

PART I**GENERAL PROVISIONS**

R12	64E-5.101	Definitions	I-1
	64E-5.102	Exemptions	I-23
	64E-5.103	Records.....	I-24
	64E-5.104	Tests	I-24
	64E-5.105	Prohibited Use	I-24
	64E-5.106	Units of Exposure and Dose	I-25

PART II LICENSING OF RADIOACTIVE MATERIALS

R2	64E-5.201	..... Licensing of Radioactive Material	II-1
	64E-5.202	..... Source Material - Exemptions	II-2
R12	64E-5.203	..... Radioactive Material Other than Source Material - Exemptions.....	II-4

SUBPART A LICENSE TYPES AND FEES

R12	64E-5.204 Types of Licenses	II-13
-----	-----------	-------------------------------	-------

SUBPART B GENERAL LICENSES

	64E-5.205	..... General Licenses - Source Material	II-18
R14	64E-5.206	..... General Licenses - Radioactive Material Other Than Source Material.....	II-20

SUBPART C SPECIFIC LICENSES

R10	64E-5.207	..... Filing Application for Specific Licenses	II-36
	64E-5.208	..... General Requirements for the Issuance of Specific Licenses	II-36
	64E-5.209	..... Special Requirements for Specific Licenses of Broad Scope.....	II-37
R12	64E-5.210	..... Special Requirements for a Specific License to Manufacture, Assemble, Repair or Distribute Commodities, Products or Devices which Contain Radioactive Material	II-41
	64E-5.211	..... Special Requirements for Issuance of Specific Licenses for Source Material Milling.	II-61
	64E-5.212	..... Issuance of Specific Licenses	II-65
R12	64E-5.213	..... Specific Terms and Conditions of Licenses	II-65
R5	64E-5.214	..... Expiration and Termination of Licenses and Decommissioning of Building Outdoor Areas	II-68
	64E-5.215	..... Transfer of Material	II-73

SUBPART D RECIPROCITY

R10	64E-5.216 Reciprocal Recognition of Licenses for By-product, Source, Naturally Occurring and Accelerator Produced Radioactive Material, and Special Nuclear Material In Quantities Not Sufficient to Form a Critical Mass	II-75
-----	-----------	--	-------

SUBPART E BONDING

R14	64E-5.217 Bonding of Persons Licensed Pursuant to Subpart C	II-77
-----	-----------	---	-------

SUBPART F INSPECTION AND ENFORCEMENT

	64E-5.218	..... Performance of Inspections.....	II-81
	64E-5.219	..... Emergency Planning	II-82
R13	64E-5.220	..... Radioactive Quantities	II-86

SUBPART G RADIOLOGICAL CRITERIA FOR LICENSE TERMINATION

R5	64E-5.221	.....Radiological Criteria for License Termination.....	II-90
R5	64E-5.222	.....Radiological Criteria for Unrestricted Use	II-90
R5	64E-5.223	.....Radiological Criteria for License Termination Under Restricted Conditions.....	II-90
R5	64E-5.224	.....Alternate Criteria for License Termination	II-92
R5	64E-5.225	.....Public Notification and Public Participation	II-93
R5	64E-5.226	.....Minimizing Contamination	II-93
		Schedule A....Exempt Concentrations	II-94
		Schedule B....Exempt Quantities	II-99
		Schedule D....Limits for Broad License	II-105
R14		Bond Risk Factors Calculation Worksheet - March 2014.....	II-111

PART III STANDARDS FOR PROTECTION**SUBPART A GENERAL PROVISIONS**

R2	64E-5.301 . Standards for Protection Against Radiation	III-1
	64E-5.302 . Implementation	III-1

SUBPART B RADIATION PROTECTION PROGRAMS

R2	64E-5.303 . Radiation Protection Programs	III-2
----	---	-------

SUBPART C OCCUPATIONAL DOSE LIMITS

R6	64E-5.304 . Occupational Dose Limits for Adults	III-2
	64E-5.305 . Compliance with Requirements for Summation of External and Internal Doses	III-3
	64E-5.306 . Determination of External Dose from Airborne Radioactive Material	III-4
R12	64E-5.307 . Determination of Internal Exposure	III-5
R12	64E-5.308 . Determination of Prior Occupational Dose	III-6
R2	64E-5.309 . Planned Special Exposures	III-8
	64E-5.310 . Occupation Dose Limits for Minors	III-9
R2	64E-5.311 . Dose to an Embryo Fetus	III-9

