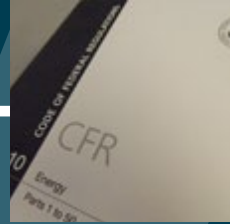




NRC



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/>.



APPENDICES

Abbreviations

ABWR	advanced boiling-water reactor	EPA	Environmental Protection Agency (U.S.)
AC	Allis Chalmers	EPR	Evolutionary Pressurized-Water Reactor
ac	alternating current	EPZ	emergency planning zone
ACRS	Advisory Committee on Reactor Safeguards	ESBWR	Economic Simplified Boiling-Water Reactor
ACMUI	Advisory Committee on the Medical Uses of Isotopes	ESP	early site permit
ADAMS	Agencywide Documents Access and Management System	EVESR	ESADA (Empire States Atomic Development Associates)
ADR	alternative dispute resolution		Vallecitos Experimental Superheat Reactor
AEC	Atomic Energy Commission (U.S.)	Exp. Date	expiration date of operating license
AEP	American Electric Power Company	FBR	fast breeder reactor
AGN	Aerojet-General Nuclearonics	FEMA	Federal Emergency Management Agency
AP1000	Advanced Passive 1000 Megawatt (Westinghouse pressurized-water reactor)	FERC	Federal Energy Regulatory Commission
AP600	Advanced Passive 600 Megawatt (Westinghouse pressurized-water reactor)	FLUR	Fluor Pioneer
ASLB	Atomic Safety and Licensing Board	FOIA	Freedom of Information Act
B&R	Burns & Roe	FR	<i>Federal Register</i>
B&W	Babcock & Wilcox	FTE	full-time equivalent
BALD	Baldwin Associates	FW	Foster Wheeler
BECH	Bechtel	FY	fiscal year
BRRT	Brown & Root	G&H	Gibbs & Hill
BWR	boiling-water reactor	GA	General Atomics
CB&I	Chicago Bridge & Iron	GCR	gas-cooled reactor
CE	Combustion Engineering	GE	General Electric
CFR	<i>Code of Federal Regulations</i>	GEH	General Electric-Hitachi Nuclear Energy
CNS	Convention on Nuclear Safety	GEIS	generic environmental impact statement
Co.	company	GETR	General Electric Test Reactor
COL	combined license	GIL	Gilbert Associates
Comm. Op.	date of commercial operation	GL	general license
Con Type	containment type	GPC	Georgia Power Company
DRYAMB	dry, ambient pressure	GW	gigawatt
DRYSUB	dry, subatmospheric	GWh	gigawatt-hour(s)
ICECND	wet, ice condenser	Gy	gray
MARK 1	wet, MARK I	HLW	high-level waste
MARK 2	wet, MARK II	HTG	high-temperature gas (reactor)
MARK 3	wet, MARK III	HWR	heavy-water reactor
CP Issued	date of construction permit issuance	IAEA	International Atomic Energy Agency
CPPNM	Convention on the Physical Protection of Nuclear Material	INES	International Nuclear Event Scale
CT	computerized tomography	ISFSI	independent spent fuel storage installation
CP	civil penalty	ISR	in situ recovery
CVTR	Carolinas Virginia Tube Reactor	IUP	Intergrated University Program
CWE	Commonwealth Edison Company	KAIS	Kaiser Engineers
DANI	Daniel International	kW	kilowatt(s)
DBDB	Duke & Bechtel	kWh	kilowatt-hour(s)
DBT	design-basis threat	KI	potassium iodide
DC	design certification	LLP	B&W lowered loop
DHS	Department of Homeland Security (U.S.)	LLW	low-level radioactive waste
DOE	Department of Energy (U.S.)	LMFB	liquid metal fast breeder (reactor)
DOT	Department of Transportation (U.S.)	LOCA	loss-of-coolant accident
DUKE	Duke Power Company	LR Issued	license renewal issued
EBSO	Ebasco	LSN	Licensing Support Network
EDO	Executive Director for Operations	LWGR	light-water-cooled graphite-moderated reactor
EIA	Energy Information Administration (DOE)		
EP	emergency preparedness		

Mo-99	molybdenum-99	SI	Système Internationale (d'unités) (International System of Units)
MOU	memorandum of understanding	SL	severity level
MOX	mixed oxide	SL	site-specific license
MW	megawatt(s)	SMR	small modular reactor
MWe	megawatt(s) electric	SOARCA	State-of-the-Art Reactor Consequence Analyses
MWh	megawatt-hour(s)	SSI	Southern Services Incorporated
MWt	megawatt(s) thermal	STP	South Texas Project
NARM	naturally occurring or accelerator produced radioactive material	TMI-2	Three Mile Island, Unit 2
NEA	Nuclear Energy Agency	Sv	sievert
NMMSS	Nuclear Materials Management and Safeguards System	TRIGA	Training Reactor and Isotopes Production, General Atomics
NEIMA	Nuclear Energy Innovation and Modernization Act	TVA	Tennessee Valley Authority
NEPA	National Environmental Policy Act	UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
NOV	notice of violation	UE&C	United Engineers & Constructors
NRC	Nuclear Regulatory Commission (U.S.)	UF₆	uranium hexafluoride
NSP	Northern States Power Company	UO	uranium dioxide
NSSS	nuclear steam system supplier and design type	US-APWR	U.S. [version of] Advanced Pressurized-Water Reactor
GE 2	<i>GE Type 2</i>	VBWR	Vallecitos Boiling-Water Reactor
GE 3	<i>GE Type 3</i>	WDCO	Westinghouse Development Corporation
GE 4	<i>GE Type 4</i>	WEST	Westinghouse Electric
GE 5	<i>GE Type 5</i>	WNA	World Nuclear Association
GE 6	<i>GE Type 6</i>	Y-90	yttrium-90
WEST 2LP	<i>Westinghouse Two-Loop</i>		
WEST 3LP	<i>Westinghouse Three-Loop</i>		
WEST 4LP	<i>Westinghouse Four-Loop</i>		
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	post-shutdown decommissioning activities report		
PSEG	Public Service Electric and Gas Company		
PWR	pressurized-water reactor		
Rad	radiation absorbed dose		
RDD	radiological dispersal device		
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		



