoring, 29, 38, 55, 650, 800
 benchmark experiment, 358
 Bonner spheres, 290
 calculation, 114, 744
 damage, 472
 energy dependence, 704
 estimates, 45, 628
 factors affecting, 490
 helium accumulation, 761
 LEPRICON, 65, 75
 light water reactor, 104
 PCDC calculations, 155
 rate measurements, 233
 reactor filters, 310
 reference facility, 401
 research reactor, 598
 response functions, 280
 short decay times, 177
 spectra, 447
 three-dimensional test, 343
 uncertainty in, 85, 94
 Neutron flux, 140, 203, 690
 estimations, 205
 research reactor, 568, 588

spectrum, 447
 transient, 245
 Neutron gamma cross sections, 650
 Neutron gamma environments, 423
 Neutron leakage benchmarks, 368
 Neutron photon transport, 523
 Neutron resonance activation, 187
 Neutron spectrum effect, 472, 641
 Neutron spectrum technique, notched, 271
 Neutron transport, 628, 650
 calculation, 65, 114, 147, 690
 validity, 384
 code, 358, 376
 ex-core, 333
 Neutron Unfolding Package Code (NEUPAC), 720

Nickel, 500
 Nickel-cobalt reaction, 177
 Nickel wires, 215
 Niobium, 45, 694, 203
 fluence detectors, 147
 Nitrogen, 737
 Nonlinear regression model, 694
 Nuclear Data Guide for Reactor Neutron Metrology, 641
 Nuclear Regulatory Commission, 3

O

Oak Ridge Electron Linear Accelerator, 737
 Obrigheim power plant, Germany, 147
 ONEDANT, 588
 Optical absorbance gamma dosimeters, 447
 OSIRIS reactor, 255, 472

P

Pade-approximation, 694
 Paul Scherrer Institute, 800
 PCDC dosimetry cross sections, 155

Peele's puzzle, 75
 Permeability, 215
 Photoneutrons, 618
 Photon flux distributions, 588
 PIREX, 800
 PKA spectrum, 782
 Plate materials, 628
 Pool Critical Assembly Benchmark, 376
 Power distribution, 45
 Power-Reactor Embrittlement Database, 94, 515
 Precipitation, 533
 Pressurized water reactor, 65
 Proton accelerator, 782
 Proton fluence, 800
 Proton Irradiation Experiment, 800
 Proton recoil, 300
 Pulsed sphere experiments, 348
 Pulse Radiation Facility, 300

R

Radiation Metrology Laboratory, 433, 680
 Radiotherapy rooms, 618
 Ramp, 245
 Ramp program, 255
 RBT-6 reactor, 480
 Reaction rate, 187
 Reactor Information System data base, 690
 Reactor shielding, 660
 Reference materials, 233
 Materials Dosimetry Reference Facility, 401
 Reference neutron spectrum, 411
 Regulations
 draft, neutron fluence, 104
 research impact on, 3
 Remanence, 215
 Resonance, 704
 integral, 711
 parameters, 737
 Reusability, thermoluminescence dosimeters, 433
 Rhodium, 233
 self powered neutron detectors, 245
 R-matrix analysis, 737

S

SAILOR cross section library, 650
 SANDII, 680
 Saturation activation rates, 123
 Saturation activities, 187
 Scattering detectors, 737
 Shielding, 660
 SILENE, 411
 Silicon bipolar transistors, 578
 SILOE reactor, 245, 472
 SINCROS-II, 727
 SINQ, 559
 SNLRLML, 680
 Solid State Track Recorders, 195
 Spallation neutrons, 782, 800
 Spallation neutron source, 559, 804
 Spectral calculation, 578, 628, 641
 Spectrometry, 225, 280
 Bonner spheres, 290, 300
 energy dispersive X-ray, 500
 mass, 167, 203
 Spectroscopy, 423
 Spectrum adjustment, 680, 720
 Spectrum determination, 680
 Spectrum field, 711
 Spectrum, fission, 670
 Spectrum, neutron, effect, 472, 641
 Spectrum, neutron, notched technique, notched, 271
 SPR-III reactor, 423
 Standards, 9, 19, 660
 European, 464
 National Institute of Standards and Technology, 447, 509
 neutron field, 670
 reference materials, 233
 STARFIRE reactor, 500
 Steel, 203
 boron determination in, 167
 cylinder, 401
 hydrogen determination in, 271
 pressure circuits, 384
 Strontium silicate, 456
 Sulfur, 177
 Superheated drop detectors, 225

- Surveillance, 45, 104, 132, 464, 515
 aging, 38
 capsule dosimetry, 94
 capsules, 358
 coupon materials, 523
 damage, 140
 ex-vessel, 392
Fast Flux Test Facility
 program, 523
 hydrogen, 271
 Koeberg, 155
 MCBEND, 123, 323, 384
 packets, Charpy, 215
 program optimization, 464
 standards, 9, 19
 VENUS, 323, 333
Yankee Atomic Electric
 Company program, 114
- T**
- Temperature effects, 509
 Temperature monitoring, 195
Test Reactor Embrittlement Data
 Base, 515
 Thermal aging, 195
 Thermal fluence rate, 598
 Thermoluminescence, 423, 433, 792
 detector, 456, 578
THREEDANT, 376
 3DDT, 588
 Three dimensional test, 343, 358, 376
 Threshold activation rates, 323
 Threshold reaction, 720
TIHANGE-2 Surveillance System, 65
 Titanium, 233
 Tokamak, 792
TORE-SUPRA, 792
 Track recorders, 195
 Transmutation, 500, 782, 800
 Transport analysis model, 744
 Transport calculations, 140
 MCNP code, 368
 neutron, 55
 Trend curves, 94, 533
TRIPOLI, 132
 Tritium
 formation, 546, 761
- retention, 761
Tungsten, 773
 Two-dimensional neutron and gamma calculations, 608
- U**
- Ultra-high flux beam, 568
 Uncertainties, 290
 Uncertainty assessment, 85, 94, 490
 matrices, evaluation of, 75
 Uncertainty propagation, 310
 Upper shelf energy, 533
Uranium, 744
 fission spectrum, 670, 720
- V**
- Vanadium, 233
VENUS, 323, 333
VITAMIN-B6, 660
VITAMIN-C, 392
Voids, 533
VVER reactor, 55, 464
VVER-440 reactor, 29, 38, 45
VVER-1000, 343
- W**
- Water loop, pressurized, 255
 Water moderators, spherical, 368
 Welds, 38
WIMS-AECL, 588
WWER vessel materials, 480
- X**
- X-ray fluorescence, total reflection, 800
- Y**
- Yankee Atomic Electric**
 Company, 114, 628
Yankee Rowe reactor, 464
- Z**
- Zinc, 500