SUBPART D..RADIATION DOSE LIMITS FOR INDIVIDUAL MEMBERS OF THE PUBLIC

R10	64E-5.312 . Dose Limits for Individual Members of the Public	III-10
R12	64E-5.313 . Compliance with Dose Limits for Individual Members of the Public	III-11

SUBPART E SURVEYS AND MONITORING

R2	64E-5.314 . General	III-12
R12	64E-5.315 . Conditions Requiring Individual Monitoring of External and Internal Occupational Dose	III-13

SUBPART F CONTROL OF EXPOSURE FROM EXTERNAL SOURCES IN RESTRICTED AREAS

	64E-5.316 . Control of Access to High Radiation Areas	III-14
	64E-5.317 . Control of Access to Very High Radiation Areas	III-15

SUBPART G RESPIRATORY PROTECTION AND CONTROLS TO RESTRICT INTERNAL EXPOSURE IN RESTRICTED AREAS

R6	64E-5.318 . Use of Process or Other Engineering Controls	III-15
R6	64E-5.319 . Use of Individual Respiratory Protection Equipment	III-16

SUBPART H STORAGE AND CONTROL OF LICENSED OR REGISTERED SOURCES OF RADIATION

	64E-5.320 . Security of Stored Sources of Radiation	III-18
	64E-5.321 . Control of Sources of Radiation Not in Storage	III-18

SUBPART I PRECAUTIONARY PROCEDURES

	64E-5.322 . Caution Signs.....	III-19
R2	64E-5.323 . Posting Requirements	III-20
	64E-5.324 . Exceptions to Posting Requirements	III-20
	64E-5.325 . Labeling Containers and Radiation Machines.....	III-21
R12	64E-5.326 . Exemptions to Labeling Requirements.....	III-21
	64E-5.327 . Procedures for Receiving and Opening Packages.....	III-22

SUBPART J WASTE MANAGEMENT

	64E-5.328 . General Requirements	III-23
	64E-5.329 . Method of Obtaining Approval of Proposed Disposal Procedures	III-24
R12	64E-5.330 . Discharge by Release into Sanitary Sewerage	III-24
R12	64E-5.331 . Disposal of Specific Wastes.....	III-25
R1	64E-5.332 . Transfer for Disposal and Manifests	III-26a
R1	64E-5.333 . Classification and Characteristics of Low Level Radioactive Waste for Near-Surface Land Disposal, Labeling and Manifest Requirements	III-27

SUBPART K RECORDS

R2	64E-5.334 . General Provisions.....	III-36
	64E-5.335 . Records of Radiation Protection Programs.....	III-36
	64E-5.336 . Records of Surveys.....	III-36a
	64E-5.337 . Records of Tests for Leakage or Contamination of Sealed Sources	III-36a
	64E-5.338 . Records of Planned Special Exposures	III-37
R2	64E-5.339 . Records of Individual Monitoring Results	III-37
	64E-5.340 . Records of Waste Disposal or Transfers	III-38
	64E-5.341 . Records of Testing Entry Control Devices for Very High Radiation Areas ...	III-38
	64E-5.342 . Form of Records	III-39

SUBPART L REPORTS

	64E-5.343 . Reports of Stolen, Lost, or Missing Licensed or Registered Sources of Radiation	III-39
R12	64E-5.344 . Notification of Incidents	III-40
R10	64E-5.345 . Reports of Exposure, Radiation Levels, Concentrations of Radioactive Materials Exceeding the Constraint or Limits, and Medical Events and Dose to an embryo/Fetus or a Nursing Child	III-44a
R10	64E-5.346 . Reports of Planned Special Exposures.....	III-46
R1	64E-5.347 . Notifications and Reports to Individuals	III-46
	64E-5.348 . Reports of Leaking or Contaminated Sealed Sources	III-46
	64E-5.349 . Vacating Premises	III-46
R12	64E-5.350... Reports of Transactions Involving Nationally Tracked Sources	III-47
R12	64E-5.351... Nationally Tracked Source Thresholds.	III-50

