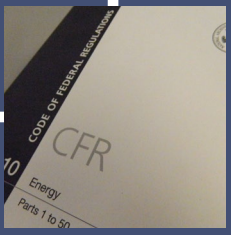
NRC

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
ADAMS	Agencywide Documents Access and Managment System
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)
AP600	Advanced Passive 600 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
CB&I	Chicago Bridge & Iron
CE	Combustion Engineering
CFR	*Code of Federal Regulations*
CNS	Convention on Nuclear Safety
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 1	*wet, MARK I*
MARK 2	*wet, MARK II*
MARK 3	*wet, MARK III*
CP Issued	date of construction permit issuance
CPPNM	Convention on the Physical Protection of Nuclear Material
CT	computerized tomography
CP	civil penalty
CVTR	Carolinas Virginia Tube Reactor
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
EDO	Executive Director for Operations
EIA	Energy Information Administration (DOE)
EP	emergency preparedness
EPA	Environmental Protection Agency (U.S.)
EPR	Evolutionary Pressurized-Water 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
FR	*Federal Register*
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
GW	gigawatt
GWh	gigawatt-hour(s)
Gy	gray
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)
kWh	kilowatt-hour(s)
KI	potassium iodide
LLP	B&W lowered loop
LLW	low-level radioactive waste
LMFB	liquid metal fast breeder (reactor)
LOCA	loss-of-coolant-accident
LR Issued	license renewal issued
LSN	Licensing Support Network

LWGR	light-water-cooled graphite-moderated reactor
Mo-99	molybdenum-99
MOX	mixed oxide
MW	megawatt(s)
MWe	megawatt(s) electric
MWh	megawatt-hour(s)
MWt	megawatt(s) thermal
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
PRIS	Power Reactor Information System
PSDAR	**p**ost-shutdown decommissioning activities report
PSEG	Public Service Electric and Gas Company
PWR	pressurized-water reactor
Rad	radiation absorbed dose
RDD	radiological dispersal devise
RIC	Regulatory Information Conference
RLP	B&W raised loop
ROP	Reactor Oversight Process
RSS	rich site summary
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
SL	site-specific license
SMR	small modular reactor
SOARCA	State-of-the-Art Reactor Consequence Analyses
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
UF6	uranium hexafluoride
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
Y-90	yttrium-90

State and Territory Abbreviations

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

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)

Quantity	From Inch-Pound Units	To Metric Units	Multiply by
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	2012–2017* Capacity Factor (Percent)
Arkansas Nuclear One, Unit 1	IV	PWR-DRYAMB	2,568	12/06/1968	102
Entergy Operations, Inc.		B&W LLP	DPR-51	05/21/1974	56
London, AR		BECH		12/19/1974	98
(6 miles WNW of Russellville, AR)		BECH		06/20/2001	82
05000313				05/20/2034	72
https://www.nrc.gov/info-finder/reactors/ano1.html					87
Arkansas Nuclear One, Unit 2	IV	PWR-DRYAMB	3,026	12/06/1972	93
Entergy Operations, Inc.		CE	NPF-6	09/01/1978	91
London, AR		BECH		03/26/1980	85
(6 miles WNW of Russellville, AR)		BECH		06/30/2005	94
05000368				07/17/2038	89
https://www.nrc.gov/info-finder/reactors/ano2.html					70
Beaver Valley Power Station, Unit 1	I	PWR-DRYAMB	2,900	06/26/1970	92
FirstEnergy Nuclear Operating Co.		WEST 3LP	DPR-66	07/02/1976	86
Shippingport, PA		S&W		10/01/1976	86
(17 miles W of McCandless, PA)		S&W		11/05/2009	90
05000334				01/29/2036	91
https://www.nrc.gov/info-finder/reactors/bv1.html					99
Beaver Valley Power Station, Unit 2	I	PWR-DRYAMB	2,900	05/03/1974	91
FirstEnergy Nuclear Operating Co.		WEST 3LP	NPF-73	08/14/1987	97
Shippingport, PA		S&W		11/17/1987	98
(17 miles W of McCandless, PA)		S&W		11/05/2009	90
05000412				05/27/2047	97
https://www.nrc.gov/info-finder/reactors/bv2.html					90
Braidwood Station, Unit 1	III	PWR-DRYAMB	3,645	12/31/1975	91
Exelon Generation Co., LLC		WEST 4LP	NPF-72	07/02/1987	95
Braceville, IL		S&L		07/29/1988	103
(20 miles SSW of Joliet, IL)		CWE		01/27/2016	93
05000456				10/17/2046	90
https://www.nrc.gov/info-finder/reactors/brai1.html					98
Braidwood Station, Unit 2	III	PWR-DRYAMB	3,645	12/31/1975	93
Exelon Generation Co., LLC		WEST 4LP	NPF-77	05/20/1988	98
Braceville, IL		S&L		10/17/1988	96
(20 miles SSW of Joliet, IL)		CWE		01/27/2016	91
05000457				12/18/2046	95
https://www.nrc.gov/info-finder/reactors/brai2.html					98
Browns Ferry Nuclear Plant, Unit 1	II	BWR-MARK 1	3,952	05/10/1967	88
Tennessee Valley Authority		GE 4	DPR-33	12/20/1973	94
Limestone County, AL		TVA		08/01/1974	90
(10 miles S of Athens, AL)		TVA		05/04/2006	94
05000259				12/20/2033	83
https://www.nrc.gov/info-finder/reactors/bf1.html					97

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	2012–2017* Capacity Factor (Percent)
Browns Ferry Nuclear Plant, Unit 2	II	BWR-MARK 1	3,952	05/10/1967	99
Tennessee Valley Authority		GE 4	DPR-52	06/28/1974	79
Limestone County, AL		TVA		03/01/1975	98
(10 miles S of Athens, AL)		TVA		05/04/2006	85
05000260				06/28/2034	94
https://www.nrc.gov/info-finder/reactors/bf2.html					83
Browns Ferry Nuclear Plant, Unit 3	II	BWR-MARK 1	3,952	07/31/1968	83
Tennessee Valley Authority		GE 4	DPR-68	07/02/1976	89
Limestone County, AL		TVA		03/01/1977	88
(10 miles S of Athens, AL)		TVA		05/04/2006	92
05000296				07/02/2036	80
https://www.nrc.gov/info-finder/reactors/bf3.html					93
Brunswick Steam Electric Plant, Unit 1	II	BWR-MARK 1	2,923	02/07/1970	77
Duke Energy Progress, LLC		GE 4	DPR-71	09/08/1976	92
Southport, NC		UE&C		03/18/1977	89
(20 miles S of Wilmington, NC)		BRRT		06/26/2006	93
05000325				09/08/2036	83
https://www.nrc.gov/info-finder/reactors/bru1.html					93
Brunswick Steam Electric Plant, Unit 2	II	BWR-MARK 1	2,923	02/07/1970	98
Duke Energy Progress, LLC		GE 4	DPR-62	12/27/1974	73
Southport, NC		UE&C		11/03/1975	98
(20 miles S of Wilmington, NC)		BRRT		06/26/2006	81
05000324				12/27/2034	92
https://www.nrc.gov/info-finder/reactors/bru2.html					82
Byron Station, Unit 1	III	PWR-DRYAMB	3,645	12/31/1975	88
Exelon Generation Co., LLC		WEST 4LP	NPF-37	02/14/1985	96
Byron, IL		S&L		09/16/1985	97
(17 miles SW of Rockford, IL)		CWE		11/19/2015	88
05000454				10/31/2044	97
https://www.nrc.gov/info-finder/reactors/byro1.html					89
Byron Station, Unit 2	III	PWR-DRYAMB	3,645	12/31/1975	94
Exelon Generation Co., LLC		WEST 4LP	NPF-66	01/30/1987	86
Byron, IL		S&L		08/02/1987	94
(17 miles SW of Rockford, IL)		CWE		11/19/2015	94
05000455				11/06/2046	86
https://www.nrc.gov/info-finder/reactors/byro2.html					46
Callaway Plant, Unit 1	IV	PWR-DRYAMB	3,565	04/16/1976	103
Union Electric Co.		WEST 4LP	NPF-30	10/18/1984	77
Fulton, MO		BECH		12/19/1984	89
(25 miles ENE of Jefferson City, MO)		DANI		03/06/2015	96
05000483				10/18/2044	87
https://www.nrc.gov/info-finder/reactors/call.html					77

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	2012–2017* Capacity Factor (Percent)
Calvert Cliffs Nuclear Power Plant, Unit 1 Calvert Cliffs Nuclear Power Plant, LLC Exelon Generation Co., LLC Lusby, MD (40 miles S of Annapolis, MD) 05000317 *https://www.nrc.gov/info-finder/reactors/calv1.html*	I	PWR-DRYAMB CE BECH BECH	2,737 DPR-53	07/07/1969 07/31/1974 05/08/1975 03/23/2000 07/31/2034	81 97 91 97 89 97
Calvert Cliffs Nuclear Power Plant, Unit 2 Calvert Cliffs Nuclear Power Plant, LLC Exelon Generation Co., LLC Lusby, MD (40 miles S of Annapolis, MD) 05000318 *https://www.nrc.gov/info-finder/reactors/calv2.html*	I	PWR-DRYAMB CE BECH BECH	2,737 DPR-69	07/07/1969 08/13/1976 04/01/1977 03/23/2000 08/13/2036	101 81 100 86 95 91
Catawba Nuclear Station, Unit 1 Duke Energy Carolinas, LLC York, SC (18 miles S of Charlotte, NC) 05000413 *https://www.nrc.gov/info-finder/reactors/cat1.html*	II	PWR-ICECND WEST 4LP DUKE DUKE	3,411 NPF-35	08/07/1975 01/17/1985 06/29/1985 12/05/2003 12/05/2043	89 96 86 88 97 90
Catawba Nuclear Station, Unit 2 Duke Energy Carolinas, LLC York, SC (18 miles S of Charlotte, NC) 05000414 *https://www.nrc.gov/info-finder/reactors/cat2.html*	II	PWR-ICECND WEST 4LP DUKE DUKE	3,411 NPF-52	08/07/1975 05/15/1986 08/19/1986 12/05/2003 12/05/2043	92 86 100 86 88 96
Clinton Power Station, Unit 1 Exelon Generation Co., LLC Clinton, IL (23 miles SSE of Bloomington, IL) 05000461 *https://www.nrc.gov/info-finder/reactors/clin.html*	III	BWR-MARK 3 GE 6 S&L BALD	3,473 NPF-62	02/24/1976 04/17/1987 11/24/1987 N/A 09/29/2026	100 82 97 87 89 84
Columbia Generating Station Energy Northwest Hanford Reservation in Benton County, WA (12 miles NW of Richland, WA) 05000397 *https://www.nrc.gov/info-finder/reactors/wash2.html*	IV	BWR-MARK 2 GE 5 B&R BECH	3,544 NPF-21	03/19/1973 04/13/1984 12/13/1984 05/22/2012 12/20/2043	97 80 98 78 92 77
Comanche Peak Nuclear Power Plant, Unit 1 Comanche Peak Power Co., LLC. Vistra Operating Co., LLC Glen Rose, TX (40 miles SW of Fort Worth, TX) 05000445 *https://www.nrc.gov/info-finder/reactors/cp1.html*	IV	PWR-DRYAMB WEST 4LP G&H BRRT	3,612 NPF-87	12/19/1974 04/17/1990 08/13/1990 N/A 02/08/2030	98 94 85 100 92 91

