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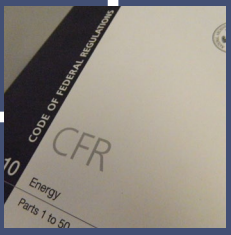
APPENDICES



This edition of the Digest provides a snapshot of data; for the most current information and data collection, please visit the NRC Web site Dataset Index Web page at https://www.nrc.gov/reading-rm/doc-collections/datasets/.

Abbreviations

ABWR	advanced boiling-water reactor
AC	Allis Chalmers
ac	alternating current
ACRS	Advisory Committee on Reactor Safeguards
ADR	Alternative Dispute Resolution
AEC	Atomic Energy Commission (U.S.)
AEP	American Electric Power Company
AGN	solid homogeneous core (Aerojet-General Nucleonics)
AP1000	Advanced Passive 1000 Megawatt (Westinghouse pressurized-water reactor)
ASLB	Atomic Safety and Licensing Board
B&R	Burns & Roe
B&W	Babcock & Wilcox
BALD	Baldwin Associates
BECH	Bechtel
BRRT	Brown & Root
BWR	boiling-water reactor
CE	Combustion Engineering
CFR	*Code of Federal Regulations*
Co	company
COL	combined license
Comm. Op.	date of commercial operation
Con Type	containment type
DRYAMB	dry, ambient pressure
DRYSUB	dry, subatmospheric
ICECND	wet, ice condenser
MARK I	*wet, Mark I*
MARK II	*wet, Mark II*
MARK III	*wet, Mark III*
CP Issued	date of construction permit issuance
CT	computerized tomography
CVP	civil penalties
CWE	Commonwealth Edison Company
DANI	Daniel International
DBDB	Duke & Bechtel
DBT	design-basis threat
DC	design certification
DHS	Department of Homeland Security (U.S.)
DOE	Department of Energy (U.S.)
DOT	Department of Transportation (U.S.)
DUKE	Duke Power Company
EBSO	Ebasco
EIA	Energy Information Administration (DOE)
EP	emergency preparedness
EPA	Environmental Protection Agency (U.S.)
EPR	Evolutionary Power Reactor
EPZ	emergency planning zone
ESBWR	Economic Simplified Boiling-Water Reactor
ESP	early site permit
EVESR	ESADA (Empire States Atomic Development Associates) Vallecitos Experimental Superheat Reactor
Exp. Date	expiration date of operating license
FBR	fast breeder reactor
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLUR	Fluor Pioneer
FOIA	Freedom of Information Act
FTE	full-time equivalent
FW	Foster Wheeler
FY	fiscal year
G&H	Gibbs & Hill
GA	General Atomics
GCR	gas-cooled reactor
GE	General Electric
GEH	General Electric-Hitachi Nuclear Energy
GEIS	generic environmental impact statement
GETR	General Electric Test Reactor
GIL	Gilbert Associates
GL	general license
GPC	Georgia Power Company
GWh	gigawatt-hour(s)
HLW	high-level waste
HTG	high-temperature gas (reactor)
HWR	heavy-water reactor
IAEA	International Atomic Energy Agency
INES	International Nuclear Event Scale
ISFSI	independent spent fuel storage installation
ISR	in situ recovery
IUP	Intergrated University Program
KAIS	Kaiser Engineers
kW	kilowatt(s)
LLP	B&W lowered loop
LLW	low-level radioactive waste
LMFB	liquid metal fast breeder (reactor)
LR Issued	license renewal issued
LWGR	light-water-cooled graphite-moderated reactor
MOX	mixed oxide
MW	megawatt(s)
MWe	megawatt(s) electric
MWh	megawatt-hour(s)
MWt	megawatt(s) thermal
NIAG	Niagara Mohawk Power Corporation
NEA	Nuclear Energy Agency
NMMSS	Nuclear Materials Management and Safeguards System
NOV	notice of violation
NRC	Nuclear Regulatory Commission (U.S.)

NSP	Northern States Power Company
NSSS	nuclear steam system supplier and design type
GE 2	*GE Type 2*
GE 3	*GE Type 3*
GE 4	*GE Type 4*
GE 5	*GE Type 5*
GE 6	*GE Type 6*
WEST 2LP	*Westinghouse Two-Loop*
WEST 3LP	*Westinghouse Three-Loop*
WEST 4LP	*Westinghouse Four-Loop*
NSTS	National Source Tracking System
OECD	Organisation for Economic Co-operation and Development
OIG	Office of the Inspector General
OL	operating license
OL Issued	date of latest full power operating license
PG&E	Pacific Gas & Electric Company
PHWR	pressurized heavy water reactor
PRA	probabilistic risk assessment
PSEG	Public Service Electric and Gas Company
PWR	pressurized-water reactor
RLP	B&W raised loop
ROP	Reactor Oversight Process
RTR	research and test reactor
S&L	Sargent & Lundy
S&W	Stone & Webster
SCF	sodium-cooled fast (reactor)
SDP	significance determination process
SI	Système Internationale (d'unités) (International System of Units)
SL	severity level
SMR	small modular reactor
SOARCA	State-of-the-Art Reactor Consequence Analysis
SSI	Southern Services Incorporated
STP	South Texas Project
TMI-2	Three Mile Island, Unit 2
Sv	sievert
TRIGA	Training Reactor and Isotopes Production, General Atomics
TVA	Tennessee Valley Authority
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
UE&C	United Engineers & Constructors
US-APWR	U.S. [version of] Advanced Pressurized-Water Reactor
VBWR	Vallecitos Boiling-Water Reactor
WDCO	Westinghouse Development Corporation
WEST	Westinghouse Electric
WNA	World Nuclear Association

State and Territory Abbreviations

Alabama	AL	Kentucky	KY	Ohio	OH
Alaska	AK	Louisiana	LA	Oklahoma	OK
Arizona	AZ	Maine	ME	Oregon	OR
Arkansas	AR	Maryland	MD	Pennsylvania	PA
California	CA	Massachusetts	MA	Puerto Rico	PR
Colorado	CO	Michigan	MI	Rhode Island	RI
Connecticut	CT	Minnesota	MN	South Carolina	SC
Delaware	DE	Mississippi	MS	South Dakota	SD
District of Columbia	DC	Missouri	MO	Tennessee	TN
Florida	FL	Montana	MT	Texas	TX
Georgia	GA	Nebraska	NE	Utah	UT
Guam	GU	Nevada	NV	Vermont	VT
Hawaii	HI	New Hampshire	NH	Virgin Islands	VI
Idaho	ID	New Jersey	NJ	Virginia	VA
Illinois	IL	New Mexico	NM	Washington	WA
Indiana	IN	New York	NY	West Virginia	WV
Iowa	IA	North Carolina	NC	Wisconsin	WI
Kansas	KS	North Dakota	ND	Wyoming	WY

QUICK-REFERENCE METRIC CONVERSION TABLES

SPACE AND TIME

Quantity	From Inch-Pound Units	To Metric Units	Multiply by
Length	mi (statute)	km	1.609347
	yd	m	*0.9144
	ft (int)	m	*0.3048
	in	cm	*2.54
Area	mi^2	km^2	2.589998
	acre	m^2	4,046.873
	yd^2	m^2	0.8361274
	ft^2	m^2	*0.09290304
	in^2	cm^2	*6.4516
Volume	acre foot	m^3	1,233.489
	yd^3	m^3	0.7645549
	ft^3	m^3	0.02831685
	ft^3	L	28.31685
	gal	L	3.785412
	fl oz	mL	29.57353
	in^3	cm^3	16.38706
Velocity	mi/h	km/h	1.609347
	ft/s	m/s	*0.3048
Acceleration	ft/s^2	m/s^2	*0.3048

NUCLEAR REACTION AND IONIZING RADIATION

Quantity	From Inch-Pound Units	To Metric Units	Multiply by
Activity (of a radionuclide)	curie (Ci)	MBq	*37,000.0
	dpm	becquerel (Bq)	0.016667
Absorbed dose	rad	gray (Gy)	*0.01
	rad	cGy (centigray)	*1.0
Dose equivalent	rem	sievert (Sv)	*0.01
	rem	mSv	*10.0
	mrem	mSv	*0.01
	mrem	µSv (microsievert)	*10.0
Exposure (x-rays and gamma rays)	roentgen (R)	C (coulomb)/kg	0.000258

HEAT

Quantity	From Inch-Pound Units	To Metric Units	Multiply by
Thermodynamic temperature	°F	K	*K = (°F + 459.67)/1.8
Celsius temperature	°F	°C	*°C = (°F – 32)/1.8
Linear expansion coefficient	1/°F	1/K or 1/°C	*1.8
Thermal conductivity	(Btu • in)/(ft^2 • h • °F)	W/(m • °C)	0.1442279
Coefficient of heat transfer	Btu/(ft^2 • h • °F)	W/(m^2 • °C)	5.678263
Heat capacity	Btu/°F	kJ/°C	1.899108
Specific heat capacity	Btu/(lb • °F)	kJ/(kg • °C)	*4.1868

QUICK-REFERENCE METRIC CONVERSION TABLES

HEAT (continued)

Entropy	Btu/°F	kJ/°C	1.899108
Specific entropy	Btu/(lb • °F)	kJ/(kg • °C)	*4.1868
Specific internal energy	Btu/lb	kJ/kg	*2.326

MECHANICS

Quantity	From Inch-Pound Units	To Metric Units	Multiply by
Mass (weight)	ton (short)	t (metric ton)	*0.90718474
	lb (avdp)	kg	*0.45359237
Moment of mass	lb • ft	kg • m	0.138255
Density	ton (short)/yd^3	t/m^3	1.186553
	lb/ft^3	g/m^3	16.01846
Concentration (mass)	lb/gal	g/L	119.8264
Momentum	lb • ft/s	kg • m/s	0.138255
Angular momentum	lb • ft^2/s	kg • m^2/s	0.04214011
Moment of inertia	lb • ft^2	kg • m^2	0.04214011
Force	kip (kilopound)	kN (kilonewton)	4.448222
	lbf	N (newton)	4.448222
Moment of force, torque	lbf • ft	N • m	1.355818
	lbf • in	N • m	0.1229848
Pressure	atm (std)	kPa (kilopascal)	*101.325
	bar	kPa	*100.0
	lbf/in^2 (formerly psi)	kPa	6.894757
	inHg (32 °F)	kPa	3.38638
	ftH_2O (39.2 °F)	kPa	2.98898
	inH_2O (60 °F)	kPa	0.24884
	mmHg (0 °C)	kPa	0.133322
Stress	kip/in^2 (formerly ksi)	MPa	6.894757
	lbf/in^2 (formerly psi)	MPa	0.006894757
	lbf/in^2 (formerly psi)	kPa	6.894757
	lbf/ft^2	kPa	0.04788026
Energy, work	kWh	MJ	*3.6
	calth	J (joule)	*4.184
	Btu	kJ	1.055056
	ft • lbf	J	1.355818
	therm (U.S.)	MJ	105.4804
Power	Btu/s	kW	1.055056
	hp (electric)	kW	*0.746
	Btu/h	W	0.2930711

* Exact conversion factors

Notes: The information contained in this table is intended to familiarize readers with commonly used International System of Units (SI) units and provide a quick reference to aid understanding of documents containing SI units. The conversion factors listed here have not been approved as NRC guidelines for the development of licensing actions, regulations, or policy.

To convert from metric units to inch-pound units, divide the metric unit by the conversion factor.

Sources: Federal Standard 376B, “Preferred Metric Units for General Use by the Federal Government,” and International Commission on Radiation Units and Measurements, ICRU Report 33, “Radiation Quantities and Units,” issued 1980.

APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Arkansas Nuclear One, Unit 1	IV	PWR-DRYAMB	2,568	12/06/1968	87
Entergy Operations, Inc.		B&W LLP	DPR-51	05/21/1974	102
London, AR		BECH		12/19/1974	56
(6 miles WNW of Russellville, AR)		BECH		06/20/2001	98
05000313				05/20/2034	82
https://www.nrc.gov/info-finder/reactors/ano1.html					72
Arkansas Nuclear One, Unit 2	IV	PWR-DRYAMB	3,026	12/06/1972	90
Entergy Operations, Inc.		CE	NPF-6	09/01/1978	93
London, AR		BECH		03/26/1980	91
(6 miles NW of Russellville, AR)		BECH		06/30/2005	85
05000368				07/17/2038	94
https://www.nrc.gov/info-finder/reactors/ano2.html					89
Beaver Valley Power Station, Unit 1	I	PWR-DRYAMB	2,900	06/26/1970	101
FirstEnergy Nuclear Operating Co.		WEST 3LP	DPR-66	07/02/1976	92
Shippingport, PA		S&W		10/01/1976	86
(17 miles W of McCandless, PA)		S&W		11/05/2009	86
05000334				01/29/2036	90
https://www.nrc.gov/info-finder/reactors/bv1.html					91
Beaver Valley Power Station, Unit 2	I	PWR-DRYAMB	2,900	05/03/1974	102
FirstEnergy Nuclear Operating Co.		WEST 3LP	NPF-73	08/14/1987	91
Shippingport, PA		S&W		11/17/1987	97
(17 miles W of McCandless, PA)		S&W		11/05/2009	98
05000412				05/27/2047	90
https://www.nrc.gov/info-finder/reactors/bv2.html					97
Braidwood Station, Unit 1	III	PWR-DRYAMB	3,645	12/31/1975	101
Exelon Generation Co., LLC		WEST 4LP	NPF-72	07/02/1987	91
Braceville, IL		S&L		07/29/1988	95
(20 miles SSW of Joliet, IL)		CWE		N/A	103
05000456				10/17/2026	93
https://www.nrc.gov/info-finder/reactors/brai1.html					90
Braidwood Station, Unit 2	III	PWR-DRYAMB	3,645	12/31/1975	93
Exelon Generation Co., LLC		WEST 4LP	NPF-77	05/20/1988	93
Braceville, IL		S&L		10/17/1988	98
(20 miles SSW of Joliet, IL)		CWE		N/A	96
05000457				12/18/2027	91
https://www.nrc.gov/info-finder/reactors/brai2.html					95
Browns Ferry Nuclear Plant, Unit 1	II	BWR-MARK 1	3,458	05/10/1967	91
Tennessee Valley Authority		GE 4	DPR-33	12/20/1973	88
Athens (Limestone County), AL		TVA		08/01/1974	94
(32 miles W of Huntsville, AL)		TVA		05/04/2006	90
05000259				12/20/2033	94
https://www.nrc.gov/info-finder/reactors/bf1.html					83

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APPENDIX A
Commercial Nuclear Power Reactors
Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Browns Ferry Nuclear Plant, Unit 2	II	BWR-MARK 1	3,458	05/10/1967	80
Tennessee Valley Authority		GE 4	DPR-52	06/28/1974	99
Athens (Limestone County), AL		TVA		03/01/1975	79
(32 miles W of Huntsville, AL)		TVA		05/04/2006	98
05000260				06/28/2034	85
https://www.nrc.gov/info-finder/reactors/bf2.html					94
Browns Ferry Nuclear Plant, Unit 3	II	BWR-MARK 1	3,458	07/31/1968	87
Tennessee Valley Authority		GE 4	DPR-68	07/02/1976	83
Athens (Limestone County), AL		TVA		03/01/1977	89
(32 miles W of Huntsville, AL)		TVA		05/04/2006	88
05000296				07/02/2036	92
https://www.nrc.gov/info-finder/reactors/bf3.html					80
Brunswick Steam Electric Plant, Unit 1	II	BWR-MARK 1	2,923	02/07/1970	100
Duke Energy Progress, LLC		GE 4	DPR-71	09/08/1976	77
Southport, NC		UE&C		03/18/1977	92
(30 miles S of Wilmington, NC)		BRRT		06/26/2006	89
05000325				09/08/2036	93
https://www.nrc.gov/info-finder/reactors/bru1.html					83
Brunswick Steam Electric Plant, Unit 2	II	BWR-MARK 1	2,923	02/07/1970	79
Duke Energy Progress, LLC		GE 4	DPR-62	12/27/1974	98
Southport, NC		UE&C		11/03/1975	73
(30 miles S of Wilmington, NC)		BRRT		06/26/2006	98
05000324				12/27/2034	81
https://www.nrc.gov/info-finder/reactors/bru2.html					92
Byron Station, Unit 1	III	PWR-DRYAMB	3,645	12/31/1975	88
Exelon Generation Co., LLC		WEST 4LP	NPF-37	02/14/1985	88
Byron, IL		S&L		09/16/1985	96
(17 miles SW of Rockford, IL)		CWE		N/A	97
05000454				10/31/2024	88
https://www.nrc.gov/info-finder/reactors/byro1.html					97
Byron Station, Unit 2	III	PWR-DRYAMB	3,645	12/31/1975	93
Exelon Generation Co., LLC		WEST 4LP	NPF-66	01/30/1987	94
Byron, IL		S&L		08/02/1987	86
(17 miles SW of Rockford, IL)		CWE		N/A	94
05000455				11/06/2026	94
https://www.nrc.gov/info-finder/reactors/byro2.html					86
Callaway Plant, Unit 1	IV	PWR-DRYAMB	3,565	04/16/1976	90
Union Electric Co.		WEST 4LP	NPF-30	10/18/1984	103
Fulton, MO		BECH		12/19/1984	77
(25 miles ENE of Jefferson City, MO)		DANI		03/06/2015	89
05000483				10/18/2044	96
https://www.nrc.gov/info-finder/reactors/call.html					87