PART IV

RADIATION SAFETY REQUIREMENTS FOR INDUSTRIAL RADIOGRAPHIC OPERATIONS

Sections 64E-5.401- 64E-5.422 Repealed and replaced with sections 64E-5.423 – 64E-5.441

R4	64E-5.423	Definitions	IV-1
R4	SUBPART D EQUIPMENT CONTROL (Formerly Subpart A)		
R4	64E-5.424	Requirements for Industrial Radiography Equipment Using Sealed Sources	IV-3
R4	64E-5.425	Locking of Sources of Radiation, Storage Precautions, and Surveillance	IV-5
R4	64E-5.426	Radiation Survey Instruments	IV-6
R6	64E-5.427	Leak Testing, Repairing, Tagging, Opening, Modifying and Replacing Sealed Sources and Devices	IV-6
R4	64E-5.428	Quarterly Inventory.....	IV-7
R6	64E-5.429	Source Movement Logs, Daily Survey Reports, and Individual Dosimeter Logs.....	IV-8
R8	64E-5.430	Inspection and Maintenance	IV-9
R4	64E-5.431	Permanent Radiographic Installations	IV-10
R4	SUBPART E RADIATION SAFETY REQUIREMENTS (Formerly Subpart B)		
R4	64E-5.432	Radiation Protection Program	IV-11
R4	64E-5.433	Radiation Safety Officer	IV-13
R6	64E-5.434	Training, Testing, Certification, and Audits	IV-14
R4	64E-5.435	Conducting Industrial Radiographic Operations.....	IV-17
R4	64E-5.436	Operating and Emergency Procedures	IV-17
R4	64E-5.437	Personnel Monitoring	IV-18
R4	SUBPART F PRECAUTIONARY PROCEDURES IN RADIOGRAPHIC OPERATIONS (Formerly Subpart C)		
R4	64E-5.438	Radiation Surveys	IV-20
R4	64E-5.439	Posting	IV-21
R8	64E-5.440	Records.....	IV-21
R8	64E-5.441	Reporting Requirements	IV-23

PART V X-RAYS IN THE HEALING ARTS

	64E-5.501 ... Definitions	V-1
R7	64E-5.502 ... General Requirements	V-10
	64E-5.503 ... General Requirements for all Diagnostic X-ray Systems	V-17
R11	64E-5.504 ... Fluoroscopic X-ray Systems.....	V-23
R2	64E-5.505 ... Diagnostic Radiography Systems, Other than Fluoroscopic, Mammographic, Dental Intraoral or Veterinary Systems.....	V-30
R7	64E-5.506 ... Intraoral Dental Radiographic Systems.....	V-34
	64E-5.507 ... Therapeutic X-ray Systems of Less Than 1 MeV.....	V-36
R13	64E-5.508 ... X-ray and Electron Therapy Systems with Energies of 1 MeV and Above	V-43
	64E-5.509 ... Veterinary Medicine X-ray Operations	V-55
R13	64E-5.510 ... Mammographic Systems.....	V-56
R13	64E-5.511 ... Registration of Radiation Machines	V-60

PART VI USE OF RADIONUCLIDES IN THE HEALING ARTS

R10	64E-5.601.....	License Required	VI-1
R12	64E-5.6011.....	Definitions	VI-3
R10	64E-5.602.....	License Amendments.....	VI-5
R10	64E-5.603.....	Notification	VI-6

SUBPART A GENERAL ADMINISTRATIVE REQUIREMENTS

R10	64E-5.604	ALARA Program.....	VI-6
R10	64E-5.605	Radiation Safety Officer	VI-7
R10	64E-5.606	Radiation Safety Committee	VI-9
R12	64E-5.607	Authority and Responsibilities	VI-11
R10	64E-5.608	Supervision	VI-13
R12	64E-5.609	Visiting Authorized User, Visiting Authorized Medical Physicist or Visiting RSO.....	VI-15
R10	64E-5.610.....	Mobile Medical Service Requirements	VI-16
R10	64E-5.611.....	Quality Management Program and Notifications, Records and Reports of Medical Events.	VI-17
R10	64E-5.612.....	Suppliers	VI-19