APPENDICES

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	
Velocity	in ³	cm ³	16.38706	
	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 ₂ O (39.2 °F)	kPa	2.98898
	inH ₂ O (60 °F)	kPa	0.24884
Stress	mmHg (0 °C)	kPa	0.133322
	kip/in ² (formerly ksi)	MPa	6.894757
	lbf/in ² (formerly psi)	MPa	0.006894757
	lbf/in ² (formerly psi)	kPa	6.894757
Energy, work	lbf/ft ²	kPa	0.04788026
	kWh	MJ	*3.6
	cal th	J (joule)	*4.184
	Btu	kJ	1.055056
	ft • lbf	J	1.355818
Power	therm (U.S.)	MJ	105.4804
	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	2013– 2018* Capacity Factor (Percent)
Arkansas Nuclear One, Unit 1 Entergy Operations, Inc. London, AR (6 miles WNW of Russellville, AR) 05000313 https://www.nrc.gov/info-finder/reactors/ano1.html	IV	PWR-DRYAMB	2,568	12/06/1968	56
		B&W LLP	DPR-51	05/21/1974	98
		BECH		12/19/1974	82
		BECH		06/20/2001	72
				05/20/2034	87
	76				
Arkansas Nuclear One, Unit 2 Entergy Operations, Inc. London, AR (6 miles WNW of Russellville, AR) 05000368 https://www.nrc.gov/info-finder/reactors/ano2.html	IV	PWR-DRYAMB	3,026	12/06/1972	91
		CE	NPF-6	09/01/1978	85
		BECH		03/26/1980	94
		BECH		06/30/2005	89
				07/17/2038	70
	82				
Beaver Valley Power Station, Unit 1 FirstEnergy Nuclear Operating Co. Shippingport, PA (17 miles W of McCandless, PA) 05000334 https://www.nrc.gov/info-finder/reactors/bv1.html	I	PWR-DRYAMB	2,900	06/26/1970	86
		WEST 3LP	DPR-66	07/02/1976	86
		S&W		10/01/1976	90
		S&W		11/05/2009	91
				01/29/2036	99
	92				
Beaver Valley Power Station, Unit 2 FirstEnergy Nuclear Operating Co. Shippingport, PA (17 miles W of McCandless, PA) 05000412 https://www.nrc.gov/info-finder/reactors/bv2.html	I	PWR-DRYAMB	2,900	05/03/1974	97
		WEST 3LP	NPF-73	08/14/1987	98
		S&W		11/17/1987	90
		S&W		11/05/2009	97
				05/27/2047	90
	90				
Braidwood Station, Unit 1 Exelon Generation Co., LLC Braceville, IL (20 miles SSW of Joliet, IL) 05000456 https://www.nrc.gov/info-finder/reactors/brai1.html	III	PWR-DRYAMB	3,645	12/31/1975	95
		WEST 4LP	NPF-72	07/02/1987	103
		S&L		07/29/1988	93
		CWE		01/27/2016	90
				10/17/2046	98
	93				
Braidwood Station, Unit 2 Exelon Generation Co., LLC Braceville, IL (20 miles SSW of Joliet, IL) 05000457 https://www.nrc.gov/info-finder/reactors/brai2.html	III	PWR-DRYAMB	3,645	12/31/1975	98
		WEST 4LP	NPF-77	05/20/1988	96
		S&L		10/17/1988	91
		CWE		01/27/2016	95
				12/18/2046	98
	92				
Browns Ferry Nuclear Plant, Unit 1 Tennessee Valley Authority Limestone County, AL (10 miles S of Athens, AL) 05000259 https://www.nrc.gov/info-finder/reactors/bf1.html	II	BWR-MARK 1	3,952	05/10/1967	94
		GE 4	DPR-33	12/20/1973	90
		TVA		08/01/1974	94
		TVA		05/04/2006	83
				12/20/2033	97
	82				



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 MВт License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2013– 2018* Capacity Factor (Percent)
Browns Ferry Nuclear Plant, Unit 2 Tennessee Valley Authority Limestone County, AL (10 miles S of Athens, AL) 05000260 https://www.nrc.gov/info-finder/reactors/bf2.html	II	BWR-MARK 1	3,952	05/10/1967	79
		GE 4	DPR-52	06/28/1974	98
		TVA		03/01/1975	85
		TVA		05/04/2006	94
				06/28/2034	83
				97	
Browns Ferry Nuclear Plant, Unit 3 Tennessee Valley Authority Limestone County, AL (10 miles S of Athens, AL) 05000296 https://www.nrc.gov/info-finder/reactors/bf3.html	II	BWR-MARK 1	3,952	07/31/1968	89
		GE 4	DPR-68	07/02/1976	88
		TVA		03/01/1977	92
		TVA		05/04/2006	80
				07/02/2036	93
				76	
Brunswick Steam Electric Plant, Unit 1 Duke Energy Progress, LLC Southport, NC (20 miles S of Wilmington, NC) 05000325 https://www.nrc.gov/info-finder/reactors/bru1.html	II	BWR-MARK 1	2,923	02/07/1970	92
		GE 4	DPR-71	09/08/1976	89
		UE&C		03/18/1977	93
		BRRT		06/26/2006	83
				09/08/2036	93
				85	
Brunswick Steam Electric Plant, Unit 2 Duke Energy Progress, LLC Southport, NC (20 miles S of Wilmington, NC) 05000324 https://www.nrc.gov/info-finder/reactors/bru2.html	II	BWR-MARK 1	2,923	02/07/1970	73
		GE 4	DPR-62	12/27/1974	98
		UE&C		11/03/1975	81
		BRRT		06/26/2006	92
				12/27/2034	82
				93	
Byron Station, Unit 1 Exelon Generation Co., LLC Byron, IL (17 miles SW of Rockford, IL) 05000454 https://www.nrc.gov/info-finder/reactors/byro1.html	III	PWR-DRYAMB	3,645	12/31/1975	96
		WEST 4LP	NPF-37	02/14/1985	97
		S&L		09/16/1985	88
		CWE		11/19/2015	97
				10/31/2044	89
				94	
Byron Station, Unit 2 Exelon Generation Co., LLC Byron, IL (17 miles SW of Rockford, IL) 05000455 https://www.nrc.gov/info-finder/reactors/byro2.html	III	PWR-DRYAMB	3,645	12/31/1975	86
		WEST 4LP	NPF-66	01/30/1987	94
		S&L		08/02/1987	94
		CWE		11/19/2015	86
				11/06/2046	46
				100	
Callaway Plant, Unit 1 Ameren Missouri Fulton, MO (25 miles ENE of Jefferson City, MO) 05000483 https://www.nrc.gov/info-finder/reactors/call.html	IV	PWR-DRYAMB	3,565	04/16/1976	77
		WEST 4LP	NPF-30	10/18/1984	89
		BECH		12/19/1984	96
		DANI		03/06/2015	87
				10/18/2044	77
				100	