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APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Calvert Cliffs Nuclear Power Plant, Unit 1	I	PWR-DRYAMB	2,737	07/07/1969	101
Calvert Cliffs Nuclear Power Plant, LLC		CE	DPR-53	07/31/1974	81
Exelon Generation Co., LLC		BECH		05/08/1975	97
Lusby, MD		BECH		03/23/2000	91
(40 miles S of Annapolis, MD)				07/31/2034	97
05000317					89
https://www.nrc.gov/info-finder/reactors/calv1.html					
Calvert Cliffs Nuclear Power Plant, Unit 2	I	PWR-DRYAMB	2,737	07/07/1969	92
Calvert Cliffs Nuclear Power Plant, LLC		CE	DPR-69	08/13/1976	101
Exelon Generation Co., LLC		BECH		04/01/1977	81
Lusby, MD		BECH		03/23/2000	100
(40 miles S of Annapolis, MD)				08/13/2036	86
05000318					95
https://www.nrc.gov/info-finder/reactors/calv2.html					
Catawba Nuclear Station, Unit 1	II	PWR-ICECND	3,411	08/07/1975	89
Duke Energy Carolinas, LLC		WEST 4LP	NPF-35	01/17/1985	89
York, SC		DUKE		06/29/1985	96
(18 miles S of Charlotte, NC)		DUKE		12/05/2003	86
05000413				12/05/2043	88
https://www.nrc.gov/info-finder/reactors/cat1.html					97
Catawba Nuclear Station, Unit 2	II	PWR-ICECND	3,411	08/07/1975	101
Duke Energy Carolinas, LLC		WEST 4LP	NPF-52	05/15/1986	92
York, SC		DUKE		08/19/1986	86
(18 miles S of Charlotte, NC)		DUKE		12/05/2003	100
05000414				12/05/2043	86
https://www.nrc.gov/info-finder/reactors/cat2.html					88
Clinton Power Station, Unit 1	III	BWR-MARK 3	3,473	02/24/1976	93
Exelon Generation Co., LLC		GE 6	NPF-62	04/17/1987	100
Clinton, IL		S&L		11/24/1987	82
(23 miles SSE of Bloomington, IL)		BALD		N/A	97
05000461				09/29/2026	87
https://www.nrc.gov/info-finder/reactors/clin.html					89
Columbia Generating Station	IV	BWR-MARK 2	3,486	03/19/1973	50
Energy Northwest		GE 5	NPF-21	04/13/1984	97
Benton County, WA		B&R		12/13/1984	80
(12 miles NW of Richland, WA)		BECH		05/22/2012	98
05000397				12/20/2043	78
https://www.nrc.gov/info-finder/reactors/wash2.html					92
Comanche Peak Nuclear Power Plant, Unit 1	IV	PWR-DRYAMB	3,612	12/19/1974	91
Vistra Operating Co., LLC		WEST 4LP	NPF-87	04/17/1990	98
Glen Rose, TX		G&H		08/13/1990	94
(40 miles SW of Fort Worth, TX)		BRRT		N/A	85
05000445				02/08/2030	100
https://www.nrc.gov/info-finder/reactors/cp1.html					92

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APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Comanche Peak Nuclear Power Plant, Unit 2	IV	PWR-DRYAMB	3,612	12/19/1974	92
Vistra Operating Co., LLC		WEST 4LP	NPF-89	04/06/1993	91
Glen Rose, TX		BECH		08/03/1993	99
(40 miles SW of Fort Worth, TX)		BRRT		N/A	93
05000446				02/02/2033	88
https://www.nrc.gov/info-finder/reactors/cp2.html					100
Cooper Nuclear Station	IV	BWR-MARK 1	2,419	06/04/1968	86
Nebraska Public Power District		GE 4	NPF-46	01/18/1974	87
Brownville, NE		B&R		07/01/1974	97
(23 miles S of Nebraska City, NE)		B&R		11/29/2010	88
05000298				01/18/2034	97
https://www.nrc.gov/info-finder/reactors/cns.html					84
Davis-Besse Nuclear Power Station, Unit 1	III	PWR-DRYAMB	2,817	03/24/1971	81
FirstEnergy Nuclear Operating Co.		B&W RLP	NFP-3	04/22/1977	91
Oak Harbor, OH		BECH		07/31/1978	95
(21 miles ESE of Toledo, OH)		B&W		12/08/2015	74
05000346				04/22/2037	97
https://www.nrc.gov/info-finder/reactors/davi.html					79
Diablo Canyon Nuclear Power Plant, Unit 1	IV	PWR-DRYAMB	3,411	4/23/1968	100
Pacific Gas & Electric Co.		WEST 4LP	DPR-80	11/02/1984	84
Avila Beach, CA		PG&E		05/07/1985	95
(12 miles SW of San Luis Obispo, CA)		PG&E		N/A	87
05000275				11/02/2024	87
https://www.nrc.gov/info-finder/reactors/diab1.html					98
Diablo Canyon Nuclear Power Plant, Unit 2	IV	PWR-DRYAMB	3,411	12/09/1970	89
Pacific Gas & Electric Co.		WEST 4LP	DPR-82	08/26/1985	97
Avila Beach, CA		PG&E		03/13/1986	82
(12 miles SW of San Luis Obispo, CA)		PG&E		N/A	86
05000323				08/26/2025	95
https://www.nrc.gov/info-finder/reactors/diab2.html					88
Donald C. Cook Nuclear Plant, Unit 1	III	PWR-ICECND	3,304	03/25/1969	87
Indiana Michigan Power Co.		WEST 4LP	DPR-58	10/25/1974	104
Bridgman, MI		AEP		08/28/1975	78
(13 miles S of Benton Harbor, MI)		AEP		08/30/2005	94
05000315				10/25/2034	78
https://www.nrc.gov/info-finder/reactors/cook1.html					82
Donald C. Cook Nuclear Plant, Unit 2	III	PWR-ICECND	3,468	03/25/1969	104
Indiana Michigan Power Co.		WEST 4LP	DPR-74	12/23/1977	91
Bridgman, MI		AEP		07/01/1978	85
(13 miles S of Benton Harbor, MI)		AEP		08/30/2005	101
05000316				12/23/2037	79
https://www.nrc.gov/info-finder/reactors/cook2.html					71

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APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Dresden Nuclear Power Station, Unit 2	III	BWR-MARK 1	2,957	01/10/1966	95
Exelon Generation Co., LLC		GE 3	DPR-19	02/20/1991[A]	104
Morris, IL		S&L		06/09/1970	85
(25 miles SW of Joliet, IL)		UE&C		10/28/2004	98
05000237				12/22/2029	83
https://www.nrc.gov/info-finder/reactors/dres2.html					91
Dresden Nuclear Power Station, Unit 3	III	BWR-MARK 1	2,957	10/14/1966	99
Exelon Generation Co., LLC		GE 3	DPR-25	01/12/1971	91
Morris, IL		S&L		11/16/1971	89
(25 miles SW of Joliet, IL)		UE&C		10/28/2004	95
05000249				01/12/2031	89
https://www.nrc.gov/info-finder/reactors/dres3.html					84
Duane Arnold Energy Center	III	BWR-MARK 1	1,912	06/22/1970	99
NextEra Energy Duane Arnold, LLC		GE 4	DPR-49	02/22/1974	83
Palo, IA		BECH		02/01/1975	89
(8 miles NW of Cedar Rapids, IA)		BECH		12/16/2010	79
05000331				02/21/2034	88
https://www.nrc.gov/info-finder/reactors/duan.html					79
Edwin I. Hatch Nuclear Plant, Unit 1	II	BWR-MARK 1	2,804	09/30/1969	98
Southern Nuclear Operating Co.		GE 4	DPR-57	10/13/1974	89
Baxley, GA		BECH		12/31/1975	94
(20 miles S of Vidalia, GA)		GPC		01/15/2002	89
05000321				08/06/2034	101
https://www.nrc.gov/info-finder/reactors/hat1.html					93
Edwin I. Hatch Nuclear Plant, Unit 2	II	BWR-MARK 1	2,804	12/27/1972	78
Southern Nuclear Operating Co., Inc.		GE 4	NPF-5	06/13/1978	98
Baxley, GA		BECH		09/05/1979	89
(20 miles S of Vidalia, GA)		GPC		01/15/2002	99
05000366				06/13/2038	91
https://www.nrc.gov/info-finder/reactors/hat2.html					101
Fermi, Unit 2	III	BWR-MARK 1	3,486	09/26/1972	94
DTE Electric Company		GE 4	NPF-43	07/15/1985	54
Newport, MI		S&L		01/23/1988	62
(25 miles NE of Toledo, OH)		DANI		N/A	82
05000341				03/20/2025	69
https://www.nrc.gov/info-finder/reactors/ferm2.html					86

A: The Atomic Energy Commission (AEC) issued a provisional Operating License (OL) on 12/22/1969, allowing commercial operation. The NRC issued a full-term OL on 02/20/1991.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX A
Commercial Nuclear Power Reactors
Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Grand Gulf Nuclear Station, Unit 1	IV	BWR-MARK 3	4,408	09/04/1974	94
Entergy Operations, Inc.		GE 6	NPF-29	11/01/1984	70
Port Gibson, MS		BECH		07/01/1985	86
(20 miles S of Vicksburg, MS)		BECH		N/A	82
05000416				11/01/2024	93
https://www.nrc.gov/info-finder/reactors/gg1.html					47
H.B. Robinson Steam Electric Plant, Unit 2	II	PWR-DRYAMB	2,339	04/13/1967	100
Duke Energy Progress, Inc.		WEST 3LP	DPR-23	07/31/1970	85
Hartsville, SC		EBSO		03/07/1971	85
(26 miles NW of Florence, SC)		EBSO		04/19/2004	86
05000261				07/31/2030	85
https://www.nrc.gov/info-finder/reactors/rob2.html					95
Hope Creek Generating Station, Unit 1	I	BWR-MARK 1	3,840	11/04/1974	103
PSEG Nuclear, LLC		GE 4	NPF-57	07/25/1986	93
Hancocks Bridge, NJ		BECH		12/20/1986	80
(18 miles SE of Wilmington, DE)		BECH		07/20/2011	102
05000354				04/11/2046	83
https://www.nrc.gov/info-finder/reactors/hope.html					85
Indian Point Nuclear Generating, Unit 2	I	PWR-DRYAMB	3,216	10/14/1966	98
Entergy Nuclear Indian Point 2, LLC		WEST 4LP	DPR-26	09/28/1973	90
Buchanan, NY		UE&C		08/01/1974	77
(24 miles N of New York, NY)		WDCO		N/A	93
05000247				09/28/2013	77
https://www.nrc.gov/info-finder/reactors/ip2.html					53
Indian Point Nuclear Generating, Unit 3	I	PWR-DRYAMB	3,216	08/13/1969	90
Entergy Nuclear Indian Point 3, LLC		WEST 4LP	DPR-64	12/12/1975	100
Buchanan, NY		UE&C		08/30/1976	94
(24 miles N of New York, NY)		WDCO		N/A	98
05000286				12/12/2015	86
https://www.nrc.gov/info-finder/reactors/ip3.html					102
James A. FitzPatrick Nuclear Power Plant	I	BWR-MARK 1	2,536	05/20/1970	97
Entergy Nuclear FitzPatrick, LLC		GE 4	DPR-59	10/17/1974	84
Scriba, NY		S&W		07/28/1975	89
(6 miles NE of Oswego, NY)		S&W		09/08/2008	79
05000333				10/17/2034	96
https://www.nrc.gov/info-finder/reactors/fitz.html					76
Joseph M. Farley Nuclear Plant, Unit 1	II	PWR-DRYAMB	2,775	08/16/1972	101
Southern Nuclear Operating Co.		WEST 3LP	NPF-2	06/25/1977	91
Columbia, AL		SSI		12/01/1977	90
(18 miles E of Dothan, AL)		DANI		05/12/2005	102
05000348				06/25/2037	86
https://www.nrc.gov/info-finder/reactors/far1.html					86

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APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Joseph M. Farley Nuclear Plant, Unit 2	II	PWR-DRYAMB	2,775	08/16/1972	89
Southern Nuclear Operating Co.		WEST 3LP	NPF-8	03/31/1981	104
Columbia, AL		SSI		07/30/1981	91
(18 miles E of Dothan, AL)		BECH		05/12/2005	89
05000364				03/31/2041	98
https://www.nrc.gov/info-finder/reactors/far2.html					90
LaSalle County Station, Unit 1	III	BWR-MARK 2	3,546	09/10/1973	101
Exelon Generation Co., LLC		GE 5	NPF-11	04/17/1982	97
Marseilles, IL		S&L		01/01/1984	95
(11 miles SE of Ottawa, IL)		CWE		10/19/2016	93
05000373				04/17/2042	99
https://www.nrc.gov/info-finder/reactors/lasa1.html					89
LaSalle County Station, Unit 2	III	BWR-MARK 2	3,546	09/10/1973	96
Exelon Generation Co., LLC		GE 5	NPF-18	12/16/1983	103
Marseilles, IL		S&L		10/19/1984	88
(11 miles SE of Ottawa, IL)		CWE		10/19/2016	95
05000374				12/16/2043	83
https://www.nrc.gov/info-finder/reactors/lasa2.html					95
Limerick Generating Station, Unit 1	I	BWR-MARK 2	3,515	06/19/1974	96
Exelon Generation Co., LLC		GE 4	NPF-39	08/08/1985	85
Limerick, PA		BECH		02/01/1986	101
(21 miles NW of Philadelphia, PA)		BECH		N/A	91
05000352				10/26/2024	100
https://www.nrc.gov/info-finder/reactors/lim1.html					93
Limerick Generating Station, Unit 2	I	BWR-MARK 2	3,515	06/19/1974	90
Exelon Generation Co., LLC		GE 4	NPF-85	08/25/1989	95
Limerick, PA		BECH		01/08/1990	94
(21 miles NW of Philadelphia, PA)		BECH		N/A	99
05000353				06/22/2029	89
https://www.nrc.gov/info-finder/reactors/lim2.html					101
McGuire Nuclear Station, Unit 1	II	PWR-ICECND	3,411	02/23/1973	94
Duke Energy Carolinas, LLC		WEST 4LP	NPF-9	07/08/1981	105
Huntersville, NC		DUKE		12/01/1981	82
(17 miles N of Charlotte, NC)		DUKE		12/05/2003	82
05000369				06/12/2041	95
https://www.nrc.gov/info-finder/reactors/mcg1.html					89
McGuire Nuclear Station, Unit 2	II	PWR-ICECND	3,411	02/23/1973	91
Duke Energy Carolinas, LLC		WEST 4LP	NPF-17	05/27/1983	82
Huntersville, NC		DUKE		03/01/1984	95
(17 miles N of Charlotte, NC)		DUKE		12/05/2003	94
05000370				03/03/2043	87
https://www.nrc.gov/info-finder/reactors/mcg2.html					97

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APPENDIX A
Commercial Nuclear Power Reactors
Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Millstone Power Station, Unit 2	I	PWR-DRYAMB	2,700	12/11/1970	87
Dominion Nuclear Connecticut, Inc.		CE	DPR-65	09/26/1975	83
Waterford, CT		BECH		12/26/1975	95
(3.2 miles SW of New London, CT)		BECH		11/28/2005	85
05000336				07/31/2035	85
https://www.nrc.gov/info-finder/reactors/mill2.html					93
Millstone Power Station, Unit 3	I	PWR-DRYSUB	3,650	08/09/1974	87
Dominion Nuclear Connecticut, Inc.		WEST 4LP	NPF-49	01/31/1986	100
Waterford, CT		S&W		04/23/1986	87
(3.2 miles SW of New London, CT)		S&W		11/28/2005	87
05000423				11/25/2045	97
https://www.nrc.gov/info-finder/reactors/mill3.html					83
Monticello Nuclear Generating Plant, Unit 1	III	BWR-MARK 1	2,004	06/19/1967	69
Northern States Power Company-Minnesota		GE 3	DPR-22	01/09/1981[B]	101
Monticello, MN		BECH		06/30/1971	50
(30 miles NW of Minneapolis, MN)		BECH		11/08/2006	78
05000263				09/08/2030	78
https://www.nrc.gov/info-finder/reactors/mont.html					93
Nine Mile Point Nuclear Station, Unit 1	I	BWR-MARK 1	1,850	04/12/1965	84
Nine Mile Point Nuclear Station, LLC		GE 2	DPR-63	12/26/1974[C]	87
Scriba, NY		NIAG		12/01/1969	88
(6 miles NE of Oswego, NY)		S&W		10/31/2006	98
05000220				08/22/2029	88
https://www.nrc.gov/info-finder/reactors/nmp1.html					96
Nine Mile Point Nuclear Station, Unit 2	I	BWR-MARK 2	3,988	06/24/1974	95
Nine Mile Point Nuclear Station, LLC		GE 5	NPF-69	07/02/1987	83
Scriba, NY		S&W		03/11/1988	99
(6 miles NE of Oswego, NY)		S&W		10/31/2006	87
05000410				10/31/2046	100
https://www.nrc.gov/info-finder/reactors/nmp2.html					92
North Anna Power Station, Unit 1	II	PWR-DRYSUB	2,940	02/19/1971	78
Virginia Electric & Power Co.		WEST 3LP	NPF-4	04/01/1978	89
Mineral (Louisa County), VA		S&W		06/06/1978	89
(40 miles NW of Richmond, VA)		S&W		03/20/2003	100
05000338				04/01/2038	91
https://www.nrc.gov/info-finder/reactors/na1.html					89
North Anna Power Station, Unit 2	II	PWR-DRYSUB	2,940	02/19/1971	76
Virginia Electric & Power Co.		WEST 3LP	NPF-7	08/21/1980	99
Mineral (Louisa County), VA		S&W		12/14/1980	85
(40 miles NW of Richmond, VA)		S&W		03/20/2003	92
05000339				08/21/2040	99
https://www.nrc.gov/info-finder/reactors/na2.html					87

B: The AEC issued a provisional OL on 09/08/1970, allowing commercial operation. The NRC issued a full-term OL on 01/09/1981.
C: The AEC issued a provisional OL on 08/22/1969, allowing commercial operation. The NRC issued a full-term OL on 12/26/1974.