SUBPART B GENERAL TECHNICAL REQUIREMENTS

R10	64E-5.613.....	Quality Control of Diagnostic Instrumentation	VI-20
R10	64E-5.614.....	Possession, Use, Calibration, and Check of Dose Calibrators In the Use of Unsealed Radiopharmaceuticals	VI-20
R10	64E-5.615	Calibration and Check of Survey Instruments	VI-22
R10	64E-5.616	Determination of Dosages of Unsealed Radioactive Materials for Medical Use.....	VI-24
R10	64E-5.617	Authorization for Calibration, Transmission and Reference Sources.....	VI-24
R10	64E-5.618	Requirements for Possession of Sealed Sources and Brachytherapy Sources	VI-25
	64E-5.619.....	Syringe Shields and Labels.....	VI-27
	64E-5.620.....	Vial Shields and Labels.....	VI-27
R10	64E-5.621.....	Surveys for Contamination and Ambient Radiation Dose Rate.....	VI-28
R10	64E-5.622.....	Release of Patients or Human Research Subjects Treated with Radiopharmaceuticals, Implants, or Remote Afterloader Units.....	VI-29
	64E-5.623	Storage of Volatiles and Gases.....	VI-30
R10	64E-5.624	Decay in Storage.....	VI-30
R10	64E-5.625	Safety Instruction and Precautions for Liquid Iodine Radiopharmaceutical Therapy, Manual Brachytherapy, Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery	VI-31
R12	64E-5.6251	Therapy Related Computer Systems	VI-34

SUBPART C UPTAKE, DILUTION, AND EXCRETION

R12	64E-5.626.....	Use of Radiopharmaceuticals for Uptake, Dilution, or Excretion Studies....	VI-35
-----	----------------	--	-------

SUBPART D IMAGING AND LOCALIZATION

R12	64E-5.627.....	Use of Unsealed Radiopharmaceuticals, Generators, and Reagent Kits for Imaging and Localization Studies	VI-26
R10	64E-5.628.....	Generators	VI-39
R12	64E-5.629.....	Control of Aerosols and Gases	VI-41

SUBPART E RADIOPHARMACEUTICALS FOR THERAPY

R12	64E-5.630.....	Use of Radiopharmaceuticals for Therapy.....	VI-42
-----	----------------	--	-------

SUBPART F SEALED SOURCES FOR DIAGNOSIS

R10	64E-5.631.....	Use of Sealed Sources for Diagnosis	VI-44
-----	----------------	---	-------

SUBPART G SOURCES FOR BRACHYTHERAPY

R12	64E-5.632.....	Use of Sources for Manual Brachytherapy.....	VI-45
R12	64E-5.633.....	Manual Brachytherapy Sources Inventory and Surveys.....	VI-46
R10	64E-5.6331.....	Calibration Measurements of Manual Brachytherapy Systems.....	VI-47
R10	64E-5.6332.....	Decay of Strontium-90 Sources for Ophthalmic Treatments.....	VI-47