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	2013– 2018* 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	97 91 97 89 97 92
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	81 100 86 95 91 100
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	3,469 NPF-35	08/07/1975 01/17/1985 06/29/1985 12/05/2003 12/05/2043	96 86 88 97 90 93
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	3,469 NPF-52	08/07/1975 05/15/1986 08/19/1986 12/05/2003 12/05/2043	86 100 86 88 96 91
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	82 97 89 87 89 88
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	80 98 78 92 77 96



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	2013– 2018* Capacity Factor (Percent)
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	3,612	12/19/1974	94
		WEST 4LP	NPF-87	04/17/1990	85
		G&H		08/13/1990	100
		BRRT		N/A	92
				02/08/2030	91
				100	
Comanche Peak Nuclear Power Plant, Unit 2 Comanche Peak Power Co., LLC. Vistra Operating Co., LLC Glen Rose, TX (40 miles SW of Fort Worth, TX) 05000446 https://www.nrc.gov/info-finder/reactors/cp2.html	IV	PWR-DRYAMB	3,612	12/19/1974	99
		WEST 4LP	NPF-89	04/06/1993	93
		BECH		08/03/1993	88
		BRRT		N/A	100
				02/02/2033	68
				93	
Cooper Nuclear Station Nebraska Public Power District Brownville, NE (23 miles S of Nebraska City, NE) 05000298 https://www.nrc.gov/info-finder/reactors/cns.html	IV	BWR-MARK 1	2,419	06/04/1968	97
		GE 4	DPR-46	01/18/1974	88
		B&R		07/01/1974	97
		B&R		11/29/2010	84
				01/18/2034	99
				81	
Davis-Besse Nuclear Power Station, Unit 1 FirstEnergy Nuclear Operating Co. Oak Harbor, OH (21 miles ESE of Toledo, OH) 05000346 https://www.nrc.gov/info-finder/reactors/davi.html	III	PWR-DRYAMB	2,817	03/24/1971	95
		B&W RLP	NPF-3	04/22/1977	74
		BECH		07/31/1978	97
		B&W		12/08/2015	79
				04/22/2037	97
				93	
Diablo Canyon Nuclear Power Plant, Unit 1 Pacific Gas & Electric Co. Avila Beach, CA (12 miles WSW of San Luis Obispo, CA) 05000275 https://www.nrc.gov/info-finder/reactors/diab1.html	IV	PWR-DRYAMB	3,411	4/23/1968	95
		WEST 4LP	DPR-80	11/02/1984	87
		PG&E		05/07/1985	87
		PG&E		Withdrawn	98
				11/02/2024	81
				98	
Diablo Canyon Nuclear Power Plant, Unit 2 Pacific Gas & Electric Co. Avila Beach, CA (12 miles WSW of San Luis Obispo, CA) 05000323 https://www.nrc.gov/info-finder/reactors/diab2.html	IV	PWR-DRYAMB	3,411	12/09/1970	82
		WEST 4LP	DPR-82	08/26/1985	86
		PG&E		03/13/1986	95
		PG&E		Withdrawn	88
				08/26/2025	95
				87	
Donald C. Cook Nuclear Plant, Unit 1 Indiana Michigan Power Co. Bridgman, MI (13 miles S of Benton Harbor, MI) 05000315 https://www.nrc.gov/info-finder/reactors/cook1.html	III	PWR-ICECND	3,304	03/25/1969	78
		WEST 4LP	DPR-58	10/25/1974	94
		AEP		08/28/1975	78
		AEP		08/30/2005	82
				10/25/2034	72
				100	