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	2012–2017* Capacity Factor (Percent)
Comanche Peak Nuclear Power Plant, Unit 2	IV	PWR-DRYAMB	3,612	12/19/1974	91
Comanche Peak Power Co., LLC.		WEST 4LP	NPF-89	04/06/1993	99
Vistra Operating Co., LLC		BECH		08/03/1993	93
Glen Rose, TX		BRRT		N/A	88
(40 miles SW of Fort Worth, TX)				02/02/2033	100
05000446					68
https://www.nrc.gov/info-finder/reactors/cp2.html					
Cooper Nuclear Station	IV	BWR-MARK 1	2,419	06/04/1968	87
Nebraska Public Power District		GE 4	DPR-46	01/18/1974	97
Brownville, NE		B&R		07/01/1974	88
(23 miles S of Nebraska City, NE)		B&R		11/29/2010	97
05000298				01/18/2034	84
https://www.nrc.gov/info-finder/reactors/cns.html					99
Davis-Besse Nuclear Power Station, Unit 1	III	PWR-DRYAMB	2,817	03/24/1971	91
FirstEnergy Nuclear Operating Co.		B&W RLP	NPF-3	04/22/1977	95
Oak Harbor, OH		BECH		07/31/1978	74
(21 miles ESE of Toledo, OH)		B&W		12/08/2015	97
05000346				04/22/2037	79
https://www.nrc.gov/info-finder/reactors/davi.html					97
Diablo Canyon Nuclear Power Plant, Unit 1	IV	PWR-DRYAMB	3,411	4/23/1968	84
Pacific Gas & Electric Co.		WEST 4LP	DPR-80	11/02/1984	95
Avila Beach, CA		PG&E		05/07/1985	87
(12 miles WSW of San Luis Obispo, CA)		PG&E		Withdrawn	87
05000275				11/02/2024	98
https://www.nrc.gov/info-finder/reactors/diab1.html					81
Diablo Canyon Nuclear Power Plant, Unit 2	IV	PWR-DRYAMB	3,411	12/09/1970	97
Pacific Gas & Electric Co.		WEST 4LP	DPR-82	08/26/1985	82
Avila Beach, CA		PG&E		03/13/1986	86
(12 miles WSW of San Luis Obispo, CA)		PG&E		Withdrawn	95
05000323				08/26/2025	88
https://www.nrc.gov/info-finder/reactors/diab2.html					95
Donald C. Cook Nuclear Plant, Unit 1	III	PWR-ICECND	3,304	03/25/1969	104
Indiana Michigan Power Co.		WEST 4LP	DPR-58	10/25/1974	78
Bridgman, MI		AEP		08/28/1975	94
(13 miles S of Benton Harbor, MI)		AEP		08/30/2005	78
05000315				10/25/2034	82
https://www.nrc.gov/info-finder/reactors/cook1.html					72
Donald C. Cook Nuclear Plant, Unit 2	III	PWR-ICECND	3,468	03/25/1969	91
Indiana Michigan Power Co.		WEST 4LP	DPR-74	12/23/1977	85
Bridgman, MI		AEP		07/01/1978	101
(13 miles S of Benton Harbor, MI)		AEP		08/30/2005	79
05000316				12/23/2037	71
https://www.nrc.gov/info-finder/reactors/cook2.html					104

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	2012–2017* Capacity Factor (Percent)
Dresden Nuclear Power Station, Unit 2	III	BWR-MARK 1	2,957	01/10/1966	104
Exelon Generation Co., LLC		GE 3	DPR-19	02/20/1991[A]	85
Morris, IL		S&L		06/09/1970	98
(25 miles SW of Joliet, IL)		UE&C		10/28/2004	83
05000237				12/22/2029	91
https://www.nrc.gov/info-finder/reactors/dres2.html					84
Dresden Nuclear Power Station, Unit 3	III	BWR-MARK 1	2,957	10/14/1966	91
Exelon Generation Co., LLC		GE 3	DPR-25	01/12/1971	89
Morris, IL		S&L		11/16/1971	95
(25 miles SW of Joliet, IL)		UE&C		10/28/2004	89
05000249				01/12/2031	84
https://www.nrc.gov/info-finder/reactors/dres3.html					91
Duane Arnold Energy Center	III	BWR-MARK 1	1,912	06/22/1970	83
NextEra Energy Duane Arnold, LLC		GE 4	DPR-49	02/22/1974	89
Palo, IA		BECH		02/01/1975	79
(8 miles NW of Cedar Rapids, IA)		BECH		12/16/2010	88
05000331				02/21/2034	79
https://www.nrc.gov/info-finder/reactors/duan.html					88
Edwin I. Hatch Nuclear Plant, Unit 1	II	BWR-MARK 1	2,804	09/30/1969	89
Southern Nuclear Operating Co.		GE 4	DPR-57	10/13/1974	94
Baxley, GA		BECH		12/31/1975	89
(20 miles S of Vidalia, GA)		GPC		01/15/2002	101
05000321				08/06/2034	93
https://www.nrc.gov/info-finder/reactors/hat1.html					97
Edwin I. Hatch Nuclear Plant, Unit 2	II	BWR-MARK 1	2,804	12/27/1972	98
Southern Nuclear Operating Co., Inc.		GE 4	NPF-5	06/13/1978	89
Baxley, GA		BECH		09/05/1979	99
(20 miles S of Vidalia, GA)		GPC		01/15/2002	91
05000366				06/13/2038	101
https://www.nrc.gov/info-finder/reactors/hat2.html					95
Fermi, Unit 2	III	BWR-MARK 1	3,486	09/26/1972	54
DTE Electric Company		GE 4	NPF-43	03/20/1985	62
Newport, MI		S&L		01/23/1988	82
(25 miles NE of Toledo, OH)		DANI		12/15/2016	69
05000341				03/20/2045	86
https://www.nrc.gov/info-finder/reactors/ferm2.html					82
Grand Gulf Nuclear Station, Unit 1	IV	BWR-MARK 3	4,408	09/04/1974	70
Entergy Operations, Inc.		GE 6	NPF-29	11/01/1984	86
Port Gibson, MS		BECH		07/01/1985	82
(20 miles S of Vicksburg, MS)		BECH		12/01/2016	93
05000416				11/01/2044	47
https://www.nrc.gov/info-finder/reactors/gg1.html					58

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	2012–2017* Capacity Factor (Percent)
H.B. Robinson Steam Electric Plant, Unit 2	II	PWR-DRYAMB	2,339	04/13/1967	85
Duke Energy Progress, Inc.		WEST 3LP	DPR-23	07/31/1970	85
Hartsville, SC		EBSO		03/07/1971	86
(26 miles NW of Florence, SC)		EBSO		04/19/2004	85
05000261				07/31/2030	95
https://www.nrc.gov/info-finder/reactors/rob2.html					88
Hope Creek Generating Station, Unit 1	I	BWR-MARK 1	3,902	11/04/1974	93
PSEG Nuclear, LLC		GE 4	NPF-57	07/25/1986	80
Hancocks Bridge, NJ		BECH		12/20/1986	102
(18 miles SE of Wilmington, DE)		BECH		07/20/2011	83
05000354				04/11/2046	85
https://www.nrc.gov/info-finder/reactors/hope.html					94
Indian Point Nuclear Generating, Unit 2	I	PWR-DRYAMB	3,216	10/14/1966	90
Entergy Nuclear Indian Point 2, LLC		WEST 4LP	DPR-26	09/28/1973	77
Entergy Nuclear Operations, Inc.		UE&C		08/01/1974	93
Buchanan, NY		WDCO		N/A	77
(24 miles N of New York, NY)				09/28/2013	53
05000247					73
https://www.nrc.gov/info-finder/reactors/ip2.html					
Indian Point Nuclear Generating, Unit 3	I	PWR-DRYAMB	3,216	08/13/1969	100
Entergy Nuclear Indian Point 3, LLC		WEST 4LP	DPR-64	12/12/1975	94
Entergy Nuclear Operations, Inc.		UE&C		08/30/1976	98
Buchanan, NY		WDCO		N/A	86
(24 miles N of New York, NY)				12/12/2015	102
05000286					73
https://www.nrc.gov/info-finder/reactors/ip3.html					
James A. FitzPatrick Nuclear Power Plant	I	BWR-MARK 1	2,536	05/20/1970	84
Exelon Generation Co., LLC		GE 4	DPR-59	10/17/1974	89
Scriba, NY		S&W		07/28/1975	79
(6 miles NE of Oswego, NY)		S&W		09/08/2008	96
05000333				10/17/2034	76
https://www.nrc.gov/info-finder/reactors/fitz.html					80
Joseph M. Farley Nuclear Plant, Unit 1	II	PWR-DRYAMB	2,775	08/16/1972	91
Southern Nuclear Operating Co.		WEST 3LP	NPF-2	06/25/1977	90
Columbia, AL		SSI		12/01/1977	102
(18 miles S of Dothan, AL)		DANI		05/12/2005	86
05000348				06/25/2037	86
https://www.nrc.gov/info-finder/reactors/far1.html					100
Joseph M. Farley Nuclear Plant, Unit 2	II	PWR-DRYAMB	2,775	08/16/1972	104
Southern Nuclear Operating Co.		WEST 3LP	NPF-8	03/31/1981	91
Columbia, AL		SSI		07/30/1981	89
(18 miles S of Dothan, AL)		BECH		05/12/2005	98
05000364				03/31/2041	90
https://www.nrc.gov/info-finder/reactors/far2.html					91