R10

SUBPART H PHOTON EMITTING**REMOTE AFTERLOADER UNITS, TELETHERAPY UNITS, AND GAMMA STEREOTACTIC RADIOSURGERY UNITS.**

R10	64E-5.634	Use of a Sealed Source in a Remote Afterloader Unit, Teletherapy Unit, or Gamma Stereotactic Radiosurgery Unit.....	VI-48
R10	64E-5.635	Installation, Adjustment, Maintenance and Repair Restrictions	VI-49
R10	64E-5.636	Safety Procedures and Instructions for Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units.....	VI-51
R10	64E-5.637	Safety Precautions for Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units	VI-51
R10	64E-5.638	Radiation Monitoring Devices.....	VI-52
R10	64E-5.639	Viewing Systems	VI-53
R10	64E-5.640	Dosimetry Equipment Used With Remote Afterloading Units, Teletherapy Units, or Gamma Stereotactic Radiosurgery Units.....	VI-53
R10	64E-5.641	Full Calibration Measurements On Teletherapy Units.....	VI-54
R10	64E-5.6411	Full Calibration Measurements On Remote Afterloader Units	VI-56
R12	64E-5.6412	Full Calibration Measurements On Gamma Stereotactic Radiosurgery Units.....	VI-57
R10	64E-5.642	Periodic Spot-Checks of Teletherapy Units.....	VI-59
R10	64E-5.6421	Periodic Spot-Checks for Remote Afterloader Units	VI-61
R12	64E-5.6422	Periodic Spot-Checks for Gamma Stereotactic Radiosurgery Units	VI-62
R10	64E-5.6423	Additional Technical Requirements for Mobile Remote Afterloader Units....	VI-65
R12	64E-5.643	Radiation Surveys for Teletherapy Facilities	VI-66
R10	64E-5.644	Radiation Surveys for Remote Afterloader and Gamma Stereotactic Radiosurgery Facilities	VI-67
R12	64E-5.645.....	Therapy-Related Computer Systems.....	VI-68
	64E-5.646	Reports of Teletherapy Surveys, Checks, Tests, and Measurements	VI-68
R10	64E-5.647	Five Year Inspection for Teletherapy and Gamma Stereotactic Radiosurgery Units.....	VI-86

SUBPART I TRAINING AND EXPERIENCE REQUIREMENTS

R10	64E-5.648	Radiation Safety Officer	VI-69
R12	64E-5.649	Training for Uptake, Dilution, or Excretion Studies.....	VI-72
R12	64E-5.650	Training for Imaging and Localization Studies for Which a Written Directive is Not Required.....	VI-73
R10	64E-5.651	Repealed (See Rules 64E-5.660, 64E-5.661, 64E-5.662 & 64E-5.663)	VI-75
R12	64E-5.652	Training for Therapeutic Use of Manual Brachytherapy Sources.....	VI-75
R12	64E-5.653	Training for Ophthalmic Use of Strontium 90	VI-77
R12	64E-5.654	Training for Use of Sealed Sources for Diagnosis	VI-78
R12	64E-5.655	Training for Use of Remote Afterloader Units, Teletherapy Units, and Gamma Stereotactic Radiosurgery Units.....	VI-79
R12	64E-5.656	Training for an Authorized Medical Physicist	VI-81
R10	64E-5.657	Training for Experienced RSO, Teletherapy or Medical Physicist, Authorized Medical Physicist, Authorized User, Nuclear Pharmacist, and Authorized Nuclear Pharmacist.....	VI-83
R10	64E-5.658	Recentness of Training	VI-83
R12	64E-5.660	Training for Use of Unsealed Radioactive Material for Which a Written Directive Is Required in Rules 64E-5.626, 64E-5.627 or 64E-5.630.....	VI-86
R12	64E-5.661	Training for the Oral Administration of Sodium Iodide I-131 Requiring a Written Directive in Quantities Less Than or Equal to 1.22 Gigabecquerels (33 Millicuries)	VI-88
R12	64E-5.662	Training for the Oral Administration of Sodium Iodide I-131 Requiring a Written Directive in Quantities Greater Than 1.22 Gigabecquerels (33 Millicuries)	VI-90
R12	64E-5.663	Training for the Parenteral Administration of Unsealed Radioactive Material Requiring a Written Directive	VI-91

R10 **SUBPART J MEDICAL USES OR RADIOACTIVE MATERIAL
OR RADIATION FROM RADIOACTIVE MATERIAL**

R10	64E-5.664	Other Medical Uses of Radioactive Material or Radiation From Radioactive Material	VI-94
-----	-----------	--	-------

**PART VII RADIATION SAFETY REQUIREMENTS FOR
ANALYTICAL X-RAY EQUIPMENT**

64E-5.701 ... Equipment Requirements.....	VII-1
64E-5.702 ... Area Requirements	VII-2
64E-5.703 ... Operating Requirements	VII-3
64E-5.704 ... Personnel Requirements.....	VII-4