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APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Oconee Nuclear Station, Unit 1	II	PWR-DRYAMB	2,568	11/06/1967	79
Duke Energy Carolinas, LLC		B&W LLP	DPR-38	02/06/1973	90
Seneca, SC		DBDB		07/15/1973	91
(30 miles W of Greenville, SC)		DUKE		05/23/2000	91
05000269				02/06/2033	96
https://www.nrc.gov/info-finder/reactors/oco1.html					83
Oconee Nuclear Station, Unit 2	II	PWR-DRYAMB	2,568	11/06/1967	93
Duke Energy Carolinas, LLC		B&W LLP	DPR-47	10/06/1973	102
Seneca, SC		DBDB		09/09/1974	82
(30 miles W of Greenville, SC)		DUKE		05/23/2000	101
05000270				10/06/2033	89
https://www.nrc.gov/info-finder/reactors/oco2.html					98
Oconee Nuclear Station, Unit 3	II	PWR-DRYAMB	2,568	11/06/1967	103
Duke Energy Carolinas, LLC		B&W LLP	DPR-55	07/19/1974	86
Seneca, SC		DBDB		12/16/1974	97
(30 miles W of Greenville, SC)		DUKE		05/23/2000	92
05000287				07/19/2034	97
https://www.nrc.gov/info-finder/reactors/oco3.html					91
Oyster Creek Nuclear Generating Station	I	BWR-MARK 1	1,930	12/15/1964	98
Exelon Generation Co., LLC		GE 2	DPR-16	07/02/1991[D]	88
Forked River, NJ		B&R		12/23/1969	106
(9 miles S of Toms River, NJ)		B&R		04/08/2009	90
05000219				04/09/2029	109
https://www.nrc.gov/info-finder/reactors/oc.html					95
Palisades Nuclear Plant	III	PWR-DRYAMB	2,565.4	03/14/1967	96
Entergy Nuclear Operations, Inc.		CE	DPR-20	02/21/1991[E]	74
Covert, MI		BECH		12/31/1971	85
(5 miles S of South Haven, MI)		BECH		01/17/2007	86
05000255				03/24/2031	89
https://www.nrc.gov/info-finder/reactors/pali.html					99
Palo Verde Nuclear Generating Station, Unit 1	IV	PWR-DRYAMB	3,990	05/25/1976	83
Arizona Public Service Company		CE 80-2L	NPF-41	06/01/1985	100
Wintersburg, AZ		BECH		01/28/1986	85
(50 miles W of Phoenix, AZ)		BECH		04/21/2011	90
05000528				06/01/2045	94
https://www.nrc.gov/info-finder/reactors/palo1.html					83
Palo Verde Nuclear Generating Station, Unit 2	IV	PWR-DRYAMB	3,990	05/25/1976	91
Arizona Public Service Company		CE80-2L	NPF-51	04/24/1986	90
Wintersburg, AZ		BECH		09/19/1986	91
(50 miles W of Phoenix, AZ)		BECH		04/21/2011	90
05000529				04/24/2046	85
https://www.nrc.gov/info-finder/reactors/palo2.html					95

D: The AEC issued a provisional OL on 04/09/1969, allowing commercial operation. The NRC issued a full-term OL on 07/02/1991.

E: The AEC issued a provisional OL on 03/24/1971, allowing commercial operation. The NRC issued a full-term OL on 02/21/1991.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Palo Verde Nuclear Generating Station, Unit 3	IV	PWR-DRYAMB	3,990	05/25/1976	97
Arizona Public Service Company		CE80-2L	NPF-74	11/25/1987	88
Wintersburg, AZ		BECH		01/08/1988	79
(50 miles W of Phoenix, AZ)		BECH		04/21/2011	101
05000530				11/25/2047	85
https://www.nrc.gov/info-finder/reactors/palo3.html					85
Peach Bottom Atomic Power Station, Unit 2	I	BWR-MARK 1	3,514	01/31/1968	101
Exelon Generation Co., LLC		GE 4	DPR-44	10/25/1973	88
Delta, PA		BECH		07/05/1974	100
(17.9 miles S of Lancaster, PA)		BECH		05/07/2003	88
05000277				08/08/2033	99
https://www.nrc.gov/info-finder/reactors/pb2.html					96
Peach Bottom Atomic Power Station, Unit 3	I	BWR-MARK 1	3,514	01/31/1968	90
Exelon Generation Co., LLC		GE 4	DPR-56	07/02/1974	103
Delta, PA		BECH		12/23/1974	85
(17.9 miles S of Lancaster, PA)		BECH		05/07/2003	103
05000278				07/02/2034	75
https://www.nrc.gov/info-finder/reactors/pb3.html					95
Perry Nuclear Power Plant, Unit 1	III	BWR-MARK 3	3,758	05/03/1977	79
FirstEnergy Nuclear Operating Co.		GE 6	NPF-58	11/13/1986	92
Perry, OH		GIL		11/18/1987	73
(35 miles NE of Cleveland, OH)		KAIS		N/A	96
05000440				03/18/2026	83
https://www.nrc.gov/info-finder/reactors/perr1.html					91
Pilgrim Nuclear Power Station	I	BWR-MARK 1	2,028	08/26/1968	85
Entergy Nuclear Operations, Inc.		GE 3	DPR-35	06/08/1972	98
Plymouth, MA		BECH		12/01/1972	74
(38 miles SE of Boston, MA)		BECH		05/29/2012	97
05000293				06/08/2032	85
https://www.nrc.gov/info-finder/reactors/pilg.html					92
Point Beach Nuclear Plant, Unit 1	III	PWR-DRYAMB	1,800	07/19/1967	79
NextEra Energy Point Beach, LLC		WEST 2LP	DPR-24	10/05/1970	100
Two Rivers, WI		BECH		12/21/1970	84
(13 miles NW of Manitowoc, WI)		BECH		12/22/2005	90
05000266				10/05/2030	92
https://www.nrc.gov/info-finder/reactors/poin1.html					86
Point Beach Nuclear Plant, Unit 2	III	PWR-DRYAMB	1,800	07/25/1968	67
NextEra Energy Point Beach, LLC		WEST 2LP	DPR-27	03/08/1973[F]	89
Two Rivers, WI		BECH		10/01/1972	93
(13 miles NW of Manitowoc, WI)		BECH		12/22/2005	90
05000301				03/08/2033	94
https://www.nrc.gov/info-finder/reactors/poin2.html					86

F: AEC issued a provisional OL on 11/18/1971. The NRC issued a full-term OL on 03/08/1973.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Prairie Island Nuclear Generating Plant, Unit 1	III	PWR-DRYAMB	1,677	06/25/1968	91
Northern States Power Co.—Minnesota		WEST 2LP	DPR-42	04/05/1974[G]	81
Welch, MN		FLUR		12/16/1973	90
(28 miles SE of Minneapolis, MN)		NSP		06/27/2011	84
05000282				08/09/2033	77
https://www.nrc.gov/info-finder/reactors/prai1.html					81
Prairie Island Nuclear Generating Plant, Unit 2	III	PWR-DRYAMB	1,677	06/25/1968	99
Northern States Power Co.—Minnesota		WEST 2LP	DPR-35	10/29/1974	74
Welch, MN		FLUR		12/21/1974	59
(28 miles SE of Minneapolis, MN)		NSP		06/27/2011	101
05000306				10/29/2034	65
https://www.nrc.gov/info-finder/reactors/prai2.html					78
Quad Cities Nuclear Power Station, Unit 1	III	BWR-MARK 1	2,957	02/15/1967	92
Exelon Generation Co., LLC		GE 3	DPR-29	12/14/1972	102
Cordova, IL		S&L		02/18/1973	85
(20 miles NE of Moline, IL)		UE&C		10/28/2004	103
05000254				12/14/2032	83
https://www.nrc.gov/info-finder/reactors/quad1.html					92
Quad Cities Nuclear Power Station, Unit 2	III	BWR-MARK 1	2,957	02/15/1967	104
Exelon Generation Co., LLC		GE 3	DPR-30	12/14/1972	92
Cordova, IL		S&L		03/10/1973	91
(20 miles NE of Moline, IL)		UE&C		10/28/2004	90
05000265				12/14/2032	95
https://www.nrc.gov/info-finder/reactors/quad2.html					85
R.E. Ginna Nuclear Power Plant	I	PWR-DRYAMB	1,775	04/25/1966	84
R.E. Ginna Nuclear Power Plant, LLC		WEST 2LP	DPR-18	09/19/1969	90
Ontario, NY		GIL		07/01/1970	93
(20 miles NE of Rochester, NY)		BECH		05/19/2004	91
05000244				09/18/2029	89
https://www.nrc.gov/info-finder/reactors/ginn.html					94
River Bend Station, Unit 1	IV	BWR-MARK 3	3,091	03/25/1977	90
Entergy Nuclear Operations, Inc.		GE 6	NPF-47	11/20/1985	91
St. Francisville, LA		S&W		06/16/1986	84
(24 miles NW of Baton Rouge, LA)		S&W		N/A	96
05000458				08/29/2025	76
https://www.nrc.gov/info-finder/reactors/rbs1.html					78
St. Lucie Plant, Unit 1	II	PWR-DRYAMB	3,020	07/01/1970	85
Florida Power & Light Co.		CE	DPR-67	03/01/1976	72
Jensen Beach, FL		EBSO		12/21/1976	74
(10 miles SE of Ft. Pierce, FL)		EBSO		10/02/2003	101
05000335				03/01/2036	83
https://www.nrc.gov/info-finder/reactors/stl1.html					68

G: AEC issued a provisional OL on 08/09/1973. The NRC issued a full-term OL on 04/05/1974.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
St. Lucie Plant, Unit 2	II	PWR-DRYAMB	3,020	05/02/1977	66
Florida Power & Light Co.		CE	NPF-16	06/10/1983	68
Jensen Beach, FL		EBSO		08/08/1983	91
(10 miles SE of Ft. Pierce, FL)		EBSO		10/02/2003	82
05000389				04/06/2043	77
https://www.nrc.gov/info-finder/reactors/stl2.html					85
Salem Nuclear Generating Station, Unit 1	I	PWR-DRYAMB	3,459	09/25/1968	86
PSE&G Nuclear, LLC		WEST 4LP	DPR-70	12/01/1976	97
Hancocks Bridge, NJ		PSEG		06/30/1977	88
(18 miles SE of Wilmington, DE)		UE&C		06/30/2011	86
05000272				08/13/2036	95
https://www.nrc.gov/info-finder/reactors/salm1.html					99
Salem Nuclear Generating Station, Unit 2	I	PWR-DRYAMB	3,459	09/25/1968	89
PSE&G Nuclear, LLC		WEST 4LP	DPR-75	05/20/1981	88
Hancocks Bridge, NJ		PSEG		10/13/1981	100
(18 miles SE of Wilmington, DE)		UE&C		06/30/2011	73
05000311				04/18/2040	85
https://www.nrc.gov/info-finder/reactors/salm2.html					71
Seabrook Station, Unit 1	I	PWR-DRYAMB	3,648	07/07/1976	77
NextEra Energy Seabrook, LLC		WEST 4LP	NPF-86	03/15/1990	75
Seabrook, NH		UE&C		08/19/1990	100
(13 miles S of Portsmouth, NH)		UE&C		N/A	93
05000443				03/15/2030	87
https://www.nrc.gov/info-finder/reactors/seab1.html					90
Sequoyah Nuclear Plant, Unit 1	II	PWR-ICECND	3,455	05/27/1970	98
Tennessee Valley Authority		WEST 4LP	DPR-77	09/17/1980	89
Soddy-Daisy, TN		TVA		07/01/1981	83
(16 miles NE of Chattanooga, TN)		TVA		N/A	100
05000327				09/17/2020	87
https://www.nrc.gov/info-finder/reactors/seq1.html					90
Sequoyah Nuclear Plant, Unit 2	II	PWR-ICECND	3,455	05/27/1970	89
Tennessee Valley Authority		WEST 4LP	DPR-79	09/15/1981	77
Soddy-Daisy, TN		TVA		06/01/1982	90
(16 miles NE of Chattanooga, TN)		TVA		N/A	90
05000328				09/15/2021	73
https://www.nrc.gov/info-finder/reactors/seq2.html					95
Shearon Harris Nuclear Power Plant, Unit 1	II	PWR-DRYAMB	2,900	01/27/1978	103
Duke Energy Progress, Inc.		WEST 3LP	NPF-63	10/24/1986	90
New Hill, NC		EBSO		05/02/1987	83
(20 miles SW of Raleigh, NC)		DANI		12/17/2008	99
05000400				10/24/2046	87
https://www.nrc.gov/info-finder/reactors/har1.html					88

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APPENDIX A
Commercial Nuclear Power Reactors
Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
South Texas Project, Unit 1	IV	PWR-DRYAMB	3,853	12/22/1975	94
STP Nuclear Operating Co.		WEST 4LP	NPF-76	03/22/1988	93
Bay City, TX		BECH		08/25/1988	91
(90 miles SW of Houston, TX)		EBSO		09/28/2017	81
05000498				08/20/2047	78
https://www.nrc.gov/info-finder/reactors/stp1.html					73
South Texas Project, Unit 2	IV	PWR-DRYAMB	3,853	12/22/1975	88
STP Nuclear Operating Co.		WEST 4LP	NPF-80	03/28/1989	72
Bay City, TX		BECH		06/19/1989	59
(90 miles SW of Houston, TX)		EBSO		09/28/2017	103
05000499				12/15/2048	85
https://www.nrc.gov/info-finder/reactors/stp2.html					92
Surry Power Station, Unit 1	II	PWR-DRYSUB	2,587	06/25/1968	101
Virginia Electric and Power Co.		WEST 3LP	DPR-32	05/25/1972	92
Surry, VA		S&W		12/22/1972	91
(17 miles NW of Newport News, VA)		S&W		03/20/2003	99
05000280				05/25/2032	76
https://www.nrc.gov/info-finder/reactors/sur1.html					96
Surry Power Station, Unit 2	II	PWR-DRYSUB	2,587	06/25/1968	76
Virginia Electric and Power Co.		WEST 3LP	DPR-37	01/29/1973	91
Surry, VA		S&W		05/01/1973	101
(17 miles NW of Newport News, VA)		S&W		03/20/2003	95
05000281				01/29/2033	82
https://www.nrc.gov/info-finder/reactors/sur2.html					101
Susquehanna Steam Electric Station, Unit 1	I	BWR-MARK 2	3,952	11/03/1973	86
Susquehanna Nuclear, LLC		GE 4	NPF-14	07/17/1982	70
Berwick, PA		BECH		06/08/1983	87
(70 miles NE of Harrisburg, PA)		BECH		11/24/2009	83
05000387				07/17/2042	76
https://www.nrc.gov/info-finder/reactors/susq1.html					77
Susquehanna Steam Electric Station, Unit 2	I	BWR-MARK 2	3,952	11/03/1973	72
PPL Susquehanna, LLC		GE 4	NPF-22	03/23/1984	83
Berwick, PA		BECH		02/12/1985	80
(70 miles NE of Harrisburg, PA)		BECH		11/24/2009	88
05000388				03/23/2044	82
https://www.nrc.gov/info-finder/reactors/susq2.html					93
Three Mile Island Nuclear Station, Unit 1	I	PWR-DRYAMB	2,568	05/18/1968	92
Exelon Generation Co., LLC		B&W LLP	DPR-50	04/19/1974	100
Middletown, PA		GIL		09/02/1974	78
(10 miles SE of Harrisburg, PA)		UE&C		10/22/2009	104
05000289				04/19/2034	77
https://www.nrc.gov/info-finder/reactors/tmi1.html					82

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APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Turkey Point Nuclear Generating, Unit 3	II	PWR-DRYAMB	2,644	04/27/1967	96
Florida Power & Light Co.		WEST 3LP	DPR-31	07/19/1972	40
Homestead, FL		BECH		12/14/1972	81
(20 miles S of Miami, FL)		BECH		06/06/2002	84
05000250				07/19/2032	78
https://www.nrc.gov/info-finder/reactors/tp3.html					93
Turkey Point Nuclear Generating, Unit 4	II	PWR-DRYAMB	2,644	04/27/1967	84
Florida Power & Light Co.		WEST 3LP	DPR-41	04/10/1973	85
Homestead, FL		BECH		09/07/1973	70
(20 miles S of Miami, FL)		BECH		06/06/2002	88
05000251				04/10/2033	106
https://www.nrc.gov/info-finder/reactors/tp4.html					99
Virgil C. Summer Nuclear Station, Unit 1	II	PWR-DRYAMB	2,900	03/21/1973	88
South Carolina Electric & Gas Co.		WEST 3LP	NPF-12	11/12/1982	86
Jenkinsville, SC		GIL		01/01/1984	93
(26 miles NW of Columbia, SC)		DANI		04/23/2004	81
05000395				08/06/2042	79
https://www.nrc.gov/info-finder/reactors/sum.html					96
Vogtle Electric Generating Plant, Unit 1	II	PWR-DRYAMB	3,625.6	06/28/1974	92
Southern Nuclear Operating Co., Inc.		WEST 4LP	NPF-68	03/16/1987	91
Waynesboro, GA		SBEC		06/01/1987	101
(26 miles SE of Augusta, GA)		GPC		06/03/2009	87
05000424				01/16/2047	91
https://www.nrc.gov/info-finder/reactors/vog1.html					101
Vogtle Electric Generating Plant, Unit 2	II	PWR-DRYAMB	3,625.6	06/28/1974	94
Southern Nuclear Operating Co., Inc.		WEST 4LP	NPF-81	03/31/1989	102
Waynesboro, GA		SBEC		05/20/1989	87
(26 miles SE of Augusta, GA)		GPC		06/03/2009	92
05000425				02/09/2049	100
https://www.nrc.gov/info-finder/reactors/vog2.html					94
Waterford Steam Electric Station, Unit 3	IV	PWR-DRYAMB	3,716	11/14/1974	82
Entergy Operations, Inc.		COMB CE	NPF-38	03/16/1985	77
Killona, LA		EBSO		09/24/1985	89
(25 miles W of New Orleans, LA)		EBSO		N/A	90
05000382				12/18/2024	80
https://www.nrc.gov/info-finder/reactors/wat3.html					96
Watts Bar Nuclear Plant, Unit 1	II	PWR-ICECND	3,459	01/23/1973	84
Tennessee Valley Authority		WEST 4LP	NPF-90	02/07/1996	87
Spring City, TN		TVA		05/27/1996	90
(60 miles SW of Knoxville, TN)		TVA		N/A	89
05000390				11/09/2035	76
https://www.nrc.gov/info-finder/reactors/wb1.html					85

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APPENDIX A
Commercial Nuclear Power Reactors
Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Watts Bar Nuclear Plant, Unit 2	II	PWR-ICECND	3,411	01/24/1973	—
Tennessee Valley Authority		WEST 4LP	NPF-96	10/22/2015	—
Spring City, TN		TVA		10/19/2016	—
(60 miles SW of Knoxville, TN)		TVA		N/A	—
05000391				10/22/2055	0
https://www.nrc.gov/info-finder/reactors/wb2.html					26
Wolf Creek Generating Station, Unit 1	IV	PWR-DRYAMB	3,565	05/17/1977	72
Wolf Creek Nuclear Operating Corp.		WEST 4LP	NPF-42	06/04/1985[H]	80
Burlington (Coffey County), KS		BECH		09/03/1985	65
(28 miles SE of Emporia, KS)		DANI		11/20/2008	83
05000482				03/11/2045	78
https://www.nrc.gov/info-finder/reactors/wc.html					74

H: The original OL (NPF-32) was issued on 03/11/1985. The license was superseded by OL (NPF-42), issued on 06/04/1985.