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	2012–2017* Capacity Factor (Percent)
LaSalle County Station, Unit 1	III	BWR-MARK 2	3,546	09/10/1973	97
Exelon Generation Co., LLC		GE 5	NPF-11	04/17/1982	95
Marseilles, IL		S&L		01/01/1984	93
(11 miles SE of Ottawa, IL)		CWE		10/19/2016	99
05000373				04/17/2042	89
https://www.nrc.gov/info-finder/reactors/lasa1.html					96
LaSalle County Station, Unit 2	III	BWR-MARK 2	3,546	09/10/1973	103
Exelon Generation Co., LLC		GE 5	NPF-18	12/16/1983	88
Marseilles, IL		S&L		10/19/1984	95
(11 miles SE of Ottawa, IL)		CWE		10/19/2016	83
05000374				12/16/2043	95
https://www.nrc.gov/info-finder/reactors/lasa2.html					88
Limerick Generating Station, Unit 1	I	BWR-MARK 2	3,515	06/19/1974	85
Exelon Generation Co., LLC		GE 4	NPF-39	08/08/1985	101
Limerick, PA		BECH		02/01/1986	91
(21 miles NW of Philadelphia, PA)		BECH		10/20/2014	100
05000352				10/26/2044	93
https://www.nrc.gov/info-finder/reactors/lim1.html					100
Limerick Generating Station, Unit 2	I	BWR-MARK 2	3,515	06/19/1974	95
Exelon Generation Co., LLC		GE 4	NPF-85	08/25/1989	94
Limerick, PA		BECH		01/08/1990	99
(21 miles NW of Philadelphia, PA)		BECH		10/20/2014	89
05000353				06/22/2049	101
https://www.nrc.gov/info-finder/reactors/lim2.html					86
McGuire Nuclear Station, Unit 1	II	PWR-ICECND	3,411	02/23/1973	105
Duke Energy Carolinas, LLC		WEST 4LP	NPF-9	07/08/1981	82
Huntersville, NC		DUKE		12/01/1981	82
(17 miles N of Charlotte, NC)		DUKE		12/05/2003	95
05000369				06/12/2041	89
https://www.nrc.gov/info-finder/reactors/mcg1.html					90
McGuire Nuclear Station, Unit 2	II	PWR-ICECND	3,411	02/23/1973	82
Duke Energy Carolinas, LLC		WEST 4LP	NPF-17	05/27/1983	95
Huntersville, NC		DUKE		03/01/1984	94
(17 miles N of Charlotte, NC)		DUKE		12/05/2003	87
05000370				03/03/2043	97
https://www.nrc.gov/info-finder/reactors/mcg2.html					86
Millstone Power Station, Unit 2	I	PWR-DRYAMB	2,700	12/11/1970	83
Dominion Nuclear Connecticut, Inc.		CE	DPR-65	09/26/1975	95
Waterford, CT		BECH		12/26/1975	85
(3.2 miles WSW of New London, CT)		BECH		11/28/2005	85
05000336				07/31/2035	93
https://www.nrc.gov/info-finder/reactors/mill2.html					85

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	2012–2017* Capacity Factor (Percent)
Millstone Power Station, Unit 3	I	PWR-DRYSUB	3,650	08/09/1974	100
Dominion Nuclear Connecticut, Inc.		WEST 4LP	NPF-49	01/31/1986	87
Waterford, CT		S&W		04/23/1986	87
(3.2 miles WSW of New London, CT)		S&W		11/28/2005	97
05000423				11/25/2045	83
https://www.nrc.gov/info-finder/reactors/mill3.html					89
Monticello Nuclear Generating Plant, Unit 1	III	BWR-MARK 1	2,004	06/19/1967	101
Northern States Power Company-Minnesota		GE 3	DPR-22	01/09/1981[B]	50
Monticello, MN		BECH		06/30/1971	78
(30 miles NW of Minneapolis, MN)		BECH		11/08/2006	78
05000263				09/08/2030	93
https://www.nrc.gov/info-finder/reactors/mont.html					86
Nine Mile Point Nuclear Station, Unit 1	I	BWR-MARK 1	1,850	04/12/1965	87
Nine Mile Point Nuclear Station, LLC		GE 2	DPR-63	12/26/1974[C]	88
Scriba, NY		NIAG		12/01/1969	98
(6 miles NE of Oswego, NY)		S&W		10/31/2006	88
05000220				08/22/2029	96
https://www.nrc.gov/info-finder/reactors/nmp1.html					87
Nine Mile Point Nuclear Station, Unit 2	I	BWR-MARK 2	3,988	06/24/1974	83
Nine Mile Point Nuclear Station, LLC		GE 5	NPF-69	07/02/1987	99
Scriba, NY		S&W		03/11/1988	87
(6 miles NE of Oswego, NY)		S&W		10/31/2006	100
05000410				10/31/2046	92
https://www.nrc.gov/info-finder/reactors/nmp2.html					101
North Anna Power Station, Unit 1	II	PWR-DRYSUB	2,940	02/19/1971	89
Virginia Electric & Power Co.		WEST 3LP	NPF-4	04/01/1978	89
Mineral (Louisa County), VA		S&W		06/06/1978	100
(40 miles NW of Richmond, VA)		S&W		03/20/2003	91
05000338				04/01/2038	89
https://www.nrc.gov/info-finder/reactors/na1.html					99
North Anna Power Station, Unit 2	II	PWR-DRYSUB	2,940	02/19/1971	99
Virginia Electric & Power Co.		WEST 3LP	NPF-7	08/21/1980	85
Mineral (Louisa County), VA		S&W		12/14/1980	92
(40 miles NW of Richmond, VA)		S&W		03/20/2003	99
05000339				08/21/2040	87
https://www.nrc.gov/info-finder/reactors/na2.html					89

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.

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	2012–2017* Capacity Factor (Percent)
Oconee Nuclear Station, Unit 1	II	PWR-DRYAMB	2,568	11/06/1967	90
Duke Energy Carolinas, LLC		B&W LLP	DPR-38	02/06/1973	91
Seneca, SC		DBDB		07/15/1973	91
(30 miles W of Greenville, SC)		DUKE		05/23/2000	96
05000269				02/06/2033	83
https://www.nrc.gov/info-finder/reactors/oco1.html					95
Oconee Nuclear Station, Unit 2	II	PWR-DRYAMB	2,568	11/06/1967	102
Duke Energy Carolinas, LLC		B&W LLP	DPR-47	10/06/1973	82
Seneca, SC		DBDB		09/09/1974	101
(30 miles W of Greenville, SC)		DUKE		05/23/2000	89
05000270				10/06/2033	98
https://www.nrc.gov/info-finder/reactors/oco2.html					88
Oconee Nuclear Station, Unit 3	II	PWR-DRYAMB	2,568	11/06/1967	86
Duke Energy Carolinas, LLC		B&W LLP	DPR-55	07/19/1974	97
Seneca, SC		DBDB		12/16/1974	92
(30 miles W of Greenville, SC)		DUKE		05/23/2000	97
05000287				07/19/2034	91
https://www.nrc.gov/info-finder/reactors/oco3.html					97
Oyster Creek Nuclear Generating Station	I	BWR-MARK 1	1,930	12/15/1964	88
Exelon Generation Co., LLC		GE 2	DPR-16	07/02/1991[D]	106
Forked River, NJ		B&R		12/10/1969	90
(9 miles S of Toms River, NJ)		B&R		04/08/2009	109
05000219				04/09/2029	95
https://www.nrc.gov/info-finder/reactors/oc.html					113
Palisades Nuclear Plant	III	PWR-DRYAMB	2,565.4	03/14/1967	74
Entergy Nuclear Operations, Inc.		CE	DPR-20	02/21/1991[E]	85
Covert, MI		BECH		12/31/1971	86
(5 miles S of South Haven, MI)		BECH		01/17/2007	89
05000255				03/24/2031	99
https://www.nrc.gov/info-finder/reactors/pali.html					86
Palo Verde Nuclear Generating Station, Unit 1	IV	PWR-DRYAMB	3,990	05/25/1976	100
Arizona Public Service Company		CE 80-2L	NPF-41	06/01/1985	85
Wintersburg, AZ		BECH		01/28/1986	90
(50 miles W of Phoenix, AZ)		BECH		04/21/2011	94
05000528				06/01/2045	83
https://www.nrc.gov/info-finder/reactors/palo1.html					85
Palo Verde Nuclear Generating Station, Unit 2	IV	PWR-DRYAMB	3,990	05/25/1976	90
Arizona Public Service Company		CE 80-2L	NPF-51	04/24/1986	91
Wintersburg, AZ		BECH		09/19/1986	90
(50 miles W of Phoenix, AZ)		BECH		04/21/2011	85
05000529				04/24/2046	95
https://www.nrc.gov/info-finder/reactors/palo2.html					86

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	2012–2017* Capacity Factor (Percent)
Palo Verde Nuclear Generating Station, Unit 3	IV	PWR-DRYAMB	3,990	05/25/1976	88
Arizona Public Service Company		CE80-2L	NPF-74	11/25/1987	79
Wintersburg, AZ		BECH		01/08/1988	101
(50 miles W of Phoenix, AZ)		BECH		04/21/2011	85
05000530				11/25/2047	85
https://www.nrc.gov/info-finder/reactors/palo3.html					92
Peach Bottom Atomic Power Station, Unit 2	I	BWR-MARK 1	4,016	01/31/1968	88
Exelon Generation Co., LLC		GE 4	DPR-44	10/25/1973	100
Delta, PA		BECH		07/05/1974	88
(17.9 miles S of Lancaster, PA)		BECH		05/07/2003	99
05000277				08/08/2033	96
https://www.nrc.gov/info-finder/reactors/pb2.html					92
Peach Bottom Atomic Power Station, Unit 3	I	BWR-MARK 1	4,016	01/31/1968	103
Exelon Generation Co., LLC		GE 4	DPR-56	07/02/1974	85
Delta, PA		BECH		12/23/1974	103
(17.9 miles S of Lancaster, PA)		BECH		05/07/2003	75
05000278				07/02/2034	95
https://www.nrc.gov/info-finder/reactors/pb3.html					86
Perry Nuclear Power Plant, Unit 1	III	BWR-MARK 3	3,758	05/03/1977	92
FirstEnergy Nuclear Operating Co.		GE 6	NPF-58	11/13/1986	73
Perry, OH		GIL		11/18/1987	96
(35 miles NE of Cleveland, OH)		KAIS		N/A	83
05000440				03/18/2026	91
https://www.nrc.gov/info-finder/reactors/perr1.html					85
Pilgrim Nuclear Power Station	I	BWR-MARK 1	2,028	08/26/1968	98
Entergy Nuclear Operations, Inc.		GE 3	DPR-35	06/08/1972	74
Plymouth, MA		BECH		12/01/1972	97
(38 miles SE of Boston, MA)		BECH		05/29/2012	85
05000293				06/08/2032	92
https://www.nrc.gov/info-finder/reactors/pilg.html					86
Point Beach Nuclear Plant, Unit 1	III	PWR-DRYAMB	1,800	07/19/1967	100
NextEra Energy Point Beach, LLC		WEST 2LP	DPR-24	10/05/1970	84
Two Rivers, WI		BECH		12/21/1970	90
(13 miles NW of Manitowoc, WI)		BECH		12/22/2005	92
05000266				10/05/2030	86
https://www.nrc.gov/info-finder/reactors/poin1.html					86
Point Beach Nuclear Plant, Unit 2	III	PWR-DRYAMB	1,800	07/25/1968	89
NextEra Energy Point Beach, LLC		WEST 2LP	DPR-27	03/08/1973[F]	93
Two Rivers, WI		BECH		10/01/1972	90
(13 miles NW of Manitowoc, WI)		BECH		12/22/2005	94
05000301				03/08/2033	86
https://www.nrc.gov/info-finder/reactors/poin2.html					85