**PART VIII RADIATION SAFETY REQUIREMENTS FOR ANALYTICAL
PARTICLE ACCELERATORS**

SUBPART A REGISTRATION PROCEDURE

R13	64E-5.801	Registration Requirements.....	VIII-1
	64E-5.802	General Requirements for the Issuance of a Registration Certificate for Particle Accelerators	VIII-1
	64E-5.803	Particle Accelerators for Therapeutic Use on Humans	VIII-2

**SUBPART B RADIATION SAFETY REQUIREMENTS FOR THE USE OF
PARTICLE ACCELERATORS**

	64E-5.804	Limitations.....	VIII-3
	64E-5.805	Shielding and Safety Design Requirements.....	VIII-3
	64E-5.806	Particle Accelerator Controls and Interlock Systems	VIII-3
	64E-5.807	Warning Devices.....	VIII-4
	64E-5.808	Operating Procedures.....	VIII-5
	64E-5.809	Radiation Monitoring Requirements.....	VIII-5
R12	64E-5.810	Ventilation Systems.....	VIII-6

**PART IX NOTICES, INSTRUCTIONS AND REPORTS TO WORKERS;
INSPECTIONS**

R5	64E-5.901 ... Posting of Notices to Workers.....	IX-1
R1	64E-5.902 Instructions to Workers	IX-2
	64E-5.903 Notification and Reports to Individuals	IX-3
	64E-5.904 Presence of Representatives of Licensees or Registrants and Workers During Inspection.....	IX-4
	64E-5.905 Consultation with Workers During Inspections.....	IX-5
	64E-5.906 Request by Workers for Inspections	IX-5
	64E-5.907 Inspections Not Warranted; Informal Review.....	IX-6

PART X ENVIRONMENTAL RADIATION STANDARDS

SUBPART A RADIATION STANDARDS FOR BUILDINGS

64E-5.1001.. Standards..... X-1

SUBPART B ENVIRONMENTAL MONITORING

64E-5.1002 . Monitoring Requirements..... X-1

R8 64E-5.1003 . Monitoring Fees X-2

PART XI RADIATION SAFETY REQUIREMENTS FOR WIRELINE SERVICE OPERATIONS

R1	64E-5.1101	... Prohibitions.....	XI-1
SUBPART A EQUIPMENT CONTROL			
	64E-5.1102	... Storage and Transportation Precautions.....	XI-2
R2	64E-5.1103	... Radiation Survey Instruments	XI-2
R6	64E-5.1104	... Leak Testing of Sealed Sources	XI-3
	64E-5.1105	... Quarterly Inventory	XI-4
	64E-5.1106	... Utilization Records.....	XI-4
R6	64E-5.1107	... Design, Performance and Certification Criteria for Sealed Sources Used in Downhole Operations.....	XI-4
R6	64E-5.11071	. Uranium Sinker Bars	XI-5
R8	64E-5/11072	. Energy Compensation Source.....	XI-6
R6	64E-5.11073	. Tritium Neutron Generator Target Source.....	XI-6
	64E-5.1108	... Labeling.....	XI-6
	64E-5.1109	... Inspection and Maintenance	XI-7
SUBPART B REQUIREMENTS FOR PERSONNEL SAFETY			
	64E-5.1110	... Training Requirements	XI-7
	64E-5.1111	... Operating and Emergency Procedures	XI-8
R6	64E-5.1112	... Personnel Monitoring	XI-9
SUBPART C PRECAUTIONARY PROCEDURES IN LOGGING AND SUBSURFACE TRACER OPERATIONS			
	64E-5.1113	... Security	XI-9
	64E-5.1114	... Handling Tools	XI-9
R12	64E-5.1115	... Subsurface Tracer Studies.....	XI-9
SUBPART D RADIATION SURVEYS AND RECORDS			
	64E-5.1116	... Radiation Surveys	XI-10
	64E-5.1117	... Documents and Records Required at Field Stations.....	XI-11
	64E-5.1118	... Documents and Records Required at Temporary Jobsites.....	XI-11
SUBPART E NOTIFICATION			
R6	64E-5.1119	... Notification of Incidents, Abandonment and Lost Sources.....	XI-12
R6	64E-5.1120	... Subjects To Be Included in Training Courses For Logging Supervisors	XI-14