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	2013- 2018* Capacity Factor (Percent)
Donald C. Cook Nuclear Plant, Unit 2 Indiana Michigan Power Co. Bridgman, MI (13 miles S of Benton Harbor, MI) 05000316 https://www.nrc.gov/info-finder/reactors/cook2.html	III	PWR-ICECND WEST 4LP AEP AEP	3,468 DPR-74	03/25/1969 12/23/1977 07/01/1978 08/30/2005 12/23/2037	85 101 79 71 104 79
Dresden Nuclear Power Station, Unit 2 Exelon Generation Co., LLC Morris, IL (25 miles SW of Joliet, IL) 05000237 https://www.nrc.gov/info-finder/reactors/dres2.html	III	BWR-MARK 1 GE 3 S&L UE&C	2,957 DPR-19	01/10/1966 02/20/1991 ^A 06/09/1970 10/28/2004 12/22/2029	85 98 83 91 84 99
Dresden Nuclear Power Station, Unit 3 Exelon Generation Co., LLC Morris, IL (25 miles SW of Joliet, IL) 05000249 https://www.nrc.gov/info-finder/reactors/dres3.html	III	BWR-MARK 1 GE 3 S&L UE&C	2,957 DPR-25	10/14/1966 01/12/1971 11/16/1971 10/28/2004 01/12/2031	89 95 89 84 91 94
Duane Arnold Energy Center NextEra Energy Duane Arnold, LLC Palo, IA (8 miles NW of Cedar Rapids, IA) 05000331 https://www.nrc.gov/info-finder/reactors/duan.html	III	BWR-MARK 1 GE 4 BECH BECH	1,912 DPR-49	06/22/1970 02/22/1974 02/01/1975 12/16/2010 02/21/2034	89 79 88 79 88 93
Edwin I. Hatch Nuclear Plant, Unit 1 Southern Nuclear Operating Co., Inc. Baxley, GA (20 miles S of Vidalia, GA) 05000321 https://www.nrc.gov/info-finder/reactors/hat1.html	II	BWR-MARK 1 GE 4 BECH GPC	2,804 DPR-57	09/30/1969 10/13/1974 12/31/1975 01/15/2002 08/06/2034	94 89 101 93 97 91
Edwin I. Hatch Nuclear Plant, Unit 2 Southern Nuclear Operating Co., Inc. Baxley, GA (20 miles S of Vidalia, GA) 05000366 https://www.nrc.gov/info-finder/reactors/hat2.html	II	BWR-MARK 1 GE 4 BECH GPC	2,804 NPF-5	12/27/1972 06/13/1978 09/05/1979 01/15/2002 06/13/2038	89 99 91 101 95 95
Fermi, Unit 2 DTE Electric Company Newport, MI (25 miles NE of Toledo, OH) 05000341 https://www.nrc.gov/info-finder/reactors/ferm2.html	III	BWR-MARK 1 GE 4 S&L DANI	3,486 NPF-43	09/26/1972 03/20/1985 01/23/1988 12/15/2016 03/20/2045	62 82 69 86 82 75

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.




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APPENDIX A 
Commercial Nuclear Power Reactors
Operating Reactors (continued)


Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2013- 2018* Capacity Factor (Percent)
Grand Gulf Nuclear Station, Unit 1 Entergy Operations, Inc. Port Gibson, MS (20 miles S of Vicksburg, MS) 05000416 https://www.nrc.gov/info-finder/reactors/gg1.html	IV	BWR-MARK 3 GE 6 BECH BECH	4,408 NPF-29	09/04/1974 11/01/1984 07/01/1985 12/01/2016 11/01/2044	86 82 93 47 58 57
H.B. Robinson Steam Electric Plant, Unit 2 Duke Energy Progress, Inc. Hartsville, SC (26 miles NW of Florence, SC) 05000261 https://www.nrc.gov/info-finder/reactors/rob2.html	II	PWR-DRYAMB WEST 3LP EBSO EBSO	2,339 DPR-23	04/13/1967 07/31/1970 03/07/1971 04/19/2004 07/31/2030	85 86 85 95 88 79
Hope Creek Generating Station, Unit 1 PSEG Nuclear, LLC Hancocks Bridge, NJ (18 miles SE of Wilmington, DE) 05000354 https://www.nrc.gov/info-finder/reactors/hope.html	I	BWR-MARK 1 GE 4 BECH BECH	3,902 NPF-57	11/04/1974 07/25/1986 12/20/1986 07/20/2011 04/11/2046	80 102 83 85 94 90
Indian Point Nuclear Generating, Unit 2 Entergy Nuclear Indian Point 2, LLC <i>Entergy Corporation, Inc.</i> Buchanan, NY (24 miles N of New York, NY) 05000247 https://www.nrc.gov/info-finder/reactors/ip2.html	I	PWR-DRYAMB WEST 4LP UE&C WDCO	3,216 DPR-26	10/14/1966 09/28/1973 08/01/1974 09/17/2018 04/30/2024	77 93 77 53 73 90
Indian Point Nuclear Generating, Unit 3 Entergy Nuclear Indian Point 3, LLC <i>Entergy Corporation, Inc.</i> Buchanan, NY (24 miles N of New York, NY) 05000286 https://www.nrc.gov/info-finder/reactors/ip3.html	I	PWR-DRYAMB WEST 4LP UE&C WDCO	3,216 DPR-64	08/13/1969 12/12/1975 08/30/1976 09/17/2018 04/30/2025	94 98 86 102 73 92
James A. FitzPatrick Nuclear Power Plant Exelon Generation Co., LLC Scriba, NY (6 miles NE of Oswego, NY) 05000333 https://www.nrc.gov/info-finder/reactors/fitz.html	I	BWR-MARK 1 GE 4 S&W S&W	2,536 DPR-59	05/20/1970 10/17/1974 07/28/1975 09/08/2008 10/17/2034	89 79 96 76 80 89
Joseph M. Farley Nuclear Plant, Unit 1 Southern Nuclear Operating Co., Inc. Columbia, AL (18 miles E of Dothan, AL) 05000348 https://www.nrc.gov/info-finder/reactors/far1.html	II	PWR-DRYAMB WEST 3LP SSI DANI	2,775 NPF-2	08/16/1972 06/25/1977 12/01/1977 05/12/2005 06/25/2037	90 102 86 86 100 84