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	2012–2017* Capacity Factor (Percent)
Prairie Island Nuclear Generating Plant, Unit 1	III	PWR-DRYAMB	1,677	06/25/1968	81
Northern States Power Co.—Minnesota		WEST 2LP	DPR-42	04/05/1974[G]	90
Welch, MN		FLUR		12/16/1973	84
(28 miles SE of Minneapolis, MN)		NSP		06/27/2011	77
05000282				08/09/2033	81
https://www.nrc.gov/info-finder/reactors/prai1.html					88
Prairie Island Nuclear Generating Plant, Unit 2	III	PWR-DRYAMB	1,677	06/25/1968	74
Northern States Power Co.—Minnesota		WEST 2LP	DPR-60	10/29/1974	59
Welch, MN		FLUR		12/21/1974	101
(28 miles SE of Minneapolis, MN)		NSP		06/27/2011	65
05000306				10/29/2034	78
https://www.nrc.gov/info-finder/reactors/prai2.html					80
Quad Cities Nuclear Power Station, Unit 1	III	BWR-MARK 1	2,957	02/15/1967	102
Exelon Generation Co., LLC		GE 3	DPR-29	12/14/1972	85
Cordova, IL		S&L		02/18/1973	103
(20 miles NE of Moline, IL)		UE&C		10/28/2004	83
05000254				12/14/2032	92
https://www.nrc.gov/info-finder/reactors/quad1.html					85
Quad Cities Nuclear Power Station, Unit 2	III	BWR-MARK 1	2,957	02/15/1967	92
Exelon Generation Co., LLC		GE 3	DPR-30	12/14/1972	91
Cordova, IL		S&L		03/10/1973	90
(20 miles NE of Moline, IL)		UE&C		10/28/2004	95
05000265				12/14/2032	85
https://www.nrc.gov/info-finder/reactors/quad2.html					89
R.E. Ginna Nuclear Power Plant	I	PWR-DRYAMB	1,775	04/25/1966	90
R.E. Ginna Nuclear Power Plant, LLC		WEST 2LP	DPR-18	09/19/1969	93
Ontario, NY		GIL		07/01/1970	91
(20 miles NE of Rochester, NY)		BECH		05/19/2004	89
05000244				09/18/2029	94
https://www.nrc.gov/info-finder/reactors/ginn.html					87
River Bend Station, Unit 1	IV	BWR-MARK 3	3,091	03/25/1977	91
Entergy Nuclear Operations, Inc.		GE 6	NPF-47	11/20/1985	84
St. Francisville, LA		S&W		06/16/1986	96
(24 miles NNW of Baton Rouge, LA)		S&W		N/A	76
05000458				08/29/2025	78
https://www.nrc.gov/info-finder/reactors/rbs1.html					77
St. Lucie Plant, Unit 1	II	PWR-DRYAMB	3,020	07/01/1970	72
Florida Power & Light Co.		CE	DPR-67	03/01/1976	74
Jensen Beach, FL		EBSO		12/21/1976	101
(10 miles SE of Ft. Pierce, FL)		EBSO		10/02/2003	83
05000335				03/01/2036	68
https://www.nrc.gov/info-finder/reactors/stl1.html					90

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	2012–2017* Capacity Factor (Percent)
St. Lucie Plant, Unit 2	II	PWR-DRYAMB	3,020	05/02/1977	68
Florida Power & Light Co.		CE	NPF-16	04/06/1983	91
Jensen Beach, FL		EBSO		08/08/1983	82
(10 miles SE of Ft. Pierce, FL)		EBSO		10/02/2003	77
05000389				04/06/2043	85
https://www.nrc.gov/info-finder/reactors/stl2.html					84
Salem Nuclear Generating Station, Unit 1	I	PWR-DRYAMB	3,459	09/25/1968	97
PSE&G Nuclear, LLC		WEST 4LP	DPR-70	12/01/1976	88
Hancocks Bridge, NJ		PSEG		06/30/1977	86
(18 miles SE of Wilmington, DE)		UE&C		06/30/2011	95
05000272				08/13/2036	99
https://www.nrc.gov/info-finder/reactors/salm1.html					90
Salem Nuclear Generating Station, Unit 2	I	PWR-DRYAMB	3,459	09/25/1968	88
PSE&G Nuclear, LLC		WEST 4LP	DPR-75	05/20/1981	100
Hancocks Bridge, NJ		PSEG		10/13/1981	73
(18 miles SE of Wilmington, DE)		UE&C		06/30/2011	85
05000311				04/18/2040	71
https://www.nrc.gov/info-finder/reactors/salm2.html					85
Seabrook Station, Unit 1	I	PWR-DRYAMB	3,648	07/07/1976	75
NextEra Energy Seabrook, LLC		WEST 4LP	NPF-86	03/15/1990	100
Seabrook, NH		UE&C		08/19/1990	93
(13 miles S of Portsmouth, NH)		UE&C		N/A	87
05000443				03/15/2030	90
https://www.nrc.gov/info-finder/reactors/seab1.html					92
Sequoyah Nuclear Plant, Unit 1	II	PWR-ICECND	3,455	05/27/1970	89
Tennessee Valley Authority		WEST 4LP	DPR-77	09/17/1980	83
Soddy-Daisy, TN		TVA		07/01/1981	100
(16 miles NE of Chattanooga, TN)		TVA		09/24/2015	87
05000327				09/17/2040	90
https://www.nrc.gov/info-finder/reactors/seq1.html					88
Sequoyah Nuclear Plant, Unit 2	II	PWR-ICECND	3,455	05/27/1970	77
Tennessee Valley Authority		WEST 4LP	DPR-79	09/15/1981	90
Soddy-Daisy, TN		TVA		06/01/1982	90
(16 miles NE of Chattanooga, TN)		TVA		09/25/2015	73
05000328				09/15/2041	95
https://www.nrc.gov/info-finder/reactors/seq2.html					83
Shearon Harris Nuclear Power Plant, Unit 1	II	PWR-DRYAMB	2,948	01/27/1978	90
Duke Energy Progress, Inc.		WEST 3LP	NPF-63	10/24/1986	83
New Hill, NC		EBSO		05/02/1987	99
(20 miles SW of Raleigh, NC)		DANI		12/17/2008	87
05000400				10/24/2046	88
https://www.nrc.gov/info-finder/reactors/har1.html					99

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	2012–2017* Capacity Factor (Percent)
South Texas Project, Unit 1	IV	PWR-DRYAMB	3,853	12/22/1975	93
STP Nuclear Operating Co.		WEST 4LP	NPF-76	03/22/1988	91
Bay City, TX		BECH		08/25/1988	81
(90 miles SW of Houston, TX)		EBSO		09/28/2017	78
05000498				08/20/2047	73
https://www.nrc.gov/info-finder/reactors/stp1.html					85
South Texas Project, Unit 2	IV	PWR-DRYAMB	3,853	12/22/1975	72
STP Nuclear Operating Co.		WEST 4LP	NPF-80	03/28/1989	59
Bay City, TX		BECH		06/19/1989	103
(90 miles SW of Houston, TX)		EBSO		09/28/2017	85
05000499				12/15/2048	92
https://www.nrc.gov/info-finder/reactors/stp2.html					97
Surry Power Station, Unit 1	II	PWR-DRYSUB	2,587	06/25/1968	92
Virginia Electric and Power Co.		WEST 3LP	DPR-32	05/25/1972	91
Surry, VA		S&W		12/22/1972	99
(17 miles NW of Newport News, VA)		S&W		03/20/2003	76
05000280				05/25/2032	96
https://www.nrc.gov/info-finder/reactors/sur1.html					101
Surry Power Station, Unit 2	II	PWR-DRYSUB	2,587	06/25/1968	91
Virginia Electric and Power Co.		WEST 3LP	DPR-37	01/29/1973	101
Surry, VA		S&W		05/01/1973	95
(17 miles NW of Newport News, VA)		S&W		03/20/2003	82
05000281				01/29/2033	101
https://www.nrc.gov/info-finder/reactors/sur2.html					93
Susquehanna Steam Electric Station, Unit 1	I	BWR-MARK 2	3,952	11/03/1973	70
Susquehanna Nuclear, LLC		GE 4	NPF-14	07/17/1982	87
Berwick (Luzerne County), PA		BECH		06/08/1983	83
(70 miles NE of Harrisburg, PA)		BECH		11/24/2009	76
05000387				07/17/2042	77
https://www.nrc.gov/info-finder/reactors/susq1.html					97
Susquehanna Steam Electric Station, Unit 2	I	BWR-MARK 2	3,952	11/03/1973	83
Susquehanna Nuclear, LLC		GE 4	NPF-22	03/23/1984	80
Berwick (Luzerne County), PA		BECH		02/12/1985	88
(70 miles NE of Harrisburg, PA)		BECH		11/24/2009	82
05000388				03/23/2044	93
https://www.nrc.gov/info-finder/reactors/susq2.html					86
Three Mile Island Nuclear Station, Unit 1	I	PWR-DRYAMB	2,568	05/18/1968	100
Exelon Generation Co., LLC		B&W LLP	DPR-50	04/19/1974	78
Middletown, PA		GIL		09/02/1974	104
(10 miles SE of Harrisburg, PA)		UE&C		10/22/2009	77
05000289				04/19/2034	82
https://www.nrc.gov/info-finder/reactors/tmi1.html					80

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	2012–2017* Capacity Factor (Percent)
Turkey Point Nuclear Generating, Unit 3	II	PWR-DRYAMB	2,644	04/27/1967	40
Florida Power & Light Co.		WEST 3LP	DPR-31	07/19/1972	81
Homestead, FL		BECH		12/14/1972	84
(20 miles S of Miami, FL)		BECH		06/06/2002	78
05000250				07/19/2032	93
https://www.nrc.gov/info-finder/reactors/tp3.html					80
Turkey Point Nuclear Generating, Unit 4	II	PWR-DRYAMB	2,644	04/27/1967	85
Florida Power & Light Co.		WEST 3LP	DPR-41	04/10/1973	70
Homestead, FL		BECH		09/07/1973	88
(20 miles S of Miami, FL)		BECH		06/06/2002	106
05000251				04/10/2033	99
https://www.nrc.gov/info-finder/reactors/tp4.html					98
Virgil C. Summer Nuclear Station, Unit 1	II	PWR-DRYAMB	2,900	03/21/1973	86
South Carolina Electric & Gas Co.		WEST 3LP	NPF-12	11/12/1982	93
Jenkinsville, SC		GIL		01/01/1984	81
(26 miles NW of Columbia, SC)		DANI		04/23/2004	79
05000395				08/06/2042	96
https://www.nrc.gov/info-finder/reactors/sum.html					77
Vogtle Electric Generating Plant, Unit 1	II	PWR-DRYAMB	3,625.6	06/28/1974	91
Southern Nuclear Operating Co., Inc.		WEST 4LP	NPF-68	03/16/1987	101
Waynesboro, GA		SBEC		06/01/1987	87
(26 miles SE of Augusta, GA)		GPC		06/03/2009	91
05000424				01/16/2047	101
https://www.nrc.gov/info-finder/reactors/vog1.html					93
Vogtle Electric Generating Plant, Unit 2	II	PWR-DRYAMB	3,625.6	06/28/1974	102
Southern Nuclear Operating Co., Inc.		WEST 4LP	NPF-81	03/31/1989	87
Waynesboro, GA		SBEC		05/20/1989	92
(26 miles SE of Augusta, GA)		GPC		06/03/2009	100
05000425				02/09/2049	94
https://www.nrc.gov/info-finder/reactors/vog2.html					96
Waterford Steam Electric Station, Unit 3	IV	PWR-DRYAMB	3,716	11/14/1974	77
Entergy Operations, Inc.		COMB CE	NPF-38	03/16/1985	89
Killona, LA		EBSO		09/24/1985	90
(25 miles W of New Orleans, LA)		EBSO		N/A	80
05000382				12/18/2024	96
https://www.nrc.gov/info-finder/reactors/wat3.html					80
Watts Bar Nuclear Plant, Unit 1	II	PWR-ICECND	3,459	01/23/1973	87
Tennessee Valley Authority		WEST 4LP	NPF-90	02/07/1996	90
Spring City, TN		TVA		05/27/1996	89
(60 miles SW of Knoxville, TN)		TVA		N/A	76
05000390				11/09/2035	85
https://www.nrc.gov/info-finder/reactors/wb1.html					77