PART XIII RADIATION SAFETY REQUIREMENTS FOR POSSESSION AND USE OF SEALED OR UNSEALED SOURCES OF RADIOACTIVE MATERIALS

R10 64E-5.1301 ... Sealed or Unsealed Sources of Radioactive Materials XIII-1

SUBPART A GENERAL REQUIREMENTS

64E-5.1302 ... Operating and Emergency Procedures XIII-1

64E-5.1303 ... Leak Test Requirements for Possession of Sealed Sources XIII-2

64E-5.1304 ... Inventory Requirements XIII-4

64E-5.1305 ... Training Requirements, Authority, Duties and Responsibilities of the
Radiation Safety Officer XIII-4

64E-5.1306 ... Opening Sealed Sources XIII-5

64E-5.1307 ... Training Requirements for Authorized Users XIII-5

64E-5.1308 ... Additional Requirements for General Licenses XIII-6

64E-5.1309 ... Training for Current Authorized Users XIII-6

R2 64E-5.1310 ... Personnel Monitoring XIII-6

SUBPART B REQUIREMENTS FOR THE POSSESSION AND USE OF SEALED SOURCES IN PORTABLE DEVICES

R6 64E-5.1311 ... Storage, Security and Transportation Precautions XIII-7

64E-5.1312 ... Training and User Requirements XIII-8

SUBPART C REQUIREMENTS FOR THE POSSESSION AND USE OF SEALED SOURCES IN FIXED DEVICES

64E-5.1313 ... Training and User Requirements XIII-8

64E-5.1314 ... Possession of Survey Instruments XIII-9

64E-5.1315 ... Additional Requirements XIII-9

SUBPART D REQUIREMENTS FOR THE POSSESSION AND USE OF UNSEALED SOURCES OF RADIOACTIVE MATERIALS

64E-5.1316 ... General Rules for the Safe Use of Unsealed Sources of
Radioactive Material XIII-9

R12 64E-5.1317 ... Storage and Control of Volatiles and Gases XIII-10

64E-5.1318 ... Instrumentation XIII-10

64E-5.1319 ... Contamination Control Program XIII-11

R10 64E-5.1320 ... Bioassay Program XIII-13

PART XIV LICENSING AND RADIATION SAFETY REQUIREMENTS FOR IRRADIATORS

SUBPART A GENERAL PROVISIONS

64E-5.1401 ... Irradiators	XIV-1
64E-5.1402 ... Definitions.....	XIV-1

SUBPART B SPECIFIC LICENSE FOR LARGE IRRADIATORS

64E-5.1403 ... Specific License for Large Irradiators	XIV-3
64E-5.1404 ... Start of Construction.....	XIV-5

SUBPART C DESIGN AND PERFORMANCE REQUIREMENTS FOR LARGE IRRADIATORS

64E-5.1405 ... Performance Criteria for Sealed Sources.....	XIV-5
R2 64E-5.1406 ... Access Control	XIV-6
64E-5.1407 ... Shielding.....	XIV-8
64E-5.1408 ... Fire Protection	XIV-8
64E-5.1409 ... Radiation Monitors	XIV-9
64E-5.1410 ... Control of Source Movement.....	XIV-9
64E-5.1411 ... Irradiator Pools	XIV-10
64E-5.1412 ... Source Rack Protection.....	XIV-11
64E-5.1413 ... Power Failures	XIV-11
64E-5.1414 ... Design Requirements	XIV-11
64E-5.1415 ... Construction Control.....	XIV-14

SUBPART D OPERATION OF IRRADIATORS

64E-5.1416 ... Training	XIV-15
64E-5.1417 ... Operating and Emergency Procedures	XIV-17
R2 64E-5.1418 ... Personnel Monitoring	XIV-18
R12 64E-5.1419 ... Radiation Surveys	XIV-19
R12 64E-5.1420 ... Detection of Leaking or Contaminated Sources	XIV-20
64E-5.1421 ... Inspection and Maintenance	XIV-21
64E-5.1422 ... Pool Water Purity	XIV-22
64E-5.1423 ... Attendance During Operation.....	XIV-22
64E-5.1424 ... Entering and Leaving the Radiation Room.....	XIV-23
64E-5.1425 ... Irradiation of Explosive or Highly Flammable Materials.....	XIV-23