Operating Reactors Under Active Construction or Deferred Policy

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Bellefonte Nuclear Power Station, Unit 1**	II	PWR-DRYAMB	3,763	12/24/1974	N/A
Tennessee Valley Authority		B&W 205			
(6 miles NE of Scottsboro, AL)		TVA			
05000438		TVA			
http://www.nrc.gov/reactors/new-reactors/col/bellefonte.html					
Bellefonte Nuclear Power Station, Unit 2**	II	PWR-DRYAMB	3,763	12/24/1974	N/A
Tennessee Valley Authority		B&W 205			
(6 miles NE of Scottsboro, AL)		TVA			
05000439		TVA			
http://www.nrc.gov/reactors/new-reactors/col/bellefonte.html					
Enrico Fermi Nuclear Plant, Unit 3	III	ESBWR	4,500		N/A
DTE Electric Company		GEH	NPF-95	05/01/2015	
Newport, MI					
(25 miles NE of Toledo, OH)					
05200033					
https://www.nrc.gov/reactors/new-reactors/col-holder/ferm3.html					
Levy County Nuclear Plant, Unit 1[A]	III	PWR	3,400		N/A
Duke Energy Florida, LLC		AP1000	NPF-99	10/26/2016	
Levy County, FL		WEST 2LP			
(2 miles NE of Inglis, FL)					
05200029					
https://www.nrc.gov/reactors/new-reactors/col-holder/levy1.html					

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APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors under Active Construction or Deferred Policy (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Levy County Nuclear Plant, Unit 2[A] Duke Energy FL, LLC Levy County, FL (2 miles NE of Inglis, FL) 05200030 *https://www.nrc.gov/reactors/new-reactors/col-holder/levy2.html*	III	PWR AP1000 WEST 2LP	3,400 NPF-100	10/26/2016	N/A
North Anna Power Station, Unit 3 Dominion Virginia Power Mineral (Louisa County), VA (40 miles NW of Richmond, VA) 05200017 *https://www.nrc.gov/reactors/new-reactors/col-holder/na3.html*	II	BWR ESBWR GEH	4,500 NPF-103	06/02/2017	N/A
South Texas Project, Unit 3 STP Nuclear Operating Co. Bay City, TX (90 miles SW of Houston, TX) 05200012 *https://www.nrc.gov/reactors/new-reactors/col-holder/stp3.html*	IV	BWR ABWR	3,926 NPF-97	02/12/2016	N/A
South Texas Project, Unit 4 STP Nuclear Operating Co. Bay City, TX (90 miles SW of Houston, TX) 05200013 *https://www.nrc.gov/reactors/new-reactors/col-holder/stp4.html*	IV	BWR ABWR	3,926 NPF-98	02/12/2016	N/A
Virgil C. Summer Nuclear Station, Unit 2[B] South Carolina Electric & Gas Co. South Carolina Public Service Auth. Jenkinsville (Fairfield County), SC (26 miles NW of Columbia, SC) 0520027 *https://www.nrc.gov/reactors/new-reactors/col-holder/sum2.html*	II	PWR AP1000 WEST 2LP	3,400 NPF-93	03/30/2012	N/A
Virgil C. Summer Nuclear Station, Unit 3[B] South Carolina Electric & Gas Co. South Carolina Public Service Auth. Jenkinsville (Fairfield County), SC (26 miles NW of Columbia, SC) 05200028 *https://www.nrc.gov/reactors/new-reactors/col-holder/sum3.html*	II	PWR AP1000 WEST 2LP	3,400 NPF-94	03/30/2012	N/A

A: In September 2017, Duke Energy Florida announced cancellation of Levy County nuclear power plant, Units 1 and 2 project.
B: On July 31, 2017, South Carolina Electric & Gas (SCE&G) to ceased construction on V.C. Summer nuclear power plant, Units 2 and 3.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors under Active Construction or Deferred Policy (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt	CP Issued COL Issued Comm. Op. LR Issued Exp. Date	2011–2016* Capacity Factor (Percent)
Vogtle Electric Generating Plant, Unit 3 Southern Nuclear Operating Co., Inc. Waynesboro (Burke County), GA (26 miles SE of Augusta, GA) 05200025 *https://www.nrc.gov/reactors/new-reactors/col-holder/vog3.html*	II	PWR AP1000 WEST 2LP	3,400 NPF-91	02/10/2012	N/A
Vogtle Electric Generating Plant, Unit 4 Southern Nuclear Operating Co., Inc. Waynesboro, (Burke County), GA (26 miles SE of Augusta, GA) 05200026 *https://www.nrc.gov/reactors/new-reactors/col-holder/vog4.html*	II	PWR AP1000 WEST 2LP	3,400 NPF-92	02/10/2012	N/A
William States Lee III Nuclear Station, Unit 3[C] Duke Energy Carolinas Cherokee County, SC (2 miles SE of Gafney, SC) 05200018 *https://www.nrc.gov/reactors/new-reactors/col-holder/lee1.html*	II	PWR AP1000 WEST 2LP	3,400 NPF-101	12/19/2016	N/A
William States Lee III Nuclear Station, Unit 4[C] Duke Energy Carolinas Cherokee County, SC (2 miles SE of Gafney, SC) 05200019 *https://www.nrc.gov/reactors/new-reactors/col-holder/lee2.html*	II	PWR AP1000 WEST 2LP	3,400 NPF-102	12/19/2016	N/A

C: In September 2017, Duke Energy announced cancellation of the William States Lee nuclear power plant, Units 3 and 4 project.
* Average capacity factor is listed in year order starting with 2009.
** Bellefonte Units 1 and 2 are under the Commission Policy Statement on Deferred Plants (52 FR 38077; October 14, 1987).
Note: Plant names and data are as identified on the license as of July 2017; the next printed update will be in August 2018.
Source: NRC, with some data compiled from U.S. Department of Energy's (DOE's) Energy Information Administration (EIA).

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX B
New Nuclear Power Plant Licensing Applications

Applicant	Docket Number	Type	Submittal Date	Design	Site	State	Existing Plant?	Date Accepted	Status
Combined Operating License									
Nuclear Innovation North America, LLC	05200012 & 05200013	COL	9/20/07	ABWR	South Texas Project, Units 3 and 4	TX	Yes	11/29/07	COL Issued 02/09/2016
Tennessee Valley Authority (TVA)	05200014 & 05200015	COL	10/30/07	AP1000	Bellefonte, Units 3 and 4	AL	No	1/18/08	Withdrawn–12/02/2016
Dominion Virginia Power	05200017	COL	11/27/07	ESBWR	North Anna, Unit 3	VA	Yes	01/28/08	COL Issued 06/02/2017
Duke Energy Carolinas	05200018 & 05200019	COL	12/13/07	AP1000	Lee Nuclear Station, Units 3 and 4	SC	No	2/25/08	COL Issued 12/19/2016
Progressive Energy	05200022 & 05200023	COL	2/19/08	AP1000	Shearon Harris, Units 2 and 3	NC	Yes	4/17/08	Suspended–05/02/2013
Southern Nuclear Operating Co.	05200025 & 05200026	COL	3/31/08	AP1000	Vogtle, Units 3 and 4	GA	Yes	5/30/08	COL Issued 02/10/2012
South Carolina Electric and Gas	05200027 & 05200028	COL	3/31/08	AP1000	V.C. Summer, Units 2 and 3	SC	Yes	7/31/08	COL Issued 03/30/2012
AmerenUE	05200037	COL	7/24/08	U.S. EPR	Callaway, Unit 2	MO	Yes	12/12/08	Withdrawn–10/19/2015
Duke Energy Florida	05200029 & 05200030	COL	7/30/08	AP1000	Levy County, Units 1 and 2	FL	No	10/6/08	COL Issued 10/26/2016
DTE Electric Company	05200033	COL	9/18/08	ESBWR	Fermi, Unit 3	MI	Yes	11/25/08	COL Issued 05/01/2015
Luminant Generation Co.	05200034 & 05200035	COL	9/19/08	US-APWR	Comanche Peak, Units 3 and 4	TX	Yes	12/2/08	Suspended–03/31/2014
Entergy	05200036	COL	9/25/08	ESBWR	River Bend, Unit 3	LA	Yes	12/4/08	Withdrawn–06/14/2016
PPL Bell Bend	05200039	COL	10/10/08	U.S. EPR	Bell Bend (1 Unit)	PA	Yes	12/19/08	Withdrawn–09/22/2016
Florida Power and Light	05200040 & 05200041	COL	6/30/09	AP1000	Turkey Point, Units 6 and 7	FL	Yes	9/4/09	Scheduled
Design Certification									
AREVA NP	05200020	DC	12/11/07	U.S. EPR	N/A	N/A	N/A	2/25/08	Suspended–03/27/2015
Mitsubishi Heavy Industries	05200021	DC	12/31/07	US-APWR	N/A	N/A	N/A	2/29/08	Applicant Delayed –Not Scheduled
Korea Electric Power Company and Korea Hydro and Nuclear Power	05200046	DC	12/23/14	APR 1400	N/A	N/A	N/A	3/4/15	Scheduled
Toshiba Corporation	05200044	DC	10/27/10	ABWR	N/A	N/A	N/A	12/14/10	Withdrawn–12/30/2016
GE-Hitachi Nuclear Energy	05200045	DC	12/7/10	ABWR	N/A	N/A	N/A	2/14/11	Scheduled
NuScale Power LLC	05200048	DC	01/06/17	NuScale	N/A	N/A	N/A	3/23/17	Scheduled
Early Site Permit									
PSEG Site	05200043	ESP	5/25/10	Not yet announced	PSEG Site	NJ	Yes	8/4/10	Issued 05/06/2016
TVA Clinch River SMR Site	05200043	ESP	5/25/10	Not yet announced	Clinch River Site	TN	No	1/12/17	Scheduled

Notes: Withdrawal was requested for Calvert Cliffs, Grand Gulf, Nine Mile Point, Victoria County, and Callaway (COL and ESP). On July 31, 2017, a decision was announced by South Carolina Electric & Gas (SCE&G) to cease construction on V.C. Summer nuclear power plant, Units 2 and 3. In September 2017, Duke Energy has announced cancellation of the William States Lee nuclear power plant, Units 3 and 4 project, and Levy County Units 1 and 2. Data are current as of October 2017; the next printed update will be in August 2018. NRC-abbreviated reactor names listed.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX C
Commercial Nuclear Power Reactors Undergoing Decommissioning and Permanently Shut Down Formerly Licensed To Operate

Unit Location Docket Number	Reactor Type MWt	NSSS Vendor	OL Issued Shut Down OL Terminated Closure Date Est.	Decommissioning Alternative Selected Current License Status
Big Rock Point Charlevoix, MI 05000155	BWR 240	GE	05/01/1964 08/29/1997 01/08/2007	DECON DECON Completed
Crystal River 3 Crystal River, FL 05000302	PWR 2,609	B&W LLP	12/03/1976 02/20/2013 2074	SAFSTOR SAFSTOR in Progress
Dresden 1 Morris, IL 05000010	BWR 700	GE	09/28/1959 10/31/1978 2036	SAFSTOR SAFSTOR
GE EVESR Sunol, CA 05000183	Experimental Superheat Reactor 12.5	GE	11/12/1963 02/1/1967 04/15/1970 01/1/2019	SAFSTOR Possession Only License Expires 01/2016
GE VBWR (Vallecitos) Sunol, CA 05000018	BWR 50	GE	08/31/1957 12/09/1963 2019	SAFSTOR SAFSTOR
Fermi 1 Newport, MI 05000016	SCF 200	CE	05/10/1963 09/22/1972 2032	SAFSTOR DECON
Fort Calhoun 1 Ft. Calhoun, NE 05000285	PWR–DRYAMB 1,500	CE	08/09/1973 10/24/2016 2065	SAFSTOR SAFSTOR in Progress
Fort St. Vrain Platteville, CO 05000267	HTG 842	GA	12/21/1973 08/18/1989 08/08/1997	DECON DECON Completed
Haddam Neck Meriden, CT 05000213	PWR 1,825	WEST	12/27/1974 12/05/1996 11/26/2007	DECON DECON Completed

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/.*

APPENDIX C
Commercial Nuclear Power Reactors Undergoing Decommissioning and Permanently Shut Down Formerly Licensed To Operate (continued)

Unit Location Docket Number	Reactor Type MWt	NSSS Vendor	OL Issued Shut Down OL Terminated Closure Date Est.	Decommissioning Alternative Selected Current License Status
Humboldt Bay 3 Eureka, CA 05000133	BWR 200	GE	08/28/1962 07/02/1976 2017	DECON DECON in Progress
Indian Point 1 Buchanan, NY 05000003	PWR 615	B&W	03/26/1962 10/31/1974 2026	SAFSTOR SAFSTOR
Kewaunee Carlton, WI 05000305	PWR 1,772	WEST 2LP	12/21/1973 05/07/2013 2073	SAFSTOR SAFSTOR
La Crosse Genoa, WI 05000409	BWR 165	AC	07/03/1967 04/30/1987 TBD	DECON DECON in Progress
Maine Yankee Wiscasset, ME 05000309	PWR 2,700	CE	06/29/1973 12/06/1996 09/30/2005	DECON DECON Completed
Millstone 1 Waterford, CT 05000245	BWR 2,011	GE	10/31/1970 07/21/1998 12/31/2056	SAFSTOR SAFSTOR
Pathfinder Sioux Falls, SD 05000130	BWR 190	AC	03/12/1964 09/16/1967 07/27/2007	DECON DECON Completed
Peach Bottom 1 Delta, PA 05000171	HTG 115	GA	01/24/1966 10/31/1974 12/31/2034	SAFSTOR SAFSTOR
Rancho Seco Herald, CA 05000312	PWR 2,772	B&W	08/16/1974 06/07/1989 09/25/2009	DECON DECON Completed
San Onofre 1* San Clemente, CA 05000206	PWR 1,347	WEST	03/27/1967 11/30/1992 12/30/2030	DECON SAFSTOR

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX C

Commercial Nuclear Power Reactors Undergoing Decommissioning and Permanently Shut Down Formerly Licensed To Operate (continued)

Unit Location Docket Number	Reactor Type MWt	NSSS Vendor	OL Issued Shut Down OL Terminated Closure Date Est.	Decommissioning Alternative Selected Current License Status
San Onofre 2* San Clemente, CA 05000361	PWR CE 3,438	CE	02/16/1982 06/12/2013 2030	DECON DECON in Progress
San Onofre 3 San Clemente, CA 05000362	PWR CE 3,438	CE	11/15/1982 06/12/2013 2030	DECON DECON in Progress
Savannah, N.S. Baltimore, MD 05000238	PWR 74	B&W	08/1965 11/1970 12/01/2031	SAFSTOR SAFSTOR
Saxton Saxton, PA 05000146	PWR 23.5	WEST	11/15/1961 05/01/1972 11/07/2005	DECON DECON Completed
Shoreham Wading River, NY 05000322	BWR 2,436	GE	04/21/1989 06/28/1989 04/11/1995	DECON DECON Completed
Three Mile Island 2 Middletown, PA 05000320	PWR 2,770	B&W	02/08/1978 03/28/1979 12/31/2036	**
Trojan Rainier, OR 05000344	PWR 3,411	WEST	11/21/1975 11/09/1992 05/23/2005	DECON DECON Completed
Yankee-Rowe Rowe, MA 05000029	PWR 600	WEST	12/24/1963 10/01/1991 08/10/2007	DECON DECON Completed
Vermont Yankee Vernon, VT 05000271	BWR-Mark 1 1,912	GE 4	03/21/1972 12/29/2014 2073	SAFSTOR SAFSTOR in Progress
Zion 1 Zion, IL 05000295	PWR 3,250	WEST	10/19/1973 02/21/1997	DECON DECON in Progress

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX C
Commercial Nuclear Power Reactors Undergoing Decommissioning and Permanently Shut Down Formerly Licensed To Operate (continued)

Unit Location Docket Number	Reactor Type MWt	NSSS Vendor	OL Issued Shut Down OL Terminated Closure Date Est.	Decommissioning Alternative Selected Current License Status
Zion 2 Zion, IL 05000304	PWR 3,250	WEST	11/14/1973 09/19/1996 2020	DECON DECON in Progress

* Site has been dismantled and decontaminated with the exception of the reactor vessel, which is in long-term storage.

** Three Mile Island Unit 2 has been placed in a postdefueling monitored storage mode until Unit 1 permanently ceases operation, at which time both units are planned to be decommissioned.

Notes: GE Bonus, Hallam, and Piqua decommissioned reactor sites are part of the DOE nuclear legacy. For more information, visit DOE's Legacy Management Web site at http://energy.gov/lm/sites/lm-sites. CVTR, Elk River, and Shippingport decommissioned reactor sites were either decommissioned prior to the formation of the NRC or were not licensed by the NRC.
See the Glossary for definitions of decommissioning alternatives (DECON, SAFSTOR).

Source: DOE, "Integrated Database for 1990, U.S. Spent Fuel and Radioactive Waste, Inventories, Projections, and Characteristics" (DOE/RW-0006, Rev. 6), and NRC, "Nuclear Power Plants in the World," Edition 6.

Data are current as of July 2017. The next printed update will be in August 2018.