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	2012–2017* Capacity Factor (Percent)
Watts Bar Nuclear Plant, Unit 2 Tennessee Valley Authority Spring City, TN (60 miles SW of Knoxville, TN) 05000391 *https://www.nrc.gov/info-finder/reactors/wb2.html*	II	PWR-ICECND WEST 4LP TVA TVA	3,411 NPF-96	01/24/1973 10/22/2015 10/19/2016 N/A 10/22/2055	— — — 0 26 45
Wolf Creek Generating Station, Unit 1 Wolf Creek Nuclear Operating Corp. Burlington (Coffey County), KS (28 miles SE of Emporia, KS) 05000482 *https://www.nrc.gov/info-finder/reactors/wc.html*	IV	PWR-DRYAMB WEST 4LP BECH DANI	3,565 NPF-42	05/17/1977 06/04/1985[H] 09/03/1985 11/20/2008 03/11/2045	80 65 83 78 74 96

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	2012–2017* Capacity Factor (Percent)
Bellefonte Nuclear Power Station, Unit 1** Tennessee Valley Authority (6 miles NE of Scottsboro, AL) 05000438 *https://www.nrc.gov/reactors/new-reactors/col/bellefonte.html*	II	PWR-DRYAMB B&W 205 TVA TVA	3,763	12/24/1974	N/A
Bellefonte Nuclear Power Station, Unit 2** Tennessee Valley Authority (6 miles NE of Scottsboro, AL) 05000439 *https://www.nrc.gov/reactors/new-reactors/col/bellefonte.html*	II	PWR-DRYAMB B&W 205 TVA TVA	3,763	12/24/1974	N/A
Enrico Fermi Nuclear Plant, Unit 3 DTE Electric Company Newport, MI (25 miles NE of Toledo, OH) 05200033 *https://www.nrc.gov/reactors/new-reactors/col-holder/ferm3.html*	III	ESBWR GEH	4,500 NPF-95	05/01/2015	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

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 License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2012–2017* Capacity Factor (Percent)
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
Turkey Point Nuclear Generating, Unit 6 Florida Power and LIght Homestead, FL (20 miles S of Miami, FL) 05200040 *https://www.nrc.gov/reactors/new-reactors/col-holder/tp6.html*	II	PWR AP1000	3,400 NPF-104	04/12/2018	N/A
Turkey Point Nuclear Generating, Unit 7 Florida Power and LIght Homestead, FL (20 miles S of Miami, FL) 05200041 *https://www.nrc.gov/reactors/new-reactors/col-holder/tp7.html*	II	PWR AP1000	3,400 NPF-105	04/12/2018	N/A
Virgil C. Summer Nuclear Station, Unit 2[A] 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[A] 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: On July 31, 2017, South Carolina Electric & Gas (SCE&G) 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	2012–2017* 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[B] 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[B] 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

B: In September 2017, Duke Energy announced cancellation of William States Lee nuclear power plant, Units 3 and 4.

* Average capacity factor is listed in year order starting with 2012.
** Bellefonte Units 1 and 2 are under the Commission Policy Statement on Deferred Plants (52 FR 38077; October 14, 1987).
*** In June 2018, Nuclear Innovation North America submitted a letter requesting that South Texas Project, Units 3 and 4, COLs be withdrawn.
Note: Plant names and data are as identified on the license as of July 2018; the next printed update will be in August 2019.
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 License (Construction and Operating)									
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	Withdrawn–04/26/2018
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	COL Issued 04/12/2018
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	01/6/17	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	05200047	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, Bellefonte, 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 , and by letter dated December 27, 2017, SCE&G requested withdrawl of the corresponding COLs; NRC action is still pending. In September 2017, Duke Energy announced cancellation of William States Lee nuclear power plant, Units 3 and 4 project. As of June 2018, Nuclear Innovation North America submitted a letter requesting that the COLs for South Texas Project, Units 3 and 4, be withdrawn.
Data are current as of May 2018; the next printed update will be in August 2019. 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
Fermi 1 Newport, MI 05000016	SCF 200	CE	05/10/1963 09/22/1972 2032	SAFSTOR SAFSTOR
Fort Calhoun 1 Ft. Calhoun, NE 05000285	PWR–DRYAMB 1,500	CE	08/09/1973 10/24/2016 2076	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
GE EVESR Sunol, CA 05000183	Experimental Superheat Reactor 12.5	GE	11/12/1963 02/01/1967 04/15/1970 01/1/2019	SAFSTOR Possession Only License Expired 01/2016
GE VBWR (Vallecitos) Sunol, CA 05000018	BWR 50	GE	08/31/1957 12/09/1963 2019	SAFSTOR SAFSTOR
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 2019	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 2020	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

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 1* San Clemente, CA 05000206	PWR 1,347	WEST	03/27/1967 11/30/1992 12/30/2030	DECON SAFSTOR
San Onofre 2* San Clemente, CA 05000361	PWR CE 3,438	CE	02/16/1982 06/12/2013 2032	DECON DECON in Progress
San Onofre 3 San Clemente, CA 05000362	PWR CE 3,438	CE	11/15/1982 06/12/2013 2032	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	** SAFSTOR
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

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 1 Zion, IL 05000295	PWR 3,250	WEST	10/19/1973 02/21/1997 2019	DECON DECON in Progress
Zion 2 Zion, IL 05000304	PWR 3,250	WEST	11/14/1973 09/19/1996 2019	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 *https://energy.gov/lm/sites/lm-sites*. CVTR, Elk River, and Shippingport decommissioned reactor sites were either decommissioned before 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 2018. The next printed update will be in August 2019.

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

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

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
Sundesert 1 & 2 San Diego Gas & Electric Company 16 miles SW of Blythe, CA	PWR 974	1978 Under CP Review 05000582 & 583
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

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
Bellefonte 3 & 4 Tennessee Valley Authority Scottsboro, Jackson County, AL	AP1000 1,100	December 2, 2016 With COL Review 05200014 & 05200015
Bell Bend Bell Bend, LLC Luzerne County, PA	U.S. EPR 1,600	September 22, 2016 With COL Review 5200039
Callaway 2 Union Electric Company (Ameren UE) Fulton, Callaway County , MO	U.S. EPR 1,600	October, 29, 2015 With COL Review 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
Levy 1 and 2 Duke Energy Florida Levy County, FL	AP1000 1,100	April 26, 2018 With COL 05200029 & 05200030
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	June 14, 2016 With COL Review 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. Applications were withdrawn for Calvert Cliffs, Grand Gulf, Nine Mile Point, Victoria County, and Callaway. On July 31, 2017, South Carolina Electric & Gas (SCE&G) announced its decision to cease construction on V.C. Summer nuclear power plant, Units 2 and 3, and the licensee has requested that the COLs be withdrawn. NRC action is still pending.In October 2017, Duke Energy has announced plans to cancel reactors at Levy County, FL, and William States Lee, SC. Units 3 and 4. In June 2018, Nuclear Innovation North America submitted a letter requesting that the COLs for South Texas Project, Units 3 and 4, be withdrawn.

Data are current as of July 2018; the next printed update will be in August 2019. NRC-abbreviated reactor names listed.

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

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

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 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 FitzPatrick 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.wolfcreeknuclear.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 2018; the next printed update will be in August 2019.

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
2015	Watts Bar 2

* 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 listed. Data are current as of July 2018; the next printed update will be in August 2019.

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
	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
	FitzPatrick
	Hatch 1
	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. It is limited to reactors licensed to operate. NRC-abbreviated reactor names listed. Data are current as of July 2018; the next printed update will be in August 2019.

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 2018; the next printed update will be in August 2019.

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

APPENDIX I

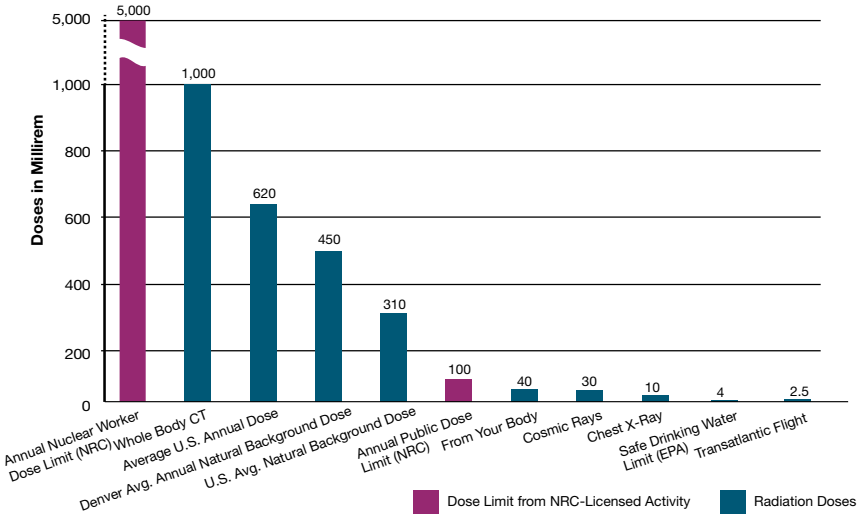
Nuclear Research and Test Reactors under Decommissioning Regulated by the NRC

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 2018; the next printed update will be in August 2019.