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	2013– 2018* Capacity Factor (Percent)
Joseph M. Farley Nuclear Plant, Unit 2 Southern Nuclear Operating Co., Inc. Columbia, AL (18 miles E of Dothan, AL) 05000364 https://www.nrc.gov/info-finder/reactors/far2.html	II	PWR-DRYAMB WEST 3LP SSI BECH	2,775 NPF-8	08/16/1972 03/31/1981 07/30/1981 05/12/2005 03/31/2041	91 89 98 90 91 99
LaSalle County Station, Unit 1 Exelon Generation Co., LLC Marseilles, IL (11 miles SE of Ottawa, IL) 05000373 https://www.nrc.gov/info-finder/reactors/lasa1.html	III	BWR-MARK 2 GE 5 S&L CWE	3,546 NPF-11	09/10/1973 04/17/1982 01/01/1984 10/19/2016 04/17/2042	95 93 99 89 96 92
LaSalle County Station, Unit 2 Exelon Generation Co., LLC Marseilles, IL (11 miles SE of Ottawa, IL) 05000374 https://www.nrc.gov/info-finder/reactors/lasa2.html	III	BWR-MARK 2 GE 5 S&L CWE	3,546 NPF-18	09/10/1973 12/16/1983 10/19/1984 10/19/2016 12/16/2043	88 95 83 95 88 98
Limerick Generating Station, Unit 1 Exelon Generation Co., LLC Limerick, PA (21 miles NW of Philadelphia, PA) 05000352 https://www.nrc.gov/info-finder/reactors/lim1.html	I	BWR-MARK 2 GE 4 BECH BECH	3,515 NPF-39	06/19/1974 08/08/1985 02/01/1986 10/20/2014 10/26/2044	101 91 100 93 100 92
Limerick Generating Station, Unit 2 Exelon Generation Co., LLC Limerick, PA (21 miles NW of Philadelphia, PA) 05000353 https://www.nrc.gov/info-finder/reactors/lim2.html	I	BWR-MARK 2 GE 4 BECH BECH	3,515 NPF-85	06/19/1974 08/25/1989 01/08/1990 10/20/2014 06/22/2049	94 99 89 101 86 99
McGuire Nuclear Station, Unit 1 Duke Energy Carolinas, LLC Huntersville, NC (17 miles N of Charlotte, NC) 05000369 https://www.nrc.gov/info-finder/reactors/mcg1.html	II	PWR-ICECND WEST 4LP DUKE DUKE	3,411 NPF-9	02/23/1973 05/27/1981 12/01/1981 12/05/2003 03/03/2041	82 82 95 89 90 100
McGuire Nuclear Station, Unit 2 Duke Energy Carolinas, LLC Huntersville, NC (17 miles N of Charlotte, NC) 05000370 https://www.nrc.gov/info-finder/reactors/mcg2.html	II	PWR-ICECND WEST 4LP DUKE DUKE	3,411 NPF-17	02/23/1973 05/27/1983 03/01/1984 12/05/2003 03/03/2043	95 94 87 97 86 92



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	2013– 2018* Capacity Factor (Percent)
Millstone Power Station, Unit 2 Dominion Nuclear Connecticut, Inc. Waterford, CT (3.2 miles WSW of New London, CT) 05000336 https://www.nrc.gov/info-finder/reactors/mill2.html	I	PWR-DRYAMB	2,700	12/11/1970	95
		CE	DPR-65	09/26/1975	85
		BECH		12/26/1975	85
		BECH		11/28/2005	93
				07/31/2035	85
				82	
Millstone Power Station, Unit 3 Dominion Nuclear Connecticut, Inc. Waterford, CT (3.2 miles WSW of New London, CT) 05000423 https://www.nrc.gov/info-finder/reactors/mill3.html	I	PWR-DRYSUB	3,650	08/09/1974	87
		WEST 4LP	NPF-49	01/31/1986	87
		S&W		04/23/1986	97
		S&W		11/28/2005	83
				11/25/2045	89
				100	
Monticello Nuclear Generating Plant, Unit 1 Northern States Power Company-Minnesota Monticello, MN (30 miles NW of Minneapolis, MN) 05000263 https://www.nrc.gov/info-finder/reactors/mont.html	III	BWR-MARK 1	2,004	06/19/1967	50
		GE 3	DPR-22	01/09/1981 ^B	78
		BECH		06/30/1971	78
		BECH		11/08/2006	93
				09/08/2030	86
				99	
Nine Mile Point Nuclear Station, Unit 1 Nine Mile Point Nuclear Station, LLC Scriba, NY (6 miles NE of Oswego, NY) 05000220 https://www.nrc.gov/info-finder/reactors/nmp1.html	I	BWR-MARK 1	1,850	04/12/1965	88
		GE 2	DPR-63	12/26/1974 ^C	98
		NIAG		12/01/1969	88
		S&W		10/31/2006	96
				08/22/2029	87
				99	
Nine Mile Point Nuclear Station, Unit 2 Nine Mile Point Nuclear Station, LLC Scriba, NY (6 miles NE of Oswego, NY) 05000410 https://www.nrc.gov/info-finder/reactors/nmp2.html	I	BWR-MARK 2	3,988	06/24/1974	99
		GE 5	NPF-69	07/02/1987	87
		S&W		03/11/1988	100
		S&W		10/31/2006	92
				10/31/2046	101
				90	
North Anna Power Station, Unit 1 Virginia Electric & Power Co. Mineral (Louisa County), VA (40 miles NW of Richmond, VA) 05000338 https://www.nrc.gov/info-finder/reactors/na1.html	II	PWR-DRYSUB	2,940	02/19/1971	89
		WEST 3LP	NPF-4	04/01/1978	100
		S&W		06/06/1978	91
		S&W		03/20/2003	89
				04/01/2038	99
				90	
North Anna Power Station, Unit 2 Virginia Electric & Power Co. Mineral (Louisa County), VA (40 miles NW of Richmond, VA) 05000339 https://www.nrc.gov/info-finder/reactors/na2.html	II	PWR-DRYSUB	2,940	02/19/1971	85
		WEST 3LP	NPF-7	08/21/1980	92
		S&W		12/14/1980	99
		S&W		03/20/2003	87
				08/21/2040	89
				99	

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



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APPENDIX A


Commercial Nuclear Power Reactors Operating Reactors (continued)