APPENDIX D

Canceled Commercial Nuclear Power Reactors

Part 50—Domestic Licensing of Production and Utilization Facilities

Unit Utility Location	Con Type MWe per Unit	Canceled Date Status Docket Number
Allens Creek 1 Houston Lighting & Power Company 4 miles NW of Wallis, TX	BWR 1,150	1982 Under CP Review 05000466
Allens Creek 2 Houston Lighting & Power Company 4 miles NW of Wallis, TX	BWR 1,150	1976 Under CP Review 05000467
Atlantic 1 & 2 Public Service Electric & Gas Company Floating plants off the coast of NJ	PWR 1,150	1978 Under CP Review 05000477 & 478
Bailly 1 Northern Indiana Public Service Company 12 miles NNE of Gary, IN	BWR 645	1981 With CP 05000367
Barton 1 & 2 Alabama Power & Light 15 miles SE of Clanton, AL	BWR 1,159	1977 Under CP Review 05000524 & 525
Barton 3 & 4 Alabama Power & Light 15 miles SE of Clanton, AL	BWR 1,159	1975 Under CP Review 05000526 & 527
Black Fox 1 & 2 Public Service Company of Oklahoma 3.5 miles S of Inola, OK	BWR 1,150	1982 Under CP Review 05000556 & 557
Blue Hills 1 & 2 Gulf States Utilities Company SW tip of Toledo Bend Reservoir, TX	PWR 918	1978 Under CP Review 05000510 & 511
Cherokee 1 Duke Power Company 6 miles SSW of Blacksburg, SC	PWR 1,280	1983 With CP 05000491
Cherokee 2 & 3 Duke Power Company 6 miles SSW of Blacksburg, SC	PWR 1,280	1982 With CP 05000492 & 493
Clinch River Project Management Corp., DOE, TVA 23 miles W of Knoxville, in Oak Ridge, TN	LMFB 350	1983 Under CP Review 05000537
Clinton 2 Illinois Power Company 6 miles E of Clinton, IL	BWR 933	1983 With CP 05000462
Davis-Besse 2 & 3 Toledo Edison Company 21 miles ESE of Toledo, OH	PWR 906	1981 Under CP Review 05000500 & 501

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX D

Canceled Commercial Nuclear Power Reactors (continued)

Part 50—Domestic Licensing of Production and Utilization Facilities

Unit Utility Location	Con Type MWe per Unit	Canceled Date Status Docket Number
Douglas Point 1 & 2 Potomac Electric Power Company Charles County, MD	BWR 1,146	1977 Under CP Review 05000448 & 449
Erie 1 & 2 Ohio Edison Company Berlin, OH	PWR 1,260	1980 Under CP Review 05000580 & 581
Forked River 1 Jersey Central Power & Light Company 2 miles S of Forked River, NJ	PWR 1,070	1980 With CP 05000363
Fort Calhoun 2 Omaha Public Power District 19 miles N of Omaha, NE	PWR 1,136	1977 Under CP Review 05000548
Fulton 1 & 2 Philadelphia Electric Company 17 miles S of Lancaster, PA	HTG 1,160	1975 Under CP Review 05000463 & 464
Grand Gulf 2 Entergy Nuclear Operations, Inc. 20 miles SW of Vicksburg, MS	BWR 1,250	1990 With CP 05000417
Greene County Power Authority of the State of NY 20 miles N of Kingston, NY	PWR 1,191	1980 Under CP Review 05000549
Greenwood 2 & 3 Detroit Edison Company Greenwood Township, MI	PWR 1,200	1980 Under CP Review 05000452 & 453
Hartsville A1 & A2 Tennessee Valley Authority 5 miles SE of Hartsville, TN	BWR 1,233	1984 With CP 05000518 & 519
Hartsville B1 & B2 Tennessee Valley Authority 5 miles SE of Hartsville, TN	BWR 1,233	1982 With CP 05000520 & 521
Haven 1 (formerly Koshkonong) Wisconsin Electric Power Company 4.2 miles SSW of Fort Atkinson, WI	PWR 900	1980 Under CP Review 05000502
Haven 2 (formerly Koshkonong) Wisconsin Electric Power Company 4.2 miles SSW of Fort Atkinson, WI	PWR 900	1978 Under CP Review 05000503
Hope Creek 2 Public Service Electric & Gas Company 18 miles SE of Wilmington, DE	BWR 1,067	1981 With CP 05000355

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX D

Canceled Commercial Nuclear Power Reactors (continued)

Part 50—Domestic Licensing of Production and Utilization Facilities

Unit Utility Location	Con Type MWe per Unit	Canceled Date Status Docket Number
Jamesport 1 & 2 Long Island Lighting Company 65 miles E of New York City, NY	PWR 1,150	1980 With CP 05000516 & 517
Marble Hill 1 & 2 Public Service of Indiana 6 miles NE of New Washington, IN	PWR 1,130	1985 With CP 05000546 & 547
Midland 1 Consumers Power Company S of City of Midland, MI	PWR 492	1986 With CP 05000329
Midland 2 Consumers Power Company S of City of Midland, MI	PWR 818	1986 With CP 05000330
Montague 1 & 2 Northeast Nuclear Energy Company 1.2 miles SSE of Turners Falls, MA	BWR 1,150	1980 Under CP Review 05000496 & 497
New England 1 & 2 New England Power Company 8.5 miles E of Westerly, RI	PWR 1,194	1979 Under CP Review 05000568 & 569
New Haven 1 & 2 New York State Electric & Gas Corporation 3 miles NW of New Haven, NY	PWR 1,250	1980 Under CP Review 05000596 & 597
North Anna 3 Virginia Electric & Power Company 40 miles NW of Richmond, VA	PWR 907	1982 With CP 05000404
North Anna 4 Virginia Electric & Power Company 40 miles NW of Richmond, VA	PWR 907	1980 With CP 05000405
North Coast 1 Puerto Rico Water Resources Authority 4.7 miles ESE of Salinas, PR	PWR 583	1978 Under CP Review 05000376
Palo Verde 4 & 5 Arizona Public Service Company 36 miles W of Phoenix, AZ	PWR 1,270	1979 Under CP Review 05000592 & 593
Pebble Springs 1 & 2 Portland General Electric Company 55 miles WSW of Richland, WA, near Arlington, OR	PWR 1,260	1982 Under CP Review 05000514 & 515
Perkins 1, 2, & 3 Duke Power Company 10 miles N of Salisbury, NC	PWR 1,280	1982 Under CP Review 05000488, 489 & 490

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX D

Canceled Commercial Nuclear Power Reactors (continued)

Part 50—Domestic Licensing of Production and Utilization Facilities

Unit Utility Location	Con Type MWe per Unit	Canceled Date Status Docket Number
Perry 2 Cleveland Electric Illuminating Co. 35 miles NE of Cleveland, OH	BWR 1,205	1994 Under CP Review 05000441
Phipps Bend 1 & 2 Tennessee Valley Authority 15 miles SW of Kingsport, TN	BWR 1,220	1982 With CP 05000553 & 554
Pilgrim 2 Boston Edison Company 4 miles SE of Plymouth, MA	PWR 1,180	1981 Under CP Review 05000471
Pilgrim 3 Boston Edison Company 4 miles SE of Plymouth, MA	PWR 1,180	1974 Under CP Review 05000472
Quanicassee 1 & 2 Consumers Power Company 6 miles E of Essexville, MI	PWR 1,150	1974 Under CP Review 05000475 & 476
River Bend 2 Gulf States Utilities Company 24 miles NNW of Baton Rouge, LA	BWR 934	1984 With CP 05000459
Seabrook 2 Public Service Co. of New Hampshire 13 miles S of Portsmouth, NH	PWR 1,198	1988 With CP 05000444
Shearon Harris 2 Carolina Power & Light Company 20 miles SW of Raleigh, NC	PWR 900	1983 With CP 05000401
Shearon Harris 3 & 4 Carolina Power & Light Company 20 miles SW of Raleigh, NC	PWR 900	1981 With CP 05000402 & 403
Skagit/Hanford 1 & 2 Puget Sound Power & Light Company 23 miles SE of Bellingham, WA	PWR 1,277	1983 Under CP Review 05000522 & 523
Sterling Rochester Gas & Electric Corporation 50 miles E of Rochester, NY	PWR 1,150	1980 With CP 05000485
Summit 1 & 2 Delmarva Power & Light Company 15 miles SSW of Wilmington, DE	HTG 1,200	1975 Under CP Review 05000450 & 451
Sundesert 1 & 2 San Diego Gas & Electric Company 16 miles SW of Blythe, CA	PWR 974	1978 Under CP Review 05000582 & 583

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX D

Canceled Commercial Nuclear Power Reactors (continued)

Part 50—Domestic Licensing of Production and Utilization Facilities

Unit Utility Location	Con Type MWe per Unit	Canceled Date Status Docket Number
Surry 3 & 4 Virginia Electric & Power Company 17 miles NW of Newport News, VA	PWR 882	1977 With CP 05000434 & 435
Tyrone 1 Northern States Power Company 8 miles NE of Durond, WI	PWR 1,150	1981 Under CP Review 05000484
Tyrone 2 Northern States Power Company 8 miles NE of Durond, WI	PWR 1,150	1974 With CP 05000487
Vogtle 3 & 4 Georgia Power Company 26 miles SE of Augusta, GA	PWR 1,113	1974 With CP 050000426 & 427
Washington Nuclear 1 (WPPSS) Energy Northwest 12 miles NE of Richland, WA	PWR 1,266	1995 With CP 05000460
Washington Nuclear 3 (WPPSS) Energy Northwest 12 miles NE of Richland, WA	PWR 1,242	1995 With CP 05000508
Washington Nuclear 4 (WPPSS) Energy Northwest 12 miles NE of Richland, WA	PWR 1,218	1982 With CP 05000513
Washington Nuclear 5 (WPPSS) Energy Northwest 12 miles NE of Richland, WA	PWR 1,242	1982 With CP 05000509
Yellow Creek 1 & 2 Tennessee Valley Authority 15 miles E of Corinth, MS	BWR 1,285	1984 With CP 05000566 & 567
Zimmer 1 Cincinnati Gas & Electric Company 25 miles SE of Cincinnati, OH	BWR 810	1984 With CP 05000358
Bellefonte 3 & 4 Tennessee Valley Authority Scottsboro, Jackson County, AL	AP1000 1,100	2016 With COL 05200014 & 05200015
Bell Bend Bell Bend, LLC Luzerne County, PA	U.S. EPR 1,600	2016 With COL 5200039

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX D

Canceled Commercial Nuclear Power Reactors (continued)

Part 52—Licensing, Certification, and Approvals for Nuclear Power Plants

Unit Utility Location	Con Type MWe per Unit	Canceled Date Status Docket Number
Callaway 2 Union Electric Company (Ameren UE) Fulton, Callaway County , MO	U.S. EPR 1,600	2015 With COL 05200037
Calvert Cliffs 3 UniStar Nuclear Operating Services, LLC Near Lusby in Calvert County, MD	U.S. EPR 4,500	July 17, 2015 With COL Review 05200016
Grand Gulf 3 Entergy Operations, Inc. Near Port Gibson in Claiborne County, MS	ESBWR 4,500	January 9, 2009 With COL Review 05200024
Nine Mile Point 3 UniStar Nuclear Operating Services, LLC 25 miles SE of Cincinnati, OH	ESBWR 4,500	January 9, 2009 With COL Review 0500038
River Bend 3 Entergy Operations, Inc. St. Francisville, LA	ESBWR 1,594	2016 With COL 5200036
Victoria County Station 1 and 2 Exelon Nuclear Texas Holdings, LLC Near Victoria City in Victoria County, TX	ESBWR 4,500	June 11, 2010 With COL Review 05200031 & 05200032

Notes: Cancellation is defined as public announcement of cancellation or written notification to the NRC. Only NRC-docketed applications are included. “Status” is the status of the application at the time of cancellation.

Data are current as of July 2017; the next printed update will be in August 2018.

Withdrawal was requested for Calvert Cliffs, Grand Gulf, Nine Mile Point, Victoria County, and Callaway (COL and ESP). NRC-abbreviated reactor names listed.

Source: DOE/EIA, “Commercial Nuclear Power 1991,” DOE/EIA-0438, Appendix E, and the NRC.

APPENDIX E
Commercial Nuclear Power Reactors by Parent Company

Utility	NRC-Abbreviated Reactor Unit Name
AmerenUE *www.ameren.com*	Callaway*
Arizona Public Service Company *www.aps.com*	Palo Verde 1, 2, & 3*
Dominion Generation *www.dom.com*	Millstone 2 & 3 North Anna 1 & 2 Surry 1 & 2
DTE Electric Company *www.dteenergy.com*	Fermi 2
Duke Energy *www.duke-energy.com*	Brunswick 1 & 2 Catawba 1 & 2 Harris 1 McGuire 1 & 2 Oconee 1, 2, & 3 Robinson 2
Energy Northwest *www.energy-northwest.com*	Columbia
Entergy Nuclear Operations, Inc. *www.entergy-nuclear.com*	Arkansas Nuclear One 1 & 2 FitzPatrick Grand Gulf 1 Indian Point 2 & 3 Palisades Pilgrim 1 River Bend 1 Waterford 3
Exelon Corporation, LLC *www.exeloncorp.com*	Braidwood 1 & 2 Byron 1 & 2 Calvert Cliffs 1 & 2 Clinton Dresden 2 & 3 Ginna LaSalle 1 & 2 Limerick 1 & 2 Nine Mile Point 1 & 2 Oyster Creek Peach Bottom 2 & 3 Quad Cities 1 & 2 Three Mile Island 1
First Energy Nuclear Operating Company *www.firstenergycorp.com*	Beaver Valley 1 & 2 Davis-Besse Perry 1

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/.*

APPENDIX E

Commercial Nuclear Power Reactors by Parent Company (continued)

Utility	NRC-Abbreviated Reactor Unit Name
Indiana Michigan Power Company *www.indianamichiganpower.com*	Cook 1 & 2
Nebraska Public Power District *www.nppd.com*	Cooper
NextEra Energy Inc. with principal subsidiaries Florida Power & Light Co. and NextEra Energy Resources, LLC *www.fplgroup.com*	Duane Arnold Point Beach 1 & 2 Seabrook 1 St. Lucie 1 & 2 Turkey Point 3 & 4
Northern States Power Company Minnesota doing business as Xcel Energy *www.xcelenergy.com*	Monticello Prairie Island 1 & 2
Pacific Gas & Electric Company *www.pge.com*	Diablo Canyon 1 & 2*
PSEG Nuclear, LLC *www.pseg.com*	Hope Creek 1 Salem 1 & 2
South Carolina Electric & Gas Company *www.sceg.com*	Summer
Southern Nuclear Operating Company *www.southerncompany.com*	Farley 1 & 2 Hatch 1 & 2 Vogtle 1 & 2
STP Nuclear Operating Company *www.stpegs.com*	South Texas Project 1 & 2*
Talen Energy Corp. *www.talenenergy.com*	Susquehanna 1 & 2
Tennessee Valley Authority *www.tva.gov*	Browns Ferry 1, 2, & 3 Sequoyah 1 & 2 Watts Bar 1 & 2
Vistra Energy *www.vistraenergy.com*	Comanche Peak 1 & 2*
Wolf Creek Nuclear Operating Corporation *www.wcnoc.com*	Wolf Creek 1*

* These plants have a joint program called the Strategic Teaming and Resource Sharing group. They share resources for refueling outages and develop some shared licensing applications.

Note: Data are current as of July 2017; the next printed update will be in August 2018.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX F

Commercial Nuclear Power Reactor Operating Licenses—Issued by Year

1969	Dresden 2*
	Ginna*
	Nine Mile Point 1*
	Oyster Creek*
1970	Point Beach 1*
	Robinson 2
1971	Dresden 3
	Monticello*
1972	Palisades*
	Pilgrim
	Quad Cities 1
	Quad Cities 2
	Surry 1
	Turkey Point 3
1973	Browns Ferry 1
	Indian Point 2
	Oconee 1
	Oconee 2
	Peach Bottom 2
	Point Beach 2*
	Surry 2
	Turkey Point 4
1974	Arkansas Nuclear 1
	Browns Ferry 2
	Brunswick 2
	Calvert Cliffs 1
	Cooper
	Cook 1
	Duane Arnold
	FitzPatrick
	Hatch 1
	Oconee 3
	Peach Bottom 3
	Prairie Island 1
	Prairie Island 2
	Three Mile Island 1
1975	Millstone 2
1976	Beaver Valley 1
	Browns Ferry 3
	Brunswick 1
	Calvert Cliffs 2
	Indian Point 3
	Salem 1
	St. Lucie 1
1977	Davis-Besse
	D.C. Cook 2
	Farley 1
1978	Arkansas Nuclear 2
	Hatch 2
	North Anna 1
1980	North Anna 2
	Sequoyah 1
1981	Farley 2
	McGuire 1
	Salem 2
	Sequoyah 2
1982	LaSalle 1
	Summer
	Susquehanna 1
1983	McGuire 2
	St. Lucie 2
1984	Callaway
	Columbia
	Diablo Canyon 1
	Grand Gulf 1
	LaSalle 2
	Susquehanna 2
1985	Byron 1
	Catawba 1
	Diablo Canyon 2
	Fermi 2
	Limerick 1
	Palo Verde 1
	River Bend 1
	Waterford 3
	Wolf Creek 1
1986	Catawba 2
	Hope Creek 1
	Millstone 3
	Palo Verde 2
	Perry 1
1987	Beaver Valley 2
	Braidwood 1
	Byron 2
	Clinton
	Harris 1
	Nine Mile Point 2
	Palo Verde 3
	Vogtle 1
1988	Braidwood 2
	South Texas Project 1
1989	Limerick 2
	South Texas Project 2
	Vogtle 2
1990	Comanche Peak 1
	Seabrook 1
1993	Comanche Peak 2
1996	Watts Bar 1

* AEC Issued a provisional operating license allowing commercial operations.

Notes: This list is limited to reactors licensed to operate. Year is based on the date the initial full-power operating license was issued. NRC-abbreviated reactor names are listed. Data are current as of July 2017; the next printed update will be in August 2018.