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
Commercial Nuclear Power Plant Licensing History 1955–2018

Year	Original Licensing Regulations (10 CFR Part 50)[1]		Current Licensing Regulations (10 CFR Part 52)[4]			
	CP Issued[2]	Full-Power OL Issued[3]	COL Issued[5]	Operating COLs[6]	Permanent Shutdowns[7]	Operable Units[8]
1955	1	0	– –	– –	0	0
1956	3	0	– –	– –	0	0
1957	1	1	– –	– –	0	1
1958	0	0	– –	– –	0	1
1959	3	1	– –	– –	0	2
1960	7	1	– –	– –	0	3
1961	0	0	– –	– –	0	3
1962	1	6	– –	– –	0	9
1963	1	2	– –	– –	1	11
1964	3	3	– –	– –	1	13
1965	1	0	– –	– –	0	13
1966	5	2	– –	– –	1	14
1967	14	3	– –	– –	2	15
1968	23	0	– –	– –	1	13
1969	7	4	– –	– –	0	17
1970	10	3	– –	– –	1	20
1971	4	2	– –	– –	0	22
1972	8	6	– –	– –	2	27
1973	14	15	– –	– –	0	42
1974	23	15	– –	– –	2	55
1975	9	2	– –	– –	0	57
1976	9	7	– –	– –	1	63
1977	15	4	– –	– –	0	67
1978	13	4	– –	– –	1	70
1979	2	0	– –	– –	1	69
1980	0	2	– –	– –	0	71
1981	0	4	– –	– –	0	75
1982	0	4	– –	– –	1	78
1983	0	3	– –	– –	0	81
1984	0	6	– –	– –	0	87
1985	0	9	– –	– –	0	96
1986	0	5	– –	– –	0	101
1987	0	8	– –	– –	1	107
1988	0	2	– –	– –	0	109
1989	0	4	– –	– –	3	111
1990	0	2	– –	– –	0	112
1991	0	0	– –	– –	1	111
1992	0	0	– –	– –	2	109
1993	0	1	– –	– –	0	110
1994	0	0	– –	– –	0	109
1995	0	0	– –	– –	0	109
1996	0	1	– –	– –	3	109
1997	0	0	0	0	2	107
1998	0	0	0	0	1	104
1999-2011	0	0	0	0	0	104

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

APPENDIX K
Commercial Nuclear Power Plant Licensing History 1955–2018 (continued)

Year	Original Licensing Regulations (10 CFR Part 50)[1]		Current Licensing Regulations (10 CFR Part 52)[4]			
	CP Issued[2]	Full-Power OL Issued[3]	COL Issued[5]	Operating COLs[6]	Permanent Shutdowns[7]	Operable Units[8]
2012	0	0	4 units	0	0	104
2013	0	0	0	0	4	100
2014	0	0	0	0	1	99
2015	0	1	1 units	0	0	100
2016	0	0	4 units	0	1	99
2017	0	0	1 unit	0	0	99
2018	0	0	2 units	0	0	99
Total	177	133	12 units	0	34	– –

U.S. Atomic Energy Commission was the regulatory authority

– – Not applicable

1 Data in columns 1–3 are based on 10 CFR Part 50 and in columns 4–6 are based on 10 CFR Part 52

2 Issuance by regulatory authority of a permit, or equivalent permission, to begin construction. Under current licensing regulations, the construction permit is no longer issued separately from the operating license.

3 Numbers reflect permits or licenses issued in a given year, not extant permits or licenses.

4. Data in columns 4–6 are based on 10 CFR Part 52.

5 Number of applications received for combined licenses (construction and operating) in a given year, including one that was subsequently withdrawn. See Appendix A Part 52 on status of plant construction and Appendix B for more information on withdrawn licenses and received applications.

6 Issuance by regulatory authority of full-power operating license, or equivalent permission in a given year.

7 Number of operating plants transitioned to shutdown in a given year. Does not represent the total number of reactor units included.

8 The number of operable units equals the cumulative number of units holding full-power licenses minus the cumulative number of permanent shutdowns.

Source: U.S. Energy Information Administration/Annual Energy Review 2011 located at *www.eia.gov/aer.* and compilation of NRC information following 2011.

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

APPENDIX L
Materials Licenses by State

State	Number of Licenses NRC	Number of Licenses Agreement States
Alabama	20	380
Alaska	79	0
Arizona	11	342
Arkansas	6	209
California	70	1,728
Colorado	20	314
Connecticut	153	0
Delaware	50	0
District of Columbia	37	0
Florida	20	1,623
Georgia	22	405
Hawaii	65	0
Idaho	81	0
Illinois	25	620
Indiana	267	0
Iowa	1	155
Kansas	15	273
Kentucky	14	354
Louisiana	15	471
Maine	2	100
Maryland	64	535
Massachusetts	27	411
Michigan	435	0
Minnesota	13	151
Mississippi	5	283
Missouri	267	0
Montana	90	0
Nebraska	4	132
Nevada	5	239
New Hampshire	4	82
New Jersey	28	558
New Mexico	15	207
New York	23	993
North Carolina	22	572
North Dakota	3	85
Ohio	41	552
Oklahoma	19	234
Oregon	4	274
Pennsylvania	52	608
Rhode Island	2	44
South Carolina	6	348
South Dakota	42	0
Tennessee	24	520
Texas	58	1,509
Utah	14	205
Vermont	36	0
Virginia	57	389
Washington	21	337
West Virginia	193	0
Wisconsin	9	289
Wyoming	106	0
Puerto Rico	115	0
Virgin Islands	9	0
Guam	9	0
American Samoa	2	0
Northern Marianas	1	0
Total number of materials licenses in Agreement State jurisdiction		16,531
Total number of materials licenses in NRC jurisdiction		2,795
Total number of materials licenses in the United States		19,326

Agreement State States Pursuing Agreements

Notes: The NRC and Agreement State data are as of June 2018. These totals represent an estimate because the number of specific radioactive materials licenses per State may change daily. The next printed update will be in August 2019. 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 M
Major U.S. Fuel Cycle Facility Sites

Licensee	Location	Status	Docket #
Uranium Hexafluoride Conversion Facility			
Honeywell International, Inc.	Metropolis, IL	ready-idle*	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
Framatone, 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 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
Uranium Enrichment Laser Separation Facility			
GE-Hitachi Global Laser Enrichment, LLC	Wilmington, NC	license issued, construction not started	07007016
Depleted Uranium Deconversion Facility			
International Isotopes, Inc.	Hobbs, NM (Lea County)	license issued, construction not started	04009086

* The facility is being maintained with minimal operations to support a future return to production.

Note: AREVA Enrichment Services, LLC Eagle Rock Enrichment Facilities requested to terminate license on never-built facilities in a letter dated May 14, 2018. Data are current as of July 2018; the next printed update will be in August 2019.

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 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
	07201042	NUHOMS® EOS

Note: Data are current as of July 2018; the next printed update will be in August 2019. (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 O
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 HI-STORM FW	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 Magnastor	07200045
Clinton Exelon Generation Co.,LCC	GL	Holtec International	HI-STORM FW	07201046
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
Cooper Nuclear Station Nebraska Public Power District	GL	Transnuclear, Inc.	NUHOMS®-61BT	07200066
Crystal River Duke Energy, LLC	GL	Transnuclear, Inc.	NUHOMS®-32PT	07201035
Davis-Besse FirstEnergy Nuclear Operating Company	GL	Transnuclear, Inc.	NUHOMS®-24P NUHOMS®-32PTH	07200014
DC Cook Indiana/Michigan Power	GL	Holtec International	HI-STORM	07200072
Diablo Canyon Pacific Gas & Electric Co.	SL	Holtec International	HI-STORM 100	07200026

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

APPENDIX O
Dry Cask Spent Fuel Storage Licensees (continued)

Name Licensee	License Type	Vendor	Storage Model	Docket Number
Dresden Exelon Generation Company, LLC	GL	Holtec International	HI-STAR 100 HI-STORM 100	07200037
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
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-STORM100 HI-STORM100S	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	Holtec International	HI-STORM 100	07200042
Kewaunee Dominion Energy Kewaunee, Inc.	GL	Transnuclear, Inc. NAC International, Inc.	NUHOMS®-39PT Magnastor	07200064
La Salle Exelon Generation Co., LLC	GL	Holtec International	HI-STORM100	07200070
Lacrosse Dairyland Power	GL	NAC International, Inc.	NAC-MPC	07200046

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

APPENDIX O
Dry Cask Spent Fuel Storage Licensees (continued)

Name Licensee	License Type	Vendor	Storage Model	Docket Number
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. NAC International, Inc.	NUHOMS®-32PT Magnastor, NAC UMS	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. Transnuclear, Inc.	VSC-24 NUHOMS®-32PT NUHOMS®-24PT	07200007
Palo Verde Arizona Public Service Co.	GL	NAC International, Inc. Holtec International	NAC-UMS HI-STORM	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
Rancho Seco Sacramento Municipal Utility District	SL	Transnuclear, Inc.	NUHOMS®-24P	07200011

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

APPENDIX O
Dry Cask Spent Fuel Storage Licensees (continued)

Name Licensee	License Type	Vendor	Storage Model	Docket Number
R.E. Ginna Constellation Energy	GL	Transnuclear, Inc.	NUHOMS®-32PT	07200067
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
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
Virgil C. Summer South Carolina Electric & Gas	GL	Holtec International	HI-STORM FW	07201038
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 2018, and the next printed update will be in August 2019.
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 P

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

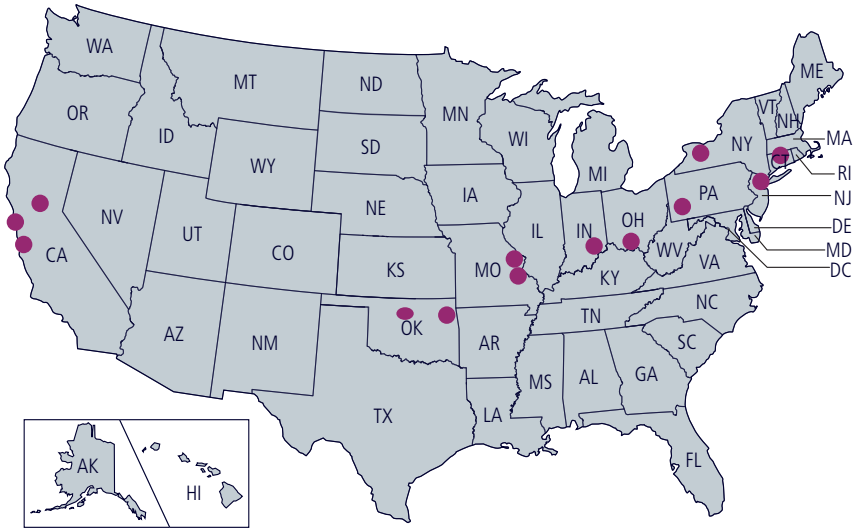
Beatty, NV, closed 1993
Sheffield, IL, closed 1978
Maxey Flats, KY, closed 1977
West Valley, NY, closed 1975

* Site of an active low-level waste disposal facility.

Note: Data are current as of July 2018; the next printed update will be in August 2019.

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

APPENDIX Q
NRC-Regulated Complex Materials Sites Undergoing Decommissioning



● NRC-regulated complex materials sites (13)

Company	Location
Alameda Naval Air Station	Alameda, CA
BWX Technology, Inc., Shallow Land Disposal Area	Vandergrift, PA
Cimarron Environmental Response Trust	Cimarron City, 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
Lead Cascade (Centrus)	Piketon, OH
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 2018. The next printed update will be in August 2019.