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2013– 2018* Capacity Factor (Percent)
Oconee Nuclear Station, Unit 1 Duke Energy Carolinas, LLC Seneca, SC (30 miles W of Greenville, SC) 05000269 https://www.nrc.gov/info-finder/reactors/oco1.html	II	PWR-DRYAMB B&W LLP DBDB DUKE	2,568 DPR-38	11/06/1967 02/06/1973 07/15/1973 05/23/2000 02/06/2033	91 91 96 83 95 90
Oconee Nuclear Station, Unit 2 Duke Energy Carolinas, LLC Seneca, SC (30 miles W of Greenville, SC) 05000270 https://www.nrc.gov/info-finder/reactors/oco2.html	II	PWR-DRYAMB B&W LLP DBDB DUKE	2,568 DPR-47	11/06/1967 10/06/1973 09/09/1974 05/23/2000 10/06/2033	82 101 89 98 88 100
Oconee Nuclear Station, Unit 3 Duke Energy Carolinas, LLC Seneca, SC (30 miles W of Greenville, SC) 05000287 https://www.nrc.gov/info-finder/reactors/oco3.html	II	PWR-DRYAMB B&W LLP DBDB DUKE	2,568 DPR-55	11/06/1967 07/19/1974 12/16/1974 05/23/2000 07/19/2034	97 82 97 91 97 92
Palisades Nuclear Plant Entergy Nuclear Operations, Inc. Covert, MI (5 miles S of South Haven, MI) 05000255 https://www.nrc.gov/info-finder/reactors/pali.html	III	PWR-DRYAMB CE BECH BECH	2,565.4 DPR-20	03/14/1967 02/21/1991 ^D 12/31/1971 01/17/2007 03/24/2031	85 86 89 99 86 77
Palo Verde Nuclear Generating Station, Unit 1 Arizona Public Service Company Wintersburg, AZ (50 miles W of Phoenix, AZ) 05000528 https://www.nrc.gov/info-finder/reactors/palo1.html	IV	PWR-DRYAMB CE 80-2L BECH BECH	3,990 NPF-41	05/25/1976 06/01/1985 01/28/1986 04/21/2011 06/01/2045	85 90 94 83 85 97
Palo Verde Nuclear Generating Station, Unit 2 Arizona Public Service Company Wintersburg, AZ (50 miles W of Phoenix, AZ) 05000529 https://www.nrc.gov/info-finder/reactors/palo2.html	IV	PWR-DRYAMB CE 80-2L BECH BECH	3,990 NPF-51	05/25/1976 04/24/1986 09/19/1986 04/21/2011 04/24/2046	91 90 85 95 86 82
Palo Verde Nuclear Generating Station, Unit 3 Arizona Public Service Company Wintersburg, AZ (50 miles W of Phoenix, AZ) 05000530 https://www.nrc.gov/info-finder/reactors/palo3.html	IV	PWR-DRYAMB CE80-2L BECH BECH	3,990 NPF-74	05/25/1976 11/25/1987 01/08/1988 04/21/2011 11/25/2047	79 101 85 85 92 90

D: The AEC issued a provisional OL on 03/24/1971, allowing commercial operation. The NRC issued a full-term OL on 2/21/1991.



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APPENDIX A 
Commercial Nuclear Power Reactors
Operating Reactors (continued)


Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2013– 2018* Capacity Factor (Percent)
Peach Bottom Atomic Power Station, Unit 2 Exelon Generation Co., LLC Delta, PA (17.9 miles S of Lancaster, PA) 05000277 https://www.nrc.gov/info-finder/reactors/pb2.html	I	BWR-MARK 1 GE 4 BECH BECH	4,016 DPR-44	01/31/1968	100
				10/25/1973	88
				07/05/1974	99
				05/07/2003	86
				08/08/2033	92
					94
Peach Bottom Atomic Power Station, Unit 3 Exelon Generation Co., LLC Delta, PA (17.9 miles S of Lancaster, PA) 05000278 https://www.nrc.gov/info-finder/reactors/pb3.html	I	BWR-MARK 1 GE 4 BECH BECH	4,016 DPR-56	01/31/1968	85
				07/02/1974	103
				12/23/1974	75
				05/07/2003	95
				07/02/2034	86
				94	
Perry Nuclear Power Plant, Unit 1 FirstEnergy Nuclear Operating Co. Perry, OH (35 miles NE of Cleveland, OH) 05000440 https://www.nrc.gov/info-finder/reactors/perr1.html	III	BWR-MARK 3 GE 6 GIL KAIS	3,758 NPF-58	05/03/1977	73
				11/13/1986	86
				11/18/1987	83
				N/A	91
				03/18/2026	85
				99	
Point Beach Nuclear Plant, Unit 1 NextEra Energy Point Beach, LLC Two Rivers, WI (13 miles NW of Manitowoc, WI) 05000266 https://www.nrc.gov/info-finder/reactors/poin1.html	III	PWR-DRYAMB WEST 2LP BECH BECH	1,800 DPR-24	07/19/1967	84
				10/05/1970	90
				12/21/1970	92
				12/22/2005	86
				10/05/2030	86
				99	
Point Beach Nuclear Plant, Unit 2 NextEra Energy Point Beach, LLC Two Rivers, WI (13 miles NW of Manitowoc, WI) 05000301 https://www.nrc.gov/info-finder/reactors/poin2.html	III	PWR-DRYAMB WEST 2LP BECH BECH	1,800 DPR-27	07/25/1968	93
				03/08/1973 ^E	90
				10/01/1972	94
				12/22/2005	86
				03/08/2033	85
				94	
Prairie Island Nuclear Generating Plant, Unit 1 Northern States Power Co.—Minnesota Welch, MN (28 miles SE of Minneapolis, MN) 05000282 https://www.nrc.gov/info-finder/reactors/prai1.html	III	PWR-DRYAMB WEST 2LP FLUR NSP	1,677 DPR-42	06/25/1968	90
				04/05/1974 ^F	84
				12/16/1973	77
				06/27/2011	81
				08/09/2033	88
				89	
Prairie Island Nuclear Generating Plant, Unit 2 Northern States Power Co.—Minnesota Welch, MN (28 miles SE of Minneapolis, MN) 05000306 https://www.nrc.gov/info-finder/reactors/prai2.html	III	PWR-DRYAMB WEST 2LP FLUR NSP	1,677 DPR-60	06/25/1968	59
				10/29/1974	101
				12/21/1974	65
				06/27/2011	78
				10/29/2034	80
				100	