APPENDIX G

Commercial Nuclear Power Reactor Operating Licenses—Expiration by Year, 2013–2055

2013	Indian Point 2
2015	Indian Point 3
2024	Diablo Canyon 1
	Waterford 3
2025	Diablo Canyon 2
	River Bend 1
2026	Clinton
	Perry
2029	Ginna
	Nine Mile Point 1
	Oyster Creek
2030	Comanche Peak 1
	Monticello
	Point Beach 1
	Robinson 2
	Seabrook
2031	Dresden 3
	Palisades
2032	Pilgrim
	Quad Cities 1
	Quad Cities 2
	Surry 1
	Turkey Point 3
2033	Browns Ferry 1
	Comanche Peak 2
	Fort Calhoun
	Oconee 1
	Oconee 2
	Peach Bottom 2
	Point Beach 2
	Prairie Island 1
	Surry 2
	Turkey Point 4
2034	Arkansas Nuclear 1
	Browns Ferry 2
	Brunswick 2
	Calvert Cliffs 1
	Cook 1
	Cooper
	Duane Arnold
	Hatch 1
	FitzPatrick
	Oconee 3
	Peach Bottom 3
	Prairie Island 2
	Three Mile Island 1
2035	Millstone 2
	Watts Bar 1
2036	Beaver Valley 1
	Browns Ferry 3
	Brunswick 1
	Calvert Cliffs 2
	St. Lucie 1
	Salem 1
2037	Cook 2
	Davis-Besse 1
	Farley 1
2038	Arkansas Nuclear 2
	Hatch 2
	North Anna 1
2040	North Anna 2
	Salem 2
	Sequoyah 1
2041	Farley 2
	McGuire 1
	Sequoyah 2
2042	LaSalle 1
	Summer
	Susquehanna 1
2043	Catawba 1
	Catawba 2
	Columbia
	LaSalle 2
	McGuire 2
	St. Lucie 2
2044	Byron 1
	Calloway
	Grand Gulf 1
	Limerick 1
	Susquehanna 2
2045	Fermi 2
	Millstone 3
	Palo Verde 1
	Wolf Creek 1
2046	Braidwood 1
	Byron 2
	Harris 1
	Hope Creek
	Nine Mile Point 2
	Palo Verde 2
2047	Beaver Valley 2
	Braidwood 2
	Palo Verde 3
	South Texas Project 1
	Vogtle 1
2048	South Texas Project 2
2049	Limerick 2
	Vogtle 2
2055	Watts Bar 2

Notes: This list includes Indian Point 2 & 3, which entered timely renewal on September 29, 2013, and December 12, 2015. Limited to reactors licensed to operate. NRC-abbreviated reactor names listed. Data are current as of October 2017; the next printed update will be in August 2018.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX H
Operating Nuclear Research and Test Reactors Regulated by the NRC

Licensee Location	Reactor Type OL Issued	Power Level (kW)	Licensee Number Docket Number
Aerotest San Ramon, CA	TRIGA (Indus) 07/02/1965	250	R-98 05000228
Armed Forces Radiobiology Research Institute Bethesda, MD	TRIGA 06/26/1962	1,100	R-84 05000170
Dow Chemical Company Midland, MI	TRIGA 07/03/1967	300	R-108 05000264
GE-Hitachi Sunol, CA	Tank 10/31/1957	100	R-33 05000073
Idaho State University Pocatello, ID	AGN-201 #103 10/11/1967	0.005	R-110 05000284
Kansas State University Manhattan, KS	TRIGA 10/16/1962	250	R-88 05000188
Massachusetts Institute of Technology Cambridge, MA	HWR Reflected 06/09/1958	6,000	R-37 05000020
Missouri University of Science and Technology Rolla, MO	Pool 11/21/1961	200	R-79 05000123
National Institute of Standards & Technology Gaithersburg, MD	Nuclear Test 05/21/1970	20,000	TR-5 05000184
North Carolina State University Raleigh, NC	Pulstar 08/25/1972	1,000	R-120 05000297
Ohio State University Columbus, OH	Pool 02/24/1961	500	R-75 05000150
Oregon State University Corvallis, OR	TRIGA Mark II 03/07/1967	1,100	R-106 05000243
Pennsylvania State University State College, PA	TRIGA 07/08/1955	1,100	R-2 05000005
Purdue University West Lafayette, IN	Lockheed 08/16/1962	12	R-87 05000182
Reed College Portland, OR	TRIGA Mark I 07/02/1968	250	R-112 05000288

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX H
Operating Nuclear Research and Test Reactors Regulated by the NRC (continued)

Licensee Location	Reactor Type OL Issued	Power Level (kW)	Licensee Number Docket Number
Rensselaer Polytechnic Institute Troy, NY	Critical Assembly 07/03/1964	0.1	CX-22 05000225
Rhode Island Atomic Energy Commission Narragansett, RI	GE Pool 07/23/1964	2,000	R-95 05000193
Texas A&M University College Station, TX	AGN-201M #106 08/26/1957	0.005	R-23 05000059
Texas A&M University College Station, TX	TRIGA 12/07/1961	1,000	R-83 05000128
U.S. Geological Survey Denver, CO	TRIGA Mark I 02/24/1969	1,000	R-113 05000274
University of California/Davis Sacramento, CA	TRIGA 08/13/1998	2,300	R-130 05000607
University of California/Irvine Irvine, CA	TRIGA Mark I 11/24/1969	250	R-116 05000326
University of Florida Gainesville, FL	Argonaut 05/21/1959	100	R-56 05000083
University of Maryland College Park, MD	TRIGA 10/14/1960	250	R-70 05000166
University of Massachusetts/Lowell Lowell, MA	GE Pool 12/24/1974	1,000	R-125 05000223
University of Missouri/Columbia Columbia, MO	Tank 10/11/1966	10,000	R-103 05000186
University of New Mexico Albuquerque, NM	AGN-201M #112 09/17/1966	0.005	R-102 05000252
University of Texas Austin, TX	TRIGA Mark II 01/17/1992	1,100	R-129 05000602
University of Utah Salt Lake City, UT	TRIGA Mark I 09/30/1975	100	R-126 05000407
University of Wisconsin Madison, WI	TRIGA 11/23/1960	1,000	R-74 05000156
Washington State University Pullman, WA	TRIGA 03/06/1961	1,000	R-76 05000027

Note: Data are current as of July 2017; the next printed update will be in August 2018.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX I

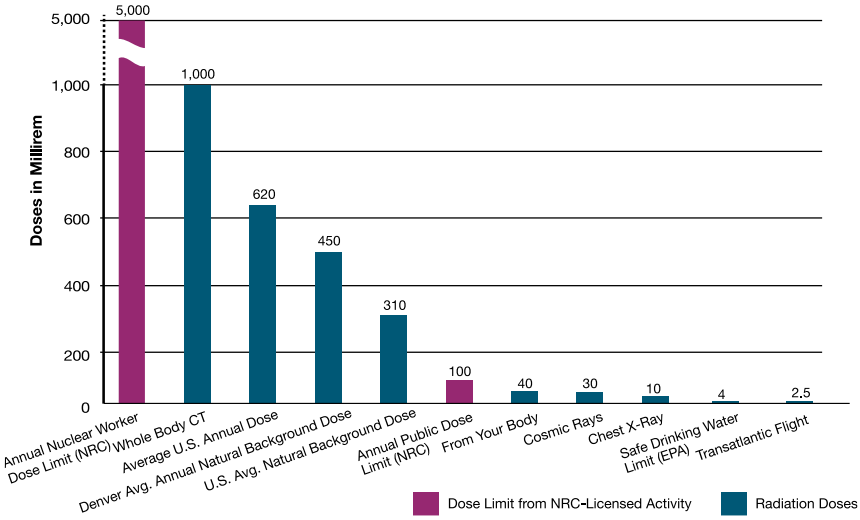
Nuclear Research and Test Reactors under Decommissioning Regulated by the NRC

Licensee Location	Reactor Type Power Level (kW)	OL Issued Shutdown
General Atomics San Diego, CA	TRIGA Mark F 1,500	07/01/60 09/07/94
General Atomics San Diego, CA	TRIGA Mark I 250	05/03/58 12/17/96
General Electric Company Sunol, CA	GETR (Tank) 50,000	01/07/59 06/26/85
University of Buffalo Buffalo, NY	Pulstar 2,000	03/24/61 07/23/96

Note: Data are current as of July 2017; the next printed update will be in August 2018.

APPENDIX J

Radiation Doses and Regulatory Limits



For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/.*

APPENDIX K
Materials Licenses by State

State	Number of Licenses NRC	Number of Licenses Agreement States
Alabama	16	388
Alaska	66	0
Arizona	11	339
Arkansas	6	208
California	59	1,762
Colorado	19	319
Connecticut	138	0
Delaware	43	0
District of Columbia	32	0
Florida	26	1,620
Georgia	22	414
Hawaii	58	0
Idaho	73	0
Illinois	32	625
Indiana	239	0
Iowa	2	164
Kansas	13	272
Kentucky	12	364
Louisiana	10	459
Maine	4	103
Maryland	82	537
Massachusetts	31	424
Michigan	430	0
Minnesota	15	136
Mississippi	7	286
Missouri	246	0
Montana	84	0
Nebraska	5	140
Nevada	2	242
New Hampshire	3	86
New Jersey	35	573
New Mexico	13	214
New York	22	1,310
North Carolina	24	578
North Dakota	4	89
Ohio	41	593
Oklahoma	16	231
Oregon	5	271
Pennsylvania	46	631
Rhode Island	2	44
South Carolina	15	364
South Dakota	36	0
Tennessee	22	526
Texas	47	1,493
Utah	10	190
Vermont	33	0
Virginia	57	398
Washington	16	332
West Virginia	161	0
Wisconsin	12	292
Wyoming	87	0
Puerto Rico	117	0
Virgin Islands	8	0
Guam	7	0

Total number of materials licenses in Agreement State jurisdiction	17,017
Total number of materials licenses in NRC jurisdiction	2,622
Total number of materials licenses in the United States	19,639

Agreement State | Letter of Intent | Draft Application

Notes: The NRC and Agreement State data are as of July 2017. These totals represent an estimate because the number of specific radioactive materials licenses per State may change daily. Data are current as of July 2017. The next printed update will be in August 2018.

The NRC licenses Federal agencies in Agreement States.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/.*

APPENDIX L
Major U.S. Fuel Cycle Facility Sites

Licensee	Location	Status	Docket #
Uranium Hexafluoride Conversion Facility			
Honeywell International, Inc.	Metropolis, IL	active	04003392
Uranium Fuel Fabrication Facilities			
Global Nuclear Fuel-Americas, LLC	Wilmington, NC	active	07001139
Westinghouse Electric Company, LLC Columbia Fuel Fabrication Facility	Columbia, SC	active	07001151
Nuclear Fuel Services, Inc.	Erwin, TN	active	07000143
BWXT Nuclear Operations Group, Inc.	Lynchburg, VA	active	07000027
AREVA, Inc.	Richland, WA	active	07001257
Mixed-Oxide Fuel Fabrication Facility			
CB&I AREVA MOX Services, LLC	Aiken, SC	construction	07003098
Gas Centrifuge Uranium Enrichment Facilities			
Centrus Energy Corp. Lead Cascade: Test and Demonstration Facility	Piketon, OH	transitioning into decommissiong	07007003
Centrus Energy Corp American Centrifuge Plant	Piketon, OH	license issued, construction halted	07007004
URENCO-USA (Louisiana Energy Services)	Eunice, NM	active	07003103
AREVA Enrichment Services, LLC Eagle Rock Enrichment Facilities	Idaho Falls, ID	license issued,* construction not started	07007015
Laser Separation Enrichment Facility			
GE-Hitachi Global Laser Enrichment, LLC	Wilmington, NC	license issued, construction not started	07007016
Uranium Hexafluoride Deconversion Facility			
International Isotopes, Inc.	Hobbs, NM (Lea County)	license issued, construction not started	04009086

* Operating and producing enriched uranium while undergoing further phases of construction.

Note: Data are current as of July 2017; the next printed update will be in August 2018.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX M
Dry Spent Fuel Storage Designs: NRC-Approved for Use by General Licensees

Vendor	Docket #	Storage Design Model
General Nuclear Systems, Inc.	07201000	CASTOR V/21 (expired)
NAC International, Inc.	07201002	NAC S/T (expired)
	07201003	NAC-C28 S/T (expired)
	07201015	NAC-UMS
	07201025	NAC-MPC
	07201031	Magnastor
	07201013	NAC-STC
Holtec International	07201008	HI-STAR 100
	07201014	HI-STORM 100
	07201032	HI-STORM FW
	07201040	HI-STORM UMAX
EnergySolutions, Inc.	07201007	VSC-24
	07201026	Fuel Solutions™ (WSNF-220, -221, -223)
		W-150 Storage Cask
		W-100 Transfer Cask
		W-21, W-74 Canisters
Transnuclear, Inc.	07201005	TN-24 (expired)
	07201027	TN-68
	07201021	TN-32
	07201004	Standardized NUHOMS®-24P, -24PHB, -24PTH, -32PT, -32PTH1, -37PTH, -52B, -61BT, -61BTH, -69BTH
	07201029	Standardized Advanced NUHOMS®-24PT1, -24PT4
	07201030	NUHOMS® HD-32PTH

Note: Data are current as of July 2017; the next printed update will be in August 2018. (See latest list on the NRC Web site at *https://www.nrc.gov/waste/spent-fuel-storage/designs.html*.)

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX N
Dry Cask Spent Fuel Storage Licensees

Name Licensee	License Type	Vendor	Storage Model	Docket Number
Arkansas Nuclear Entergy Nuclear Operations, Inc.	GL	Energy Solutions, Inc. Holtec International	VSC-24 HI-STORM 100	07200013
Beaver Valley FirstEnergy Nuclear Operating Company	GL	Transnuclear, Inc.	NUHOMS®-37PTH	07201043
Big Rock Point Entergy Nuclear Operations, Inc.	GL	Energy Solutions, Inc.	Fuel Solutions™ W74	07200043
Braidwood Exelon Generation Co., LLC	GL	Holtec International	HI-STORM 100	07200073
Browns Ferry Tennessee Valley Authority	GL	Holtec International	HI-STORM 100S	07200052
Brunswick Carolina Power Co.	GL	Transnuclear, Inc.	NUHOMS®-HD-61BTH	07200006
Byron Exelon Generation Co., LLC	GL	Holtec International	HI-STORM 100	07200068
Callaway Union Electric Co. Ameren Missouri	GL	Holtec International	HI-STORM UMAX	07201045
Calvert Cliffs Calvert Cliffs Nuclear Power Plant, Inc.	SL	Transnuclear, Inc.	NUHOMS®-24P NUHOMS®-32P	07200008
Catawba Duke Energy Carolinas, LLC	GL	NAC International, Inc.	NAC-UMS	07200045
Columbia Generating Station Energy Northwest	GL	Holtec International	HI-STORM 100	07200035
Comanche Peak Luminant Generation Company, LLC	GL	Holtec International	HI-STORM 100	07200074
Cook Indiana/Michigan Power	GL	Holtec International	HI-STORM	07200072
Cooper Nuclear Station Nebraska Public Power District	GL	Transnuclear, Inc.	NUHOMS®-61BT	07200066
Davis-Besse FirstEnergy Nuclear Operating Company	GL	Transnuclear, Inc.	NUHOMS®-24P	07200014
Diablo Canyon Pacific Gas & Electric Co.	SL	Holtec International	HI-STORM 100	07200026
Dresden Exelon Generation Company, LLC	GL	Holtec International	HI-STAR 100 HI-STORM 100	07200037

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX N
Dry Cask Spent Fuel Storage Licensees (continued)

Name Licensee	License Type	Vendor	Storage Model	Docket Number
Duane Arnold NextEra Energy Inc. Duane Arnold, LLC	GL	Transnuclear, Inc.	NUHOMS®-61BT	07200032
Fermi DTE Electric Company	GL	Holtec International	HI-STORM 100	07200071
Fort Calhoun Omaha Public Power District	GL	Transnuclear, Inc.	NUHOMS®-32PT	07200054
Fort St. Vrain* U.S. Department of Energy	SL	FW Energy Applications, Inc.	Modular Vault Dry Store	07200009
Ginna Constellation Energy	GL	Transnuclear, Inc.	NUHOMS®-32PT	07200067
Grand Gulf Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100S	07200050
H.B. Robinson Carolina Power & Light Company	SL GL	Transnuclear, Inc. Transnuclear, Inc.	NUHOMS®-7P NUHOMS®-24P	07200003 07200060
Haddam Neck CT Yankee Atomic Power	GL	NAC International, Inc.	NAC-MPC	07200039
Hatch Southern Nuclear Operating, Inc.	GL	Holtec International	HI-STAR 100 HI-STAR 100	07200036
Hope Creek/Salem PSEG Nuclear, LLC	GL	Holtec International	HI-STORM 100	07200048
Humboldt Bay Pacific Gas & Electric Co.	SL	Holtec International	HI-STORM 100HB	07200027
Idaho National Lab TMI-2 Fuel Debris, U.S. Department of Energy	SL	Transnuclear, Inc.	NUHOMS®-12T	07200020
Idaho Spent Fuel Facility Environmental Corp.	SL	Foster Wheeler	Concrete Vault	07200025
Indian Point Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100	07200051
James A. FitzPatrick Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100	07200012
Joseph M. Farley Southern Nuclear Operating Co.	GL	Transnuclear, Inc.	NUHOMS®-32PT	07200042
Kewaunee Dominion Energy Kewaunee, Inc.	GL	Transnuclear, Inc.	NUHOMS®-39PT	07200064
La Salle Exelon Generation Co., LLC	GL	Holtec International	HI-STORM100	07200070

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX N

Dry Cask Spent Fuel Storage Licensees (continued)

Name Licensee	License Type	Vendor	Storage Model	Docket Number
Lacrosse Dairyland Power	GL	NAC International, Inc.	NAC-MPC	07200046
Limerick Exelon Generation Co., LLC	GL	Transnuclear, Inc.	NUHOMS®-61BT	07200065
Maine Yankee Maine Yankee Atomic Power Company	GL	NAC International, Inc.	NAC-UMS	07200030
McGuire Duke Energy, LLC	GL	Transnuclear, Inc.	TN-32	07200038
Millstone Dominion Generation	GL	Transnuclear, Inc.	NUHOMS®-32PT	07200047
Monticello Northern States Power Co., Minnesota	GL	Transnuclear, Inc.	NUHOMS®-61BT NUHOMS®-61BTH	07200058
Nine Mile Point Constellation Energy	GL	Transnuclear, Inc.	NUHOMS®-61BT	07201036
North Anna Virginia Dominion Generation	GL SL	Transnuclear, Inc. Transnuclear, Inc.	NUHOMS®HD32PTH TN-32	07200056 07200016
Oconee Duke Energy Company	SL GL	Transnuclear, Inc. Transnuclear, Inc.	NUHOMS®-24P NUHOMS®-24P	07200004 07200040
Oyster Creek AmerGen Energy Company, LLC	GL	Transnuclear, Inc.	NUHOMS®-61BT	07200015
Palisades Entergy Nuclear Operations, Inc.	GL	EnergySolutions, Inc.	VSC-24 NUHOMS®-32PT	07200007
Palo Verde Arizona Public Service Co.	GL	NAC International, Inc.	NAC-UMS	07200044
Peach Bottom Exelon Generation Co., LLC	GL	Transnuclear, Inc.	TN-68	07200029
Perry FirstEnergy	GL	Holtec International	HI-STORM	07200069
Pilgrim Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100	07201044
Point Beach FLP Energy Point Beach, LLC	GL	EnergySolutions, Inc.	VSC-24 NUHOMS®-32PT	07200005
Prairie Island Northern States Power Co., Minnesota	SL	Transnuclear, Inc.	TN-40 HT TN-40	07200010
Private Fuel Storage Facility	SL	Holtec International	HI-STORM 100	07200022
Quad Cities Exelon Generation Co., LLC	GL	Holtec International	HI-STORM 100S	07200053

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX N
Dry Cask Spent Fuel Storage Licensees (continued)

Name Licensee	License Type	Vendor	Storage Model	Docket Number
Rancho Seco Sacramento Municipal Utility District	SL	Transnuclear, Inc.	NUHOMS®-24P	07200011
River Bend Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100S	07200049
Salem PSEG Nuclear	GL	Holtec International	HI-STORM	07200048
San Onofre Southern California Edison Co.	GL	Transnuclear, Inc.	NUHOMS®-24PT	07200041
Seabrook FPL Energy	GL	Transnuclear, Inc.	NUHOMS®-HD-32PTH	07200061
Sequoyah Tennessee Valley Authority	GL	Holtec International	HI-STORM 100	07200034
St. Lucie Florida Power & Light Co.	GL	Transnuclear, Inc.	NUHOMS®-HD-32PTH	07200061
Summer South Carolina Electric & Gas	GL	Holtec International	HI-STORM FW	07201038
Surry Virginia Dominion Generation	SL GL	Transnuclear, Inc.	NUHOMS®HD NUHOMS®HD-32PTH	07200002 07200055
Susquehanna Susquehanna Nuclear, LLC	GL	Transnuclear, Inc.	NUHOMS®-52B NUHOMS®-61BT NUHOMS®-61BTH	07200028
Trojan Portland General Electric Corp.	SL	Holtec International	HI-STORM 100	07200017
Turkey Point ISFSI Florida Power & Light Co.	GL	Transnuclear, Inc.	NUHOMS®-HD-32PTH	07200062
Vermont Yankee Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100	07200059
Vogtle Southern Company	GL	Holtec International	HI-STORM 100S	07201039
Waterford Steam Electric Station Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100	07200075
Watts Bar Tennessee Valley Authority	GL	Holtec International	HI-STORM FW	07201048
Yankee Rowe Yankee Atomic Electric	GL	NAC International, Inc.	NAC-MPC	07200031
Zion Zion Solutions, LLC	GL	NAC International, Inc.	Magnastor	07201037

* Fort St. Vrain is undergoing decommissioning and was transferred to DOE on June 4, 1999.