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

APPENDIX R
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	6,161	3	1,755	1	29	0
Armenia	2,411	1	408	0	0	1[P]
Bangladesh	0	0	0	1	1200	0
Belarus	0	0	0	2	2,388	0
Belgium	41,031	7	6,207	0	0	1[P]
Brazil	15,740	2	1,990	1	1,405	0
Bulgaria	15,549	2	2,000	0	0	4[P]
Canada	96,074	19	14,512	0	0	6[P]
China	247,469	39	36,959	18	21,145	0
Czech Republic	26,785	6	4,160	0	0	0
Finland	21,575	4	2,877	1	1,720	0
France	379,100	58	65,880	1	1,650	12[P]
Germany	72,163	7	10,013	0	0	29[P]
Hungary	15,219	4	2,000	0	0	0
India	35,000	22	6,780	7	5,300	0
Iran	6,366	1	1,000	0	0	0
Italy	0	0	0	0	0	4[P]
Japan	29,073	42	41,482	2	2,756	18[P]
Kazakhstan	0	0	0	0	0	1[P]
Korea, Republic of	141,098	24	23,518	4	5,600	1[P]
Lithuania	0	0	0	0	0	2[P]
Mexico	10,572	2	1,615	0	0	0
Netherlands	3,278	1	515	0	0	1[P]
Pakistan	7,867	5	1,430	2	2,200	0
Romania	10,561	2	1,411	0	0	0
Russia	187,499	37	30,159	6	4,919	6[P]
Slovakia	14,016	4	1,950	2	942	3[P]
Slovenia	5,968	1	727	0	0	0
South Africa	15,209	2	1,940	0	0	0
Spain	55,599	7	7,416	0	0	3[P]

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

APPENDIX R
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
Sweden	63,063	8	8,622	0	0	5P
Switzerland	19,502	5	3,467	0	0	1P
Turkey	0	0	0	1	1200	0
Ukraine	85,576	15	13,835	2	2,178	4P
United Arab Emirates	0	0	0	4	5,600	0
United Kingdom	63,877	15	10,362	0	0	30P
United States	804,950	99	105,514	2	2,500	34P

Overview of Worldwide Nuclear Power Reactors—As of May 6, 2018

Nuclear Electricity Supplied (GWh)	2,487,981
Net Installed Capacity (MWe)	393,843
Nuclear Power Reactors in Operation	450
Nuclear Power Reactors in Long-Term Shutdown	0
Nuclear Power Reactors in Permanent Shutdown	166
Nuclear Power Reactors under Construction	58

* Annual electrical power production for 2017. P = Permanent 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 https://www.iaea.org/pris/. Data are current as of May 2018; the next printed update will be in August 2019.

APPENDIX S
Nuclear Power Units by Reactor Type, Worldwide

Reactor Type	In Operation: Number of Units	In Operation: Net MWe
Pressurized light-water reactors (PWR)	294	276,965
Boiling light-water reactors (BWR)	75	72,941
Heavy-water reactors, all types (HWR, PHWR)	49	24,598
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	1,400
Total	**450**	**393,843**

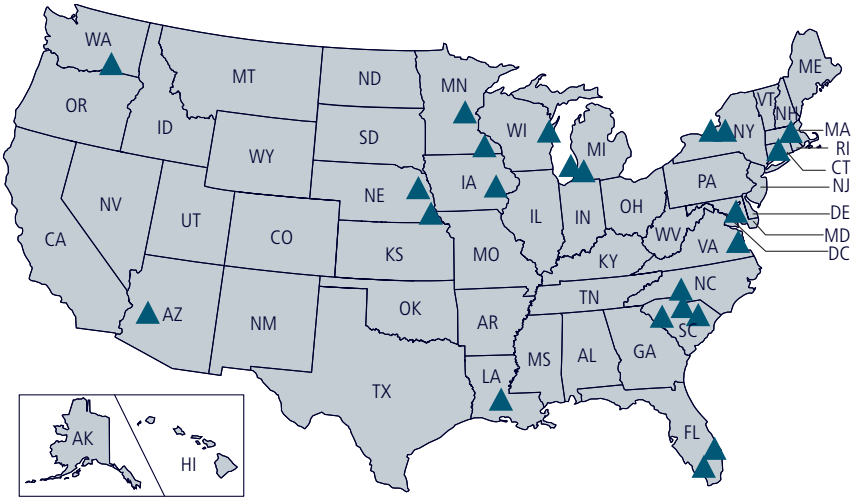
Note: MWe values are rounded to the nearest whole number.

Source: IAEA Power Reactor Information System Database, www.iaea.org Compiled by the NRC from IAEA data. Data are current as of May 2018. The next printed update will be in August 2019.

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

APPENDIX T

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

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

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

MARYLAND
- **Calvert Cliffs**
  - Rappahannock Tribe

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
  - Chickahominy Indian Tribe
  - Chickahominy Indian Tribe — Eastern Division
  - Nansemond Indian Tribe
  - Upper Mattaponi Tribe

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

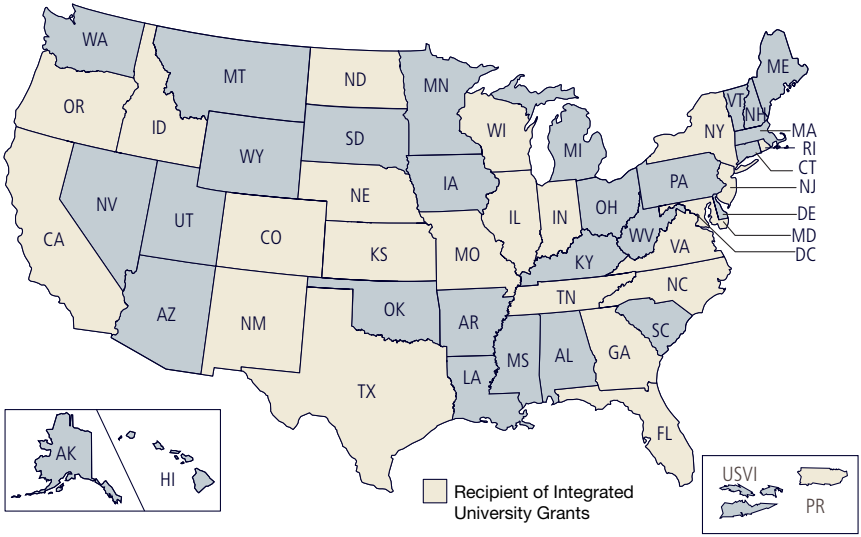
WISCONSIN
- **Point Beach**
  - Oneida Trust Land
  - Oneida Reservation

* 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 July 2018, and the next printed update will be in August 2019.

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

APPENDIX U
States with Integrated University Grants Program Recipients in FY 2017



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 420 IUP grants, including 122 faculty development, 103 scholarship, 120 fellowship, and 75 trade school and community college scholarship grants. More than 100 faculty and 3,500 students have received support. The NRC has invested approximately $9.7 million in its trade school and community college scholarship program to support the development of trade and craft workers in the nuclear industry.

APPENDIX V

Significant Enforcement Actions Issued, 2017

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-16-164	Rozell Testing Laboratories, LLC	Materials	1/11/2017	NOV SL III
EA-16-180	White Earth Department of Transportation	Materials	1/17/2017	NOV SL III
EA-16-152	American Engineering Testing, Inc.	Materials	1/18/2017	NOV SL III
EA-16-231	Wyoming Medical Center	Materials	1/23/2017	NOV SL III
EA-16-232	XCEL NDT, LLC	Materials	1/25/2017	Problem SL III
EA-16-224	Thrasher Engineering, Inc.	Materials	1/26/2017	NOV SL III
EA-16-214	Spectrum Health Hospitals	Materials	2/02/2017	NOV SL III
IA-16-059	Mr. Curtis Thompson	Individual	2/02/2017	Order prohibiting involvment in NRC-licensed activities for 1 year
EA-16-184	PSEG Nuclear, LLC (Hope Creek Generating Station)	Reactor	2/06/2017	NOV White SDP finding resulting in plant inspections
IA-16-075	Mr. Casey Pooler	Individual	2/15/2017	Order prohibiting involvment in NRC-licensed activities for 3 years; NOV SL III
EA-16-236	Exelon Generation Co., LLC (Dresden Nuclear Power Station)	Reactor	2/27/2017	NOV White SDP finding resulting in plant inspections
EA-16-247	Entergy Operations, Inc. (Arkansas Nuclear One)	Reactor	2/27/2017	NOV White SDP finding resulting in plant inspections
EA-16-066	Botsford General Hospital	Materials	3/01/2017	NOV SL III
IA-17-028	Mr. Roy Taylor	Individual	3/01/2017	NOV SL III
EA-15-218	Louisiana Energy Services, LLC	Fuel Facility	3/03/2017	Problem SL III
IA-16-029	Mr. Pieter van der Heide	Individual	3/03/2017	NOV SL III
EA-16-114	Homestake Mining	Materials	3/28/2017	Confirmatory Order result of an ADR mediation
EA-16-191	Premier Technology, Inc.	Materials	3/31/2017	Problem SL III
EA-16-255	Somascan, Incorporated	Materials	4/05/2017	Problem/CP SL III–$7,000
EA-16-241	Exelon Nuclear (Oyster Creek Nuclear Generating Station)	Reactor	4/13/2017	NOV White SDP finding resulting in plant inspections
EA-17-014	Southern Nuclear Operating Co. (Vogtle Electric Generating Plant)	Reactor	4/25/2017	NOV White SDP finding resulting in plant inspections

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

APPENDIX V
Significant Enforcement Actions Issued, 2017 (continued)