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

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




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APPENDIX A 
Commercial Nuclear Power Reactors
Operating Reactors (continued)


Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2013– 2018* Capacity Factor (Percent)
Quad Cities Nuclear Power Station, Unit 1 Exelon Generation Co., LLC Cordova, IL (20 miles NE of Moline, IL) 05000254 https://www.nrc.gov/info-finder/reactors/quad1.html	III	BWR-MARK 1 GE 3 S&L UE&C	2,957 DPR-29	02/15/1967 12/14/1972 02/18/1973 10/28/2004 12/14/2032	85 103 83 92 85 99
Quad Cities Nuclear Power Station, Unit 2 Exelon Generation Co., LLC Cordova, IL (20 miles NE of Moline, IL) 05000265 https://www.nrc.gov/info-finder/reactors/quad2.html	III	BWR-MARK 1 GE 3 S&L UE&C	2,957 DPR-30	02/15/1967 12/14/1972 03/10/1973 10/28/2004 12/14/2032	91 90 95 85 89 92
R.E. Ginna Nuclear Power Plant R.E. Ginna Nuclear Power Plant, LLC Ontario, NY (20 miles NE of Rochester, NY) 05000244 https://www.nrc.gov/info-finder/reactors/ginn.html	I	PWR-DRYAMB WEST 2LP GIL BECH	1,775 DPR-18	04/25/1966 09/19/1969 07/01/1970 05/19/2004 09/18/2029	93 91 89 94 87 93
River Bend Station, Unit 1 Entergy Operations, Inc. St. Francisville, LA (24 miles NNW of Baton Rouge, LA) 05000458 https://www.nrc.gov/info-finder/reactors/rbs1.html	IV	BWR-MARK 3 GE 6 S&W S&W	3,091 NPF-47	03/25/1977 11/20/1985 06/16/1986 12/20/2018 08/29/2045	84 96 76 78 77 82
St. Lucie Plant, Unit 1 Florida Power & Light Co. Jensen Beach, FL (10 miles SE of Ft. Pierce, FL) 05000335 https://www.nrc.gov/info-finder/reactors/stl1.html	II	PWR-DRYAMB CE EBSO EBSO	3,020 DPR-67	07/01/1970 03/01/1976 12/21/1976 10/02/2003 03/01/2036	74 101 83 68 90 91
St. Lucie Plant, Unit 2 Florida Power & Light Co. Jensen Beach, FL (10 miles SE of Ft. Pierce, FL) 05000389 https://www.nrc.gov/info-finder/reactors/stl2.html	II	PWR-DRYAMB CE EBSO EBSO	3,020 NPF-16	05/02/1977 04/06/1983 08/08/1983 10/02/2003 04/06/2043	91 82 77 85 84 87
Salem Nuclear Generating Station, Unit 1 PSE&G Nuclear, LLC Hancocks Bridge, NJ (18 miles SE of Wilmington, DE) 05000272 https://www.nrc.gov/info-finder/reactors/salm1.html	I	PWR-DRYAMB WEST 4LP PSEG UE&C	3,459 DPR-70	09/25/1968 12/01/1976 06/30/1977 06/30/2011 08/13/2036	88 86 95 99 90 100



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	2013– 2018* Capacity Factor (Percent)
Salem Nuclear Generating Station, Unit 2 PSE&G Nuclear, LLC Hancocks Bridge, NJ (18 miles SE of Wilmington, DE) 05000311 https://www.nrc.gov/info-finder/reactors/salm2.html	I	PWR-DRYAMB	3,459	09/25/1968	100
		WEST 4LP	DPR-75	05/20/1981	73
		PSEG		10/13/1981	85
		UE&C		06/30/2011	71
				04/18/2040	85
				87	
Seabrook Station, Unit 1 NextEra Energy Seabrook, LLC Seabrook, NH (13 miles S of Portsmouth, NH) 05000443 https://www.nrc.gov/info-finder/reactors/seab1.html	I	PWR-DRYAMB	3,648	07/07/1976	100
		WEST 4LP	NPF-86	03/15/1990	93
		UE&C		08/19/1990	87
		UE&C		03/12/2019	90
				03/15/2050	92
				92	
Sequoyah Nuclear Plant, Unit 1 Tennessee Valley Authority Soddy-Daisy, TN (16 miles NE of Chattanooga, TN) 05000327 https://www.nrc.gov/info-finder/reactors/seq1.html	II	PWR-ICECND	3,455	05/27/1970	83
		WEST 4LP	DPR-77	09/17/1980	100
		TVA		07/01/1981	87
		TVA		09/24/2015	90
				09/17/2040	88
				89	
Sequoyah Nuclear Plant, Unit 2 Tennessee Valley Authority Soddy-Daisy, TN (16 miles NE of Chattanooga, TN) 05000328 https://www.nrc.gov/info-finder/reactors/seq2.html	II	PWR-ICECND	3,455	05/27/1970	90
		WEST 4LP	DPR-79	09/15/1981	90
		TVA		06/01/1982	73
		TVA		09/25/2015	95
				09/15/2041	83
				88	
Shearon Harris Nuclear Power Plant, Unit 1 Duke Energy Progress, Inc. New Hill, NC (20 miles SW of Raleigh, NC) 05000400 https://www.nrc.gov/info-finder/reactors/har1.html	II	PWR-DRYAMB	2,948	01/27/1978	83
		WEST 3LP	NPF-63	10/24/1986	99
		EBSO		05/02/1987	87
		DANI		12/17/2008	88
				10/24/2046	99
				89	
South Texas Project, Unit 1 STP Nuclear Operating Co. Bay City, TX (90 miles SW of Houston, TX) 05000498 https://www.nrc.gov/info-finder/reactors/stp1.html	IV	PWR-DRYAMB	3,853	12/22/1975	91
		WEST 4LP	NPF-76	03/22/1988	81
		BECH		08/25/1988	78
		EBSO		09/28/2017	73
				08/20/2047	85
				89	
South Texas Project, Unit 2 STP Nuclear Operating Co. Bay City, TX (90 miles SW of Houston, TX) 05000499 https://www.nrc.gov/info-finder/reactors/stp2.html	IV	PWR-DRYAMB	3,853	12/22/1975	59
		WEST 4LP	NPF-80	03/28/1989	103
		BECH		06/19/1989	85
		EBSO		09/28/2017	92
				12/15/2048	97
				90	