Notes: NRC-abbreviated unit names. Data are current as of July 2017, and the next printed update will be in August 2018.
License Types: SL = site-specific license, GL = general license

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX O

U.S. Low-Level Radioactive Waste Disposal Compact Membership

Appalachian Compact

Delaware
Maryland
Pennsylvania
West Virginia

Atlantic Compact

Connecticut
New Jersey
South Carolina*

Central Compact

Arkansas
Kansas
Louisiana
Oklahoma

Central Midwest Compact

Illinois
Kentucky

Midwest Compact

Indiana
Iowa
Minnesota
Missouri
Ohio
Wisconsin

Northwest Compact

Alaska
Hawaii
Idaho
Montana
Oregon
Utah*
Washington*
Wyoming

Rocky Mountain Compact

Colorado
Nevada
New Mexico
(Northwest accepts Rocky Mountain waste as agreed between compacts.)

Southeast Compact

Alabama
Florida
Georgia
Mississippi
Tennessee
Virginia

Southwestern Compact

Arizona
California
North Dakota
South Dakota

Texas Compact

Texas*
Vermont

Unaffiliated

District of Columbia
Maine
Massachusetts
Michigan
Nebraska
New Hampshire
New York
North Carolina
Puerto Rico
Rhode Island

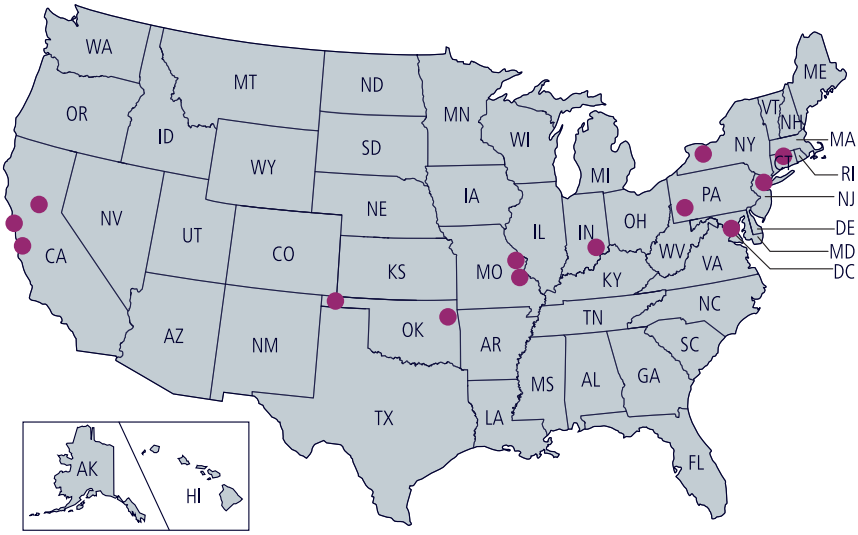
Closed Low-Level Radioactive Waste Disposal Facility Sites Licensed by the NRC or Agreement States

Beatty, NV, closed 1993
Sheffield, IL, closed 1978
Maxey Flats, KY, closed 1977
West Valley, NY, closed 1975

* Site of an active low-level waste disposal facility.
Note: Data are current as of July 2017; the next printed update will be in August 2018.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX P
NRC-Regulated Complex Materials Sites Undergoing Decommissioning, 2016



● NRC-regulated complex materials sites (13)

Company	Location
Alameda Naval Air Station	Alameda, CA
BWX Technology, Inc., Shallow Land Disposal Area	Vandergrift, PA
Beltsville Agricultural Research Center	Beltsville, MD
Cimarron Environmental Response Trust	Cimarron, OK
Department of Army, Jefferson Proving Ground	Madison, IN
Department of Army, Picatinny Arsenal (ARDEC)	Picatinny, NJ
FMRI, Inc. (Fansteel)	Muskogee, OK
Hunter's Point Naval Shipyard	San Francisco, CA
McClellan Air Force Base	Sacramento, CA
Sigma Aldrich	Maryland Heights, MO
UNC Naval Products	New Haven, CT
West Valley Demonstration Project	West Valley, NY
Westinghouse Electric Corporation—Hematite	Festus, MO

Notes: Data are current as of July 2017. The next printed update will be in August 2018.

Beltsville Agricultural Research Center, U.S. Department of Army, Picatinny Arsenal, and UNC Naval Products are managed by the NRC's Region I office.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX Q
Nuclear Power Units by Nation

Country	Nuclear Power Production GWh*	In Operation: Number of Units	In Operation: Gross MW Electrical Capacity	Under Construction or on Order: Number of Units	Under Construction or on Order: Gross MW Electrical Capacity	Shutdown
Argentina	7,677	3	1,700	1	29	0
Armenia	2,195	1	408	0	0	1[P]
Belarus	0	0	0	2	2,218	0
Belgium	41,283	7	6,207	0	0	1[P]
Brazil	15,864	2	1,990	1	1,350	0
Bulgaria	15,775	2	2,000	0	0	4[P]
Canada	97,445	19	14,512	0	0	6[P]
China	210,519	37	34,744	20	23,360	0
Czech Republic	22,730	6	4,160	0	0	0
Finland	22,282	4	2,872	1	1,720	0
France	384,000	58	63,130	1	1,650	12[P]
Germany	80,070	8	11,357	0	0	28[P]
Hungary	15,179	4	2,000	0	0	0
India	35,000	22	6,780	5	3,300	0
Iran	5,924	1	1,000	0	0	0
Italy	0	0	0	0	0	4[P]
Japan	17,453	42	41,482	2	2,756	17[P] & 1[L]
Kazakhstan	0	0	0	0	0	1[P]
Korea, Republic of	154,253	25	24,181	3	4,200	0
Lithuania	0	0	0	0	0	2[P]
Mexico	10,272	2	1,615	0	0	0
Netherlands	3,752	1	515	0	0	1[P]
Pakistan	5,094	4	1,090	3	2,540	0
Romania	10,368	2	1,411	0	0	0
Russia	179,724	35	27,909	7	5,937	6[P]
Slovakia	13,733	4	1,950	2	992	3[P]
Slovenia	5,931	1	727	0	0	0
South Africa	15,209	2	1,940	0	0	0
Spain	56,078	7	7,416	0	0	2[P] & 1[L]
Sweden	60,647	10	10,147	0	0	3[P]
Switzerland	20,303	5	3,485	0	0	1[P]

APPENDIX Q
Nuclear Power Units by Nation (continued)

Country	Nuclear Power Production GWh*	In Operation: Number of Units	In Operation: Gross MW Electrical Capacity	Under Construction or on Order: Number of Units	Under Construction or on Order: Gross MW Electrical Capacity	Shutdown
Ukraine	80,950	15	13,835	2	2,178	4P
United Arab Emirates	0	0	0	4	5,600	0
United Kingdom	65,149	15	10,362	0	0	30P
United States	805,327	99	105,403	4	5,000	34P

Overview of Worldwide Nuclear Power Reactors—As of May 10, 2017	
Nuclear Electricity Supplied (GWh)	2,476,217
Net Installed Capacity (MWe)	392,116
Nuclear Power Reactors in Operation	449
Nuclear Power Reactors in Long-Term Shutdown	2
Nuclear Power Reactors in Permanent Shutdown	160
Nuclear Power Reactors under Construction	60

* Annual electrical power production for 2016.

P = Permanent Shutdown
L = Long-Term Shutdown

Notes: Totals include reactors that are operable, under construction, or on order; the country's short-form name is used; and the figures are rounded to the nearest whole number.

Sources: IAEA Power Reactor Information System Database; analysis compiled by the NRC. For more information go to www.iaea.org/pris/. Data are current as of May 2017; the next printed update will be in August 2018.

APPENDIX R
Nuclear Power Units by Reactor Type, Worldwide

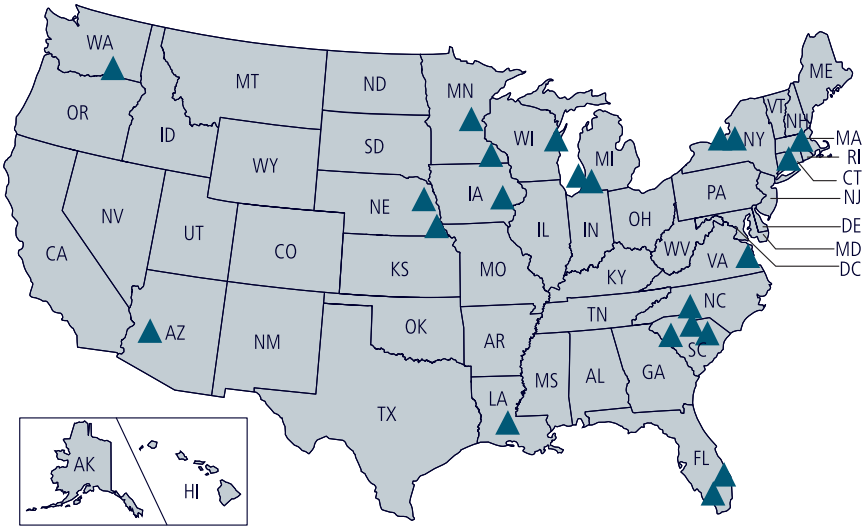
Reactor Type	In Operation: Number of Units	In Operation: Net MWe
Pressurized light-water reactors (PWR)	290	273,856
Boiling light-water reactors (BWR)	78	75,323
Heavy-water reactors, all types (HWR, PHWR)	49	24,629
Light-water-cooled graphite-moderated reactor (LWGR)	15	10,219
Gas-cooled reactors, all types (GCR)	14	7,720
Liquid-metal-cooled fast breeder reactors (FBR)	3	1,369
Total	**449**	**379,261**

Note: MWe values rounded to the nearest whole number.

Source: IAEA Power Reactor Information System Database, www.iaea.org

Compiled by the NRC from IAEA data. Data are current as of April 2015. The next printed update will be in August 2018.

APPENDIX S
Native American Reservations and Trust Lands within a 50-Mile Radius of a Nuclear Power Plant



ARIZONA
- **Palo Verde**
  - Ak-Chin Indian Community
  - Tohono O'odham Trust Land
  - Gila River Reservation

CONNECTICUT
- **Millstone**
  - Mohegan Reservation
  - Mashantucket Pequot Reservation
  - Narragansett Reservation
  - Shinnecock Indian Nation

FLORIDA
- **St. Lucie**
  - Brighton Reservation (Seminole Tribes of Florida)
  - Fort Pierce Reservation
- **Turkey Point**
  - Hollywood Reservation (Seminole Tribes of Florida)
  - Miccosukee Reservation
  - Miccosukee Trust Land

IOWA
- **Duane Arnold**
  - Sac & Fox Trust Land
  - Sac & Fox Reservation

KANSAS
- Iowa Reservation
- Iowa Trust Land

LOUISIANA
- **River Bend**
  - Tunica-Biloxi Reservation

MASSACHUSETTS
- **Pilgrim**
  - Wampanoag Tribe of Gay Head (Aquinnah) Trust Land

MICHIGAN
- **Palisades**
  - Pottawatomi Reservation Matchebenashshewish Band
  - Pokagon Reservation
  - Pokagon Trust Land*
- **DC Cook**
  - Pokagon Reservation
  - Pokagon Trust Land

MINNESOTA
- **Monticello**
  - Shakopee Community
  - Shakopee Trust Land
  - Mille Lacs Reservation
- **Prairie Island**
  - Prairie Island Community*
  - Prairie Island Trust Land*
  - Shakopee Community
  - Shakopee Trust Land

NEBRASKA
- **Cooper**
  - Sac & Fox Trust Land
  - Sac & Fox Reservation
  - Iowa Reservation
  - Iowa Trust Land
  - Kickapoo

NEW YORK
- **FitzPatrick**
  - Onondaga Reservation
  - Oneida Reservation
- **Nine Mile Point**
  - Onondaga Reservation
  - Oneida Reservation

NORTH CAROLINA
- **McGuire**
  - Catawba Reservation

SOUTH CAROLINA
- **Catawba**
  - Catawba Reservation
- **Oconee**
  - Eastern Cherokee Reservation
- **Summer**
  - Catawba Reservation

VIRGINIA
- **Surry**
  - Pamunkey Reservation

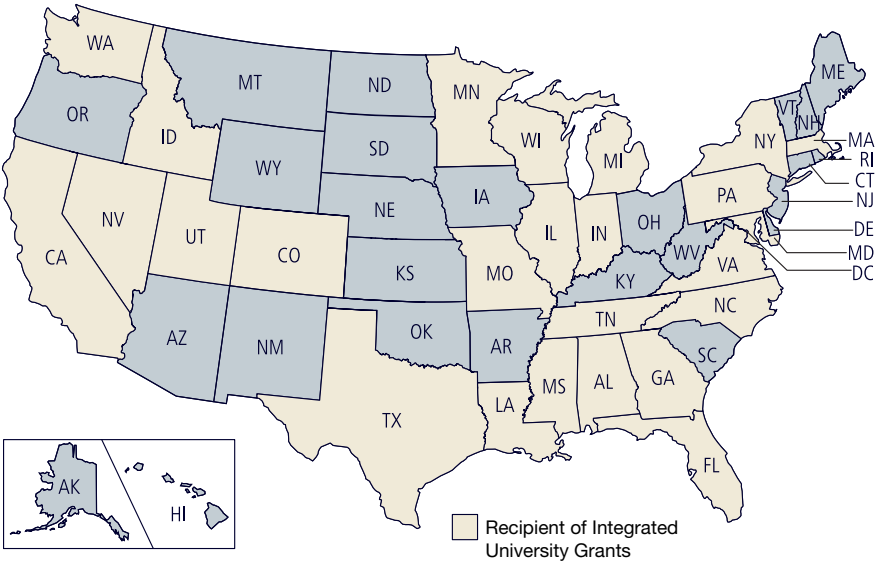
WASHINGTON
- **Columbia**
  - Yakama Reservation
  - Yakama Trust Land

WISCONSIN
- **Point Beach**
  - Oneida Trust Land
  - Oneida Reservation

* Tribe is located within the 10-mile emergency preparedness zone of operating reactors.
Notes: This table uses NRC-abbreviated reactor names and Native American Reservation and Trust land names. There are no reservations or Trust lands within 50 miles of a reactor in Alaska or Hawaii. For more information on other Tribal concerns, go to the NRC Web site at *https://www.nrc.gov.*
NRC-abbreviated reactor names listed. Data are current as of August 2017, and the next printed update will be August 2018.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/.*

APPENDIX T
States with Integrated University Grants Program Recipients in FY 2016



Notes:

The 2009 Omnibus Appropriations Act authorized the Integrated University Program (IUP) for 10 years for a total of $45 million per year: $15 million each to the U.S. Nuclear Regulatory Commission (NRC), the U.S. Department of Energy, and the National Nuclear Security Administration.

The IUP provides grants to academic institutions to support education in nuclear science and engineering to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials.

To date, the NRC has awarded 423 IUP grants, including 127 faculty development, 101 scholarship, 119 fellowship, and 76 trade school and community college scholarship grants. More than 100 faculty and 3,200 students have received support. The NRC has invested approximately $9.6 million in its trade school and community college scholarship program to support the development of trade and craft workers in the nuclear industry.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX U

Significant Enforcement Actions Issued, 2016

Significant (escalated) enforcement actions include notices of violation (NOVs) for severity level (SL) I, II, or III violations; NOVs associated with inspection findings that the significance determination process (SDP) categorizes as white, yellow, or red; civil penalties (CPs); and enforcement-related orders. The NRC Enforcement Policy also allows related violations to be categorized collectively as a single problem. Escalated enforcement actions are issued to reactor, materials, and individual licensees; nonlicensees; and fuel cycle facility licensees.