SUBPART E RECORDS AND REPORTS

64E-5.1426 ... Records and Retention Periods	XIV-24
64E-5.1427 ... Reports and Notifications	XIV-26

PART XV TRANSPORTATION OF RADIOACTIVE MATERIALS

R12	64E-5.1501 ...Purpose and Scope.....	XV-1a
R12	64E-5.1502 ...Transportation of Radioactive Material.....	XV-1a
	64E-5.1503 ...Exemptions.....	XV-2
	64E-5.1504 ...General Licenses for Carriers.....	XV-2
	64E-5.1505 ...Routine Determinations.....	XV-3
	64E-5.1506 Advance Notification of Shipment of Certain Quantities of Radioactive Waste.....	XV-3
	64E-5.1507 ...Designation of Routes for Shipment of Radioactive Waste Requiring Advanced Notification	XV-5
R7	64E-5.1508 ...Inspection of Low-Level Radioactive Waste Shipments.....	XV-6
	64E-5.1509 ...Permit Requirements.....	XV-7
	64E-5.1510 ...Air Transport of Plutonium.....	XV-9
	64E-5.1511 ...Notification in the Event of Suspected or Real Breach of Containment ...	XV-9
	64E-5.1512 ...Inspections	XV-10
R2	64E-5.1513 ...Communications.....	XV-10
	APPENDIX A.To 10 CFR Part 71 Determination of A_1 , and A_2 Values	XV-11
	TABLE A-1 A_1 and A_2 Values for Radionuclides.....	XV-13
	TABLE A-2 ....Relationship Between A_1 and E_{max} for Beta Emitters	XV-31
	TABLE A-3 .....Relationship Between A_3 for Alpha Emitters and the Atomic Number of the Radionuclide.....	XV-31
	TABLE A-4 ....Activity - Mass Relationships for Uranium/Thorium.....	XV-32

Part XVI ELECTRONIC BRACHYTHERAPY

R9	64E-5.1601 ..Definitions.....	XVI-1
R13	64E-5.1602 ..Administrative Procedures.....	XVI-2
R9	64E-5.1603 ..Training and Education	XVI-4
R9	64E-5.1604 ..General Technical Requirements For Electronic Brachytherapy Facilities..	XVI-7

Attachments

	ALIs, DACs, and Effluent Concentrations May 2006	Attachments Page-1
R6	Protection Factors for Respirators May 1006	Attachments Page-63
R2	Radioactive Material Requiring Labeling May 2000.....	Attachments Page-68
	Occupational Exposure Record for a Monitoring Period	
	DH Form 1622 Edition 05/1997	Attachments Page-81
	Cumulative Occupational Exposure History	
	DH Form 1623 Edition 05/1997	Attachments Page-84
	Certificate - Disposition of Radioactive Materials	
	DH Form 1059 Edition 05/1997	Attachments Page-87
	Radioactive Materials License Application -- Non-Human Use	
R10	Radioactive Materials License Application Non-Human Use Form DH-1054 12/09	Attachments Page 89
R5	Notice to Employees DH Form 1081 3/01	Attachments Page 93
R1	Requirements for Transfers of Low-Level Radioactive Waste Intended	
R1	for Disposal at Licensed Land Disposal Facilities and Manifest, July 1997	Attachments page 95
R7	Transfers of Industrial Devices Report 04/2007	
R7	Radiation Machine Facility Registration DH 1107 03/07	
R10	Radioactive Materials License Application Human Use Form DH-1322 12/09	
R10	Federal Policy for the Protection of Human Subjects (Federal Policy)	
	as described in 45 CFR Part 46 dated 11/9/2009 (See 64E-5.601)	

PART XVI ELECTRONIC BRACHYTHERAPY

R9	64E-5.1601 ...Definitions.....	XVI-1
R9	64E-5.1602 ...Administrative Requirements.....	XVI-2
R9	64E-5.1603 ...Training and Education	XVI-4
R9	64E-5.1604 General Technical Requirements For	
R9	Electronic Brachytherapy Facilities.....	XVI-7