Action #	Name	Type	Issue Date	Enforcement Action
EA-16-251	PSEG Nuclear, LLC (Hope Creek Generating Station)	Reactor	5/03/2017	NOV SL III
EA-16-258	Hayre McElroy & Associates, LLC	Materials	5/11/2017	NOV/CP SL III–$7,000
EA-17-012	DTE Energy Company (Fermi Power Plant, Unit 2)	Reactor	5/11/2017	NOV White SDP finding resulting in plant inspections
IA-17-004	Mr. Eli Dragomer	Individual	5/11/2017	NOV SL III
EA-15-124	Kim Engineering	Materials	5/25/2017	NOV/CP SL III–$7,000
EA-16-281	ADCO Services, Inc.	Materials	5/30/2017	NOV SL III
EA-16-130	JANX Integrity Group	Materials	6/01/2017	Problem SL III
IA-16-049	Toby Lashley	Individual	6/01/2017	Order prohibiting involvment in NRC-licensed activities for 1 year
IA-16-050	Mr. Kevin Lashley	Individual	6/01/2017	NOV SL III
EA-17-026	Guam Medical Imaging Center	Materials	6/06/2017	Problem SL III
EA-17-036	Guam Regional Medical Center	Materials	6/06/2017	NOV SL III
EA-16-267	P4 Production, LLC	Materials	6/13/2017	Problem SL III
EA-17-062	ERP Federal Mining Complex, LLC	Materials	6/21/2017	Problem SL III
EA-16-255	Somascan, Incorporated	Materials	6/27/2017	Order Imposing a Civil Penalty of $7,000
EA-16-262	Cameco Resources/Power Resources, Inc.	Materials	6/28/2017	Problem SL III
EA-17-028	Energy Northwest (Columbia Generating Station)	Reactor	7/06/2017	NOV White SDP finding resulting in plant inspections
EA-17-063	Hill's Pet Nutrition	Materials	7/27/2017	NOV SL III
EA-17-022	Tennessee Valley Authority (Watts Bar Nuclear Plant)	Reactor	7/27/2017	Confirmatory Order result of an ADR mediation
EA-17-058	Westinghouse Electric Company, LLC	Fuel Facility	8/09/2017	Confirmatory Order result of an ADR mediation
EA-17-027	Geo-Logic Associates, Inc.	Materials	8/14/2017	Problem SL III
EA-16-216	STP Nuclear Operating Company (South Texas Project Electric Generating Station)	Reactor	8/18/2017	NOV SL III
EA-17-025	Geo-Engineering & Testing, Inc.	Materials	8/18/2017	NOV SL III
EA-17-043	FirstEnergy Nuclear Operating Co. (Perry Nuclear Power Plant)	Reactor	8/24/2017	NOV White SDP finding resulting in plant inspections
EA-17-048	Allen County Cardiology	Materials	9/05/2017	Problem/CP SL III–$7,000
EA-17-096	Cardinal Health Nuclear Pharmacy	Materials	9/14/2017	NOV SL III
EA-17-097	Coastal Wireline Services, Inc.	Materials	9/14/2017	NOV SL III
EA-17-082	Washington University	Materials	9/21/2017	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 V
Significant Enforcement Actions Issued, 2017 (continued)

Action #	Name	Type	Issue Date	Enforcement Action
EA-17-122	Duke Energy Corporation (Catawba Nuclear Station, Unit 2)	Reactor	10/16/2017	NOV White SDP finding resulting in plant inspections
EA-17-091	Michiana Hematology Oncology, PC	Materials	10/31/2017	Problem SL III
EA-17-125	Board of Light and Water City of Marquette	Materials	11/08/2017	NOV SL III
IA-17-030	Mr. Devin Caraza	Individual	11/08/2017	NOV SL III
EA-17-079	Terracon Consultants, Inc.	Materials	11/15/2017	NOV SL III
EA-17-118	Midwest Engineering and Testing, Inc.	Materials	11/21/2017	NOV SL III
EA-17-077	Dominion Nuclear Connecticut, Inc. (Millstone Power Station)	Reactor	11/21/2017	Confirmatory Order result of an ADR mediation
EA-17-098	Exelon Generation Company (Clinton Power Station)	Reactor	11/27/2017	NOV White SDP finding resulting in plant inspections
EA-17-101	Qal-Tek Associates, LLC	Materials	12/12/2017	Problem/CP SL II–$22,400
EA-17-090	Global Nuclear Fuel-Americas, LLC	Fuel Facility	12/14/2017	Confirmatory Order result of an ADR mediation
EA-17-148	Construction Consulting and Testing	Materials	12/18/2017	NOV SL III
EA-17-104	Avera McKennan Hospital	Materials	12/21/2017	Problem SL III
EA-17-157	K & S Engineers, Inc.	Materials	12/21/2017	NOV SL III
IA-17-111	Mr. Mark Sperlich	Individual	12/21/2017	NOV SL III
EA-17-147	CTI and Associates, Inc.	Materials	12/28/2017	NOV/CP SL III-$7,000

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 W
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 X
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 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 the 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; entry into force April 15, 2015
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 2018; the next printed update will be in August 2019.

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 MULTILATERAL ORGANIZATIONS IN WHICH THE NRC PARTICIPATES

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 Development Committee
The Nuclear Law Committee (NLC)
The Management Board for the Development, Application and Validation of Nuclear Data and Codes (MBDAV)
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/*

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)

BILATERAL INFORMATION EXCHANGE AND COOPERATION AGREEMENTS WITH THE NRC

Agreement Country			
Argentina	Germany	Lithuania	Sweden
Armenia	Georgia	Mexico	Switzerland
Australia	Ghana	Netherlands	Tecro (Taiwan)
Belgium	Greece	Peru	Thailand
Brazil	Hungary	Poland	Turkey
Bulgaria	India	Republic of Korea	Ukraine
Canada	Indonesia	Romania	United Arab Emirates
China	Israel	Singapore	United Kingdom
Croatia	Italy	Slovakia	Vietnam
Czech Republic	Japan	Slovenia	EURATOM
Finland	Jordan	South Africa	
France	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 2018; the next printed update will be in August 2019.
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 Z

International Activities:

LIST OF IMPORT AND EXPORT LICENSES ISSUED FOR 2017

License Number	Applicant	Docket Number
PXB16.07	REVISS Services Inc.	11006142
PXB17b.11	Industrial Nuclear Company	11006012
PXB184.02	Halliburton Energy Services, Inc.	11006143
PXB1a.05	Weatherford International Inc. & Subsidiaries & Affiliate Companies	11006277
PXB200.01	Mistras Group, Inc.	11006199
PXB211.00	Weatherford International Inc. & Subsidiaries & Affiliate Companies	11006246
PXB213.00	Tucker Energy Services	11006257
PXB214.00	University of Wisconsin-Madison	11006269
PXB215a.00	ISOFLEX Radioactive, LLC	11006262
PXB215b.00	ISOFLEX Radioactive, LLC	11006262
PXB3.09	Nordion (Canada) Inc.	11006070
PXB3.10	Nordion (Canada) Inc.	11006070
PXB6.23	Alpha-Omega Services, Inc.	11006027
PXB6.24	Alpha-Omega Services, Inc.	11006027

Licenses under Appendix P to 10 CFR Part 110,"Expert and Import of Nuclear Equipment and Material" 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
IW033	Perma-Fix Northwest Richland, Inc. (PFNW)	11006229
IW029/01	EnergySolutions Services, Inc.	11005896
IW009/03	AREVA Inc.	11005149
XB1310/06	Leidos, Inc.	11005525
XB1334	Siemens Corporation for Siemens Medical Solutions USA, Inc.	11006251
XB1335	Philips North America, LLC	11006260
XCOM1187/02	Sulzer Pumps (US) Inc.	11005671
XCOM1202/01	AREVA, Inc.	11005788
XCOM1202/02	Framatome Inc.	11005788
XCOM1209/01	Enrichment Techology US, Inc.	11005838
XCOM1274	Holtec International	11006128
XCOM1289/01	ATI Specialty Alloys & Components	11006177
XCOM1292/01	ATI Specialty Alloys & Components	11006186
XCOM1300	Mirion Technologies (IST) Corporation	11006221
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 Z

International Activities: (continued)

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

License Number	Applicant	Docket Number
XCOM1307	Materion Brush, Inc.	11006247
XCOM1310	Curtiss-Wright Corporation	11006263
XCOM1313	Materion Advanced Chemicals	11006274
XMAT409/01	Cambridge Isotope Laboratories, Inc.	11005753
XMAT410/03	Sigma-Aldrich Co., LLC	11005754
XMAT412/02	Linde Electronics and Specialty Gases, a Division of Linde Gas North America LLC	11005876
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-R	Cambridge Isotope Laboratories, Inc.	11005993
XMAT420/01	Cambridge Isotope Laboratories, Inc.	11005994
XMAT422/02	Cambridge Isotope Laboratories, Inc.	11005997
XMAT427/01	Airgas USA, LLC	11006098
XMAT427/02	Airgas USA, LLC	11006098
XMAT437	Linde Electronics and Speciality Gases, a Division of Linde Gas North America LLC	11006238
XMAT438	Sigma-Aldrich Co., LLC	11006253
XR178	Westinghouse Electric Company, LLC	11006216
XSNM3135/05	Global Nuclear Fuel–Americas, L.L.C.	11005186
XSNM3398/05	Global Nuclear Fuel–Americas, L.L.C.	11005555
XSNM3471/02	AREVA Inc.	11005652
XSNM3551/02	AREVA Inc.	11005623
XSNM3551/03	Framatome Inc.	11005623
XSNM3643/02	TN Americas LLC	11005864
XSNM3697/02	Framatome Inc.	11005959
XSNM3722/02	TN Americas LLC	11006019
XSNM3722/03	TN Americas LLC	11006019
XSNM3747/02-R	AREVA Inc.	11006110
XSNM3747/03	Framatome Inc.	11006110
XSNM3754	Thermo Fisher Scientific	11006166
XSNM3757	U.S. Department of Energy/NNSA	11006187
XSNM3763/02	Edlow International Company as an Agent for ANSTO	11006195
XSNM3768/01	Edlow International Company as an Agent for PT INUKI	11006228
XSNM3769	Westinghouse Electric Company, LLC	11006233
XSNM3770-R	Eldow International Company	11006234
XSNM3770/01	Edlow Intenational Co.	11006234
XSNM3771	Edlow International Company as Agent for SCK-CEN	11006235
XSNM3772	U.S. Department of Energy/NBL	11006236
XSNM3773	Global Nuclear Fuel–Americas, L.L.C.	11006237
XSNM3774	Thermo Fisher Scientific	11006239
XSNM3775	Thermo Fisher Scientific	11006240
XSNM3776	U.S. Department of Energy/NNSA	11006241
XSNM3777	U.S. Department of Energy/NNSA	11006244
XSNM3778	Thermo Fisher Scientific	11006255
XSNM3779	AREVA, Inc.	11006258
XSNM3780	AREVA Inc.	11006265
XSNM3780/01	Framatome Inc.	11006265

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

APPENDIX Z

International Activities: (continued)

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

License Number	Applicant	Docket Number
XSNM3781	AREVA, Inc.	11006267
XSNM3782/01	Framatome Inc.	11006288
XSNM3782	AREVA Inc.	11006288
XSNM3785	Global Nuclear Fuel–Americas, L.L.C.	11006278
XSNM3787	Global Nuclear Fuel–Americas, L.L.C.	11006280
XSNM3788	U.S. Department of Energy	11006283
XSNM3794	US Department of Energy NNSA	11006302
XSOU8707/06	MP Mine Operations LLC	11004455
XSOU8774/06	Materion Advanced Chemicals, Inc.	11005173
XSOU8780/07	AREVA Nuclear Materials LLC	11005211
XSOU8787/05	Urenco, Inc.	11005277
XSOU8789/07	ConverDyn	11005360
XSOU8798/06	RSB Logistic Inc.	11005445
XSOU8798/07	RSB Logistic Inc.	11005445
XSOU8827/01	MP Mine Operations LLC	11005966
XSOU8828/02	Global Advanced Metals USA, Inc.	11006003
XSOU8842	Southern Ionics Minerals, LLC	11006256
XSOU8843	Manufacturing Sciences Corporation	11006271
XW012/05	Perma-Fix Northwest, Inc.	11005699
XW015/01	AREVA Inc.	11005789
XW018/01	EnergySolutions Services, Inc.	11005897
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.