Action #	Name	Type	Issue Date	Enforcement Action
EA-15-184	Megan, LLC	Materials	1/25/16	NOV/CP SL III–$3,500
EA-15-170	Wolf Creek Nuclear Operating Corp. (Wolf Creek 1)	Reactor	1/27/16	Problem SL III
EA-15-205	Ferrovial Agroman, S.A.	Materials	2/1/16	NOV SL III
EA-15-190	Whitworth-Muench, Inc.	Materials	2/2/16	NOV SL III
IA-15-074	Brian F. Quinn	Individual	2/8/16	NOV SL III
IA-16-010	Erik Simpson	Individual	2/16/16	NOV SL III
EA-15-221	Materials Testing Consultants, Inc.	Materials	2/19/16	NOV SL III
EA-15-188	Pacific Soils Engineering & Testing	Materials	3/10/16	NOV SL III
EA-15-100	Entergy Operations, Inc. (Waterford 3)	Reactor	4/6/16	2 Confirmatory Orders result of an ADR mediation
EA-15-247	Entergy Nuclear Generation Company (Pilgrim 1)	Reactor	4/11/16	Problem SL III
EA-15-212	C&D Technologies, Inc.	Reactor	4/20/16	Confirmatory Order result of an ADR mediation
EA-15-258	Team Industrial Services, Inc.	Materials	4/20/16	NOV SL III
EA-15-251	Siouxland Urology Center, LLC	Materials	4/21/16	NOV SL III
EA-16-035	Weaver Consultants Group	Materials	5/10/16	NOV SL III
EA-15-213	Novelis Corporation	Materials	5/13/16	NOV/CP SL III–$7,000
IA 15-079	Stephen Mick	Individual	5/13/16	NOV SL III
EA-15-039	Entergy Nuclear Operations, Inc. (Palisades)	Reactor	5/16/16	Confirmatory Order result of an ADR mediation
EA-16-054	FMC & Associates, LLC	Materials	5/17/16	Problem SL III
EA-16-031	Wayne County Well Surveys, Inc.	Materials	5/19/16	NOV SL III
EA-16-078	Curtis-Wright Corporation	Materials	5/20/16	NOV SL III
IA-15-053	Terry LaBue	Individual	5/25/16	NOV SL III
IA-15-052	Kristen Smith	Individual	5/31/16	NOV SL III
EA-16-045	Thielsch Engineering, Inc.	Materials	6/1/16	Problem SL III
EA-15-165	Montana State University	Materials	6/24/16	NOV SL III
IA-16-018	Curtis Hofer	Individual	6/24/16	NOV SL III
EA-14-080	CAMPCO, Inc.	Materials	6/26/16	Confirmatory Order result of an ADR mediation
EA-16-098	7NT Enterprises	Materials	7/1/16	NOV SL III
EA-16-057	Exelon Generation Co., LLC (Oyster Creek)	Reactor	7/6/16	NOV White SDP finding resulting in plant inspections
EA-15-173	ACUREN USA	Materials	7/7/16	Problem/CP SL III–$7,000
IA-16-025	Troy Morehead	Individual	7/11/16	Confirmatory Order result of an ADR mediation
IA-16-026	Kyle Dickerson	Individual	7/11/16	Confirmatory Order result of an ADR mediation
EA-16-075	Patriot Engineering and Environment	Materials	7/12/16	NOV/CP SL III–$3,500
EA-16-109	MEDSTAR Washington Hospital Center	Materials	7/19/16	NOV SL III
EA-16-074	QHG of Indiana, Inc.	Materials	7/23/16	NOV SL III
EA-16-046	Applied Technical Services, Inc.	Materials	7/28/16	Problem/CP SL III–$7,000
IA-15-081	Justin Hubbard	Individual	7/28/16	NOV SL III
IA-16-040	Martin Ferenc	Individual	7/28/16	NOV SL III

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX U
Significant Enforcement Actions Issued, 2016 (continued)

EA-16-016	AREVA NP, Inc.	Materials	8/4/16	Confirmatory Order result of an ADR mediation
EA-16-100	City of Muskegon	Materials	8/8/16	NOV SL III
EA-16-022	FirstEnergy Nuclear Operating Co. (Davis-Besse)	Reactor	9/1/16	Confirmatory Order result of an ADR mediation
IA-16-039	Franklin D. Hayden, Jr.	Individual	9/1/16	Problem SL III
EA-16-115	Consumers Energy	Materials	9/14/16	NOV SL III
EA-16-128	R.E. Ginna Nuclear Power Plant, LLC	Reactor	9/20/16	NOV White SDP finding resulting in plant inspections
EA-16-135	Ontonagon County Road Commission	Materials	9/26/16	NOV SL III
EA-16-140	Ideker, Inc.	Materials	9/27/16	NOV SL III
EA-16-010	CB&I AREVA MOX Services	Fuel Facility	9/28/16	NOV SL III
EA-16-097	Jenbo USA, LLC	Materials	9/29/16	NOV SL III; Problem SL III
EA-16-051	Power Resources, Inc.	Materials	9/30/16	Confirmatory Order result of an ADR mediation
IA-16-043	Kevin Brainard	Individual	9/30/16	NOV SL III
EA-16-163	Southern Nuclear Operating Co., Inc. (Hatch)	Reactor	10/3/16	Confirmatory Order result of an ADR mediation
EA-16-099	Florida Power & Light Co. (Turkey Point 3, Turkey Point 4)	Reactor	10/10/16	NOV SL III
EA-16-136	Southern Nuclear Operating Co., Inc. (Hatch 1)	Reactor	10/19/16	NOV SL III
EA-16-154	CQM, Inc.	Materials	11/14/16	NOV SL III
EA-16-064	Tennessee Valley Authority (Browns Ferry)	Reactor	11/28/16	NOV/CP SL III–$140,000
EA-16-172	Hartford Quality Assurance	Materials	12/2/16	NOV SL III
EA-16-153	Lehigh Cement Company, LLC	Materials	12/7/16	NOV SL III
EA-16-175	Northern States Power Company (Monticello)	Reactor	12/12/16	NOV White SDP finding resulting in plant inspections
EA-16-138	EMSI Engineering, Inc.	Materials	12/15/16	NOV/CP SL III–$14,000
EA-16-179	Romeo RIM	Materials	12/15/16	Problem SL III
EA-16-168	Pacific Gas & Electric Co. (Diablo Canyon 2)	Reactor	12/28/16	NOV White SDP finding resulting in plant inspections
EA-13-190	Plus, LLC	Materials	5/3/2016 8/8/2016	3 NOV/CP SL III Order Imposing Civil Penalty of $21,000
EA-15-230	Tetra Tech EC, Inc.	Materials	7/28/2016 10/11/2016	NOV/CP SL III–$7,000 Confirmatory Order result of an ADR mediation
EA-16-055	International Cyclotron, Inc.	Materials	8/30/2016 11/17/2016	NOV/CP SL III–$14,000 Order Imposing Civil Penalty of $14,000

Notes: Reactor facilities in a decommissioning status are listed as materials licensees. The NRC report on Issued Significant Enforcement Actions can be found on the NRC Web site at *https://www.nrc.gov/about-nrc/regulatory/enforcement/current.html.*

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/.*

APPENDIX V
Laws Governing the U.S. Nuclear Regulatory Commission

1. Atomic Energy Act of 1954, as amended (Pub. L. 83-703)
2. Energy Reorganization Act of 1974, as amended (Pub. L. 93-438)
3. Reorganization Plan No. 1 of 1980, 5 U.S.C., App. 1.
4. Uranium Mill Tailings Radiation Control Act of 1978, as amended (Pub. L. 95-604)
5. Nuclear Non-Proliferation Act of 1978 (Pub. L. 95-242)
6. West Valley Demonstration Project Act of 1980 (Pub. L. 96-368)
7. Nuclear Waste Policy Act of 1982, as amended (Pub. L. 97-425)
8. Low-Level Radioactive Waste Policy Amendments Act of 1985 (Pub. L. 99-240)
9. Energy Policy Act of 1992 (Pub. L. 102-486)
10. Energy Policy Act of 2005 (Pub. L. 109-58)

Fundamental Laws Governing Civilian Uses of Radioactive Materials

Nuclear Materials and Facilities

1. Atomic Energy Act of 1954, as amended
2. Energy Reorganization Act of 1974, as amended
3. Reorganization Plan No. 1 of 1980

Radioactive Waste

1. Nuclear Waste Policy Act of 1982, as amended
2. Low-Level Radioactive Waste Policy Amendments Act of 1985
3. Uranium Mill Tailings Radiation Control Act of 1978

Nonproliferation

1. Nuclear Non-Proliferation Act of 1978

Fundamental Laws Governing the Processes of Regulatory Agencies

1. Administrative Procedure Act (5 U.S.C. Chapters 5 through 8)
2. National Environmental Policy Act

APPENDIX W
International Activities:

CONVENTIONS AND TREATIES PERTAINING TO NUCLEAR SAFETY, SECURITY, AND INTERNATIONAL SAFEGUARDS*

1. Treaty on the Non-Proliferation of Nuclear Weapons, entry into force on March 5, 1970; the United States (U.S.) is a party to the Treaty
2. Treaty for the Prohibition of Nuclear Weapons in Latin America (Tlatelolco Treaty), entry into force for each government individually, the United States is a party to the specific protocols appended to the Treaty
3. Three to four other treaties specifying nuclear weapons-free zones in Africa, the South Pacific (Rarotonga), and Southeast Asia, including one being negotiated on the Middle East; the United States is only bound by specific protocols
4. Convention on Early Notification of a Nuclear Accident, entry into force October 27, 1986; the United States is a party
5. Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, entry into force February 26, 1987; the U.S. is a party
6. Convention on Nuclear Safety, entry into force October 24, 1996; the U.S. is a party
7. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, entry into force June 18, 2001, the U.S. is a party
8. Convention on the Physical Protection of Nuclear Material (CPPNM), entry into force February 8, 1987; the U.S. is a party
9. Amendment to the CPPNM, entry into force May 8, 2016; the U.S. is a party
10. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, entry into force August 30, 1975; the U.S. is a party (also to amendments in 1978 (incineration), 1978 (disputes), 1980 (list of substances), 1989 (procedures), 1993 (banning dumping of low-level radioactive wastes into sea), 1996 (protocol to replace the 1972 Convention with a more restrictive text regulating the use of the sea as a depository for waste materials)
11. Convention on Supplementary Compensation for Nuclear Damage
12. Agreement between the United States of America and the Agency for the Application of Safeguards in the United States of America (INFCIRC/288), entry into force December 9, 1980
13. Model Protocol Additional to the Agreement Between State(s) and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty for the Prohibition of Nuclear Weapons in Latin America (INFCIRC/366), entry into force April 6, 1989; U.S. is a party
14. Protocol Additional to the Agreement between the United States of America and the Agency for the Application of Safeguards in the United States of America (INFCIRC/288/Add. 1), entry into force January 6, 2009

* This excludes arms control agreements.

Note: Data are current as of July 2017; the next printed update will be in August 2018.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX X
International Activities:

LIST OF THE NRC'S PARTICIPATION WITH MULTILATERAL ORGANIZATIONS

International Commission on Radiological Protection

International Atomic Energy Agency (IAEA)

Commission on Safety Standards (CSS)
Emergency Preparedness and Response Standards Committee (EPReSC)
Nuclear Safety Standards Committee (NUSSC)
Nuclear Security Guidance Committee (NSGC)
Radiation Safety Standards Committee (RASSC)
Transport Safety Standards Committee (TRANSSC)
Waste Safety Standards Committee (WASSC)

Source: *http://www-ns.iaea.org/committees/*

Organisation for Economic Co-operation and Development (OECD) specialized agency Nuclear Energy Agency (NEA)

Steering Committee for Nuclear Energy
The Committee on the Safety of Nuclear Installations (CSNI)
The Committee on Nuclear Regulatory Activities (CNRA)
The Radioactive Waste management Committee (RWMC)
The Committee on Radiation Protection and Public Health (CRPPH)
The Nuclear Law Committee (NLC)
Multinational Design Evaluation Programme (MDEP)

Source: https://www.oecd-nea.org/general/about/committee.html

United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)

UNSCEAR reports to the United Nations General Assembly. It assesses global levels and effects of ionizing radiation and provides a scientific basis for radiation protection.

Source: http://www.unscear.org/

APPENDIX X
International Activities: (continued)

BILATERAL INFORMATION EXCHANGE AND COOPERATION AGREEMENTS WITH THE NRC

Agreement Country			
Argentina	France	Lithuania	Sweden
Armenia	Germany	Mexico	Switzerland
Australia	Greece	Netherlands	Tecro (Taiwan)
Belgium	Hungary	Philippines	Thailand
Brazil	India	Poland	Turkey
Bulgaria	Indonesia	Romania	United Arab Emirates
Canada	Israel	Slovakia	Ukraine
China	Italy	Slovenia	United Kingdom
Croatia	Japan	South Africa	Vietnam
Czech Republic	Jordan	South Korea	EURATOM
Finland	Kazakhstan	Spain	

Notes: The country's short-form name is used. The NRC's technical arrangements are initiated and renewed for 5-year terms.
Data are current as of July 2017; the next printed update will be in August 2018.
EURATOM is the European Atomic Energy Community.
Tecro (Taiwan) is the Taipei Economic and Cultural Representative Office in the United States.

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX Y

International Activities:

LIST OF IMPORT AND EXPORT LICENSES ISSUED FOR 2016

License Number	Applicant	Docket Number
PXB114.04	Baker Hughes Oilfield Operations	11006026
PXB139.03	Schlumberger Technology	11006027
PXB14b.06	Source Production & Equipment Co., Inc.	11006034
PXB169.02	Baker Hughes Oilfield Operations	11006064
PXB17b.10	Industrial Nuclear Company	11006012
PXB208.01	Halliburton Energy Services, Inc.	11006226
PXB209.00	Karmanos Cancer Center	11006232
PXB210.00	Halliburton Energy Services, Inc.	11006245
PXB212.00	University of Kentucky, Radiation Safety Office	11006250
PXB3.08	Nordion (Canada), Inc.	11006070
PXB6.20	Alpha Omega Services	11006027
PXB6.21	Alpha Omega Services	11006027

Appendix P licenses support the use of radioactive sealed sources for a variety of medical, industrial, research, and educational activities. Some applicants have previously obtained a combined export/import license to allow export or import, use, resale, and import or export back to the supplier for recycling. These combined licenses are no longer appropriate and can no longer be amended going forward, given the authorization for imports of Appendix P materials under a general license (see 10 CFR 110.27, "General License for Import"). These combined import/export licenses needing amendment are converted to export-only licenses. The 2010 changes to 10 CFR Part 110 generally necessitate specific licenses for only Appendix P, Category 1 and 2 exports.

LIST OF IMPORT AND EXPORT LICENSES: NON-APPENDIX P

License Number	Applicant	Docket Number
IW016/03	Eastern Technologies, Inc.	11006602
IW017/03	EnergySolutions	11005621
IW033	Perma-Fix Northwest Richland, Inc. (PFNW)	11006229
XB1329/03	Rapiscan Systems, Inc.	11005838
XCOM1209/01	Enrichment Technology US, Inc.	11006127
XCOM1228/01	Flowserve US, Inc.	11005934
XCOM1255/01	Westinghouse Electric Company, LLC	11006060
XCOM1274	Holtec International	11006128
XCOM1295	Technetics Group Columbia	11006208
XCOM1296	Technetics Group Columbia	11006209
XCOM1297	NDA Technologies Incorporated	11006196
XCOM1298	Westinghouse Electric Company, LLC	11006217
XCOM1299	ATI Specialty Alloys and Components	11006218
XCOM1300	Mirion Technologies (IST) Corporation	11006221
XCOM1301	Materion Brush, Inc.	11006222
XCOM1302	Harper International Corp.	11006223
XCOM1303	Materion Brush, Inc.	11006227
XCOM1305	Materion Brush, Inc.	11006242

For the most recent information, go to the Dataset Index Web page at *https://www.nrc.gov/reading-rm/doc-collections/datasets/*.

APPENDIX Y

International Activities: (continued)

LIST OF IMPORT AND EXPORT LICENSES: NON-APPENDIX P (continued)

License Number	Applicant	Docket Number
XCOM1307	Materion Brush, Inc.	11006247
XMAT415/02	Linde Electronics and Specialty Gases, a Division of Linde Gas North America, LLC	11005907
XMAT418/02	Sigma-Aldrich Co., LLC	11005977
XMAT419/02	Cambridge Isotope Laboratories, Inc.	11005993
XMAT419/02-R	Cambridge Isotope Laboratories, Inc.	11005993
XMAT424	Graftech International Holdings, Inc.	11006032
XMAT436	Cambridge Isotope Laboratories, Inc.	11006225
XMAT437	Linde Electronics and Specialty Gases, a Division of Linde Gas North America, LLC	11006238
XR178	Westinghouse Electric Company, LLC	11006216
XSNM3643/02	TN Americas, LLC	11005864
XSNM3722/01	AREVA, Inc.	11006109
XSNM3747/02	AREVA, Inc.	11006110
XSNM3754	Thermo Fisher Scientific	11006166
XSNM3757	U.S. Department of Energy–National Nuclear Security Administration	11006187
XSNM3763/01	Edlow International Co.	11006195
XSNM3766	Edlow International Co.	11006219
XSNM3767	Louisiana Energy Services, LLC	11006224
XSNM3767-R	Louisiana Energy Services, LLC	11006224
XSNM3768	Edlow International Co.	11006228
XSNM3770	Edlow International Co.	11006234
XSNM3770-R	Edlow International Co.	11006234
XSNM3773	Global Nuclear Fuel–Americas, LLC	11006237
XSOU8780/07	AREVA Nuclear Materials, LLC	11005211
XSOU8798/06	RSB Logistic Services, Inc.	11005445
XSOU8826/01	Honeywell International, Inc.	11005938
XSOU8840	Iluka Resources, Inc.	11006220
XW010/03	Duratek Services, Inc.	11005620
XW016/02	Eastern Technologies, Inc.	11005825
XW022	Perma-Fix Northwest Richland, Inc. (PFNW)	11006230

Non-Appendix P Components Guide

(XSNM) denotes export of special nuclear material (plutonium, uranium-233, or uranium enriched above 0.711 percent, by weight, in the isotope uranium-235).

(XCOM) denotes export of minor reactor components or other nuclear facility (e.g., nuclear fabrication) components under NRC jurisdiction (refer to Title 10 CFR Part 110, "Export and Import of Nuclear Equipment and Material", Appendix A, Items (5)–(9), for minor reactor components and Appendices B–K and N–O for other nuclear facility components).

(XSOU) denotes export of source material (natural or depleted uranium; thorium; a mixture of uranium and thorium other than special nuclear material; or certain ores [e.g., tantalum and niobium that contain, by weight, 0.05 percent or more of the aforementioned materials for nonnuclear end use]).

(XB) denotes export of byproduct material, 10 CFR Part 110, Appendix L, for an illustrative list of byproduct materials under NRC jurisdiction.

(XR) denotes export of reactor facilities, 10 CFR Part 110, Appendix A, items (1)–(4).

(IW) denotes import of radioactive waste.

(XW) denotes export of radioactive waste.