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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	2013- 2018* Capacity Factor (Percent)
Surry Power Station, Unit 1 Virginia Electric and Power Co. Surry, VA (17 miles NW of Newport News, VA) 05000280 https://www.nrc.gov/info-finder/reactors/sur1.html	II	PWR-DRYSUB	2,587	06/25/1968	91
		WEST 3LP	DPR-32	05/25/1972	99
		S&W		12/22/1972	76
		S&W		03/20/2003	96
				05/25/2032	101
				87	
Surry Power Station, Unit 2 Virginia Electric and Power Co. Surry, VA (17 miles NW of Newport News, VA) 05000281 https://www.nrc.gov/info-finder/reactors/sur2.html	II	PWR-DRYSUB	2,587	06/25/1968	101
		WEST 3LP	DPR-37	01/29/1973	95
		S&W		05/01/1973	82
		S&W		03/20/2003	101
				01/29/2033	93
				88	
Susquehanna Steam Electric Station, Unit 1 Susquehanna Nuclear, LLC Berwick (Luzerne County), PA (70 miles NE of Harrisburg, PA) 05000387 https://www.nrc.gov/info-finder/reactors/susq1.html	I	BWR-MARK 2	3,952	11/03/1973	87
		GE 4	NPF-14	07/17/1982	83
		BECH		06/08/1983	76
		BECH		11/24/2009	77
				07/17/2042	97
				86	
Susquehanna Steam Electric Station, Unit 2 Susquehanna Nuclear, LLC Berwick (Luzerne County), PA (70 miles NE of Harrisburg, PA) 05000388 https://www.nrc.gov/info-finder/reactors/susq2.html	I	BWR-MARK 2	3,952	11/03/1973	80
		GE 4	NPF-22	03/23/1984	88
		BECH		02/12/1985	82
		BECH		11/24/2009	93
				03/23/2044	86
				99	
Three Mile Island Nuclear Station, Unit 1 Exelon Generation Co., LLC Middletown, PA (10 miles SE of Harrisburg, PA) 05000289 https://www.nrc.gov/info-finder/reactors/tmi1.html	I	PWR-DRYAMB	2,568	05/18/1968	78
		B&W LLP	DPR-50	04/19/1974	104
		GIL		09/02/1974	77
		UE&C		10/22/2009	82
				04/19/2034	80
				100	
Turkey Point Nuclear Generating, Unit 3 Florida Power & Light Co. Homestead, FL (20 miles S of Miami, FL) 05000250 https://www.nrc.gov/info-finder/reactors/tp3.html	II	PWR-DRYAMB	2,644	04/27/1967	81
		WEST 3LP	DPR-31	07/19/1972	84
		BECH		12/14/1972	78
		BECH		06/06/2002	93
				07/19/2032	80
				89	
Turkey Point Nuclear Generating, Unit 4 Florida Power & Light Co. Homestead, FL (20 miles S of Miami, FL) 05000251 https://www.nrc.gov/info-finder/reactors/tp4.html	II	PWR-DRYAMB	2,644	04/27/1967	70
		WEST 3LP	DPR-41	04/10/1973	88
		BECH		09/07/1973	106
		BECH		06/06/2002	99
				04/10/2033	98
				100	



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	2013- 2018* Capacity Factor (Percent)
Virgil C. Summer Nuclear Station, Unit 1 South Carolina Electric & Gas Co. Jenkinsville, SC (26 miles NW of Columbia, SC) 05000395 https://www.nrc.gov/info-finder/reactors/sum.html	II	PWR-DRYAMB	2,900	03/21/1973	93
		WEST 3LP	NPF-12	11/12/1982	81
		GIL		01/01/1984	79
		DANI		04/23/2004	96
				08/06/2042	77
				85	
Vogtle Electric Generating Plant, Unit 1 Southern Nuclear Operating Co., Inc. Waynesboro, GA (26 miles SE of Augusta, GA) 05000424 https://www.nrc.gov/info-finder/reactors/vog1.html	II	PWR-DRYAMB	3,625.6	06/28/1974	101
		WEST 4LP	NPF-68	03/16/1987	87
		SBEC		06/01/1987	91
		GPC		06/03/2009	101
				01/16/2047	93
				93	
Vogtle Electric Generating Plant, Unit 2 Southern Nuclear Operating Co., Inc. Waynesboro, GA (26 miles SE of Augusta, GA) 05000425 https://www.nrc.gov/info-finder/reactors/vog2.html	II	PWR-DRYAMB	3,625.6	06/28/1974	87
		WEST 4LP	NPF-81	03/31/1989	92
		SBEC		05/20/1989	100
		GPC		06/03/2009	94
				02/09/2049	96
				100	
Waterford Steam Electric Station, Unit 3 Entergy Operations, Inc. Killona, LA (25 miles W of New Orleans, LA) 05000382 https://www.nrc.gov/info-finder/reactors/wat3.html	IV	PWR-DRYAMB	3,716	11/14/1974	89
		COMB CE	NPF-38	03/16/1985	90
		EBSO		09/24/1985	80
		EBSO		12/27/2018	96
				12/18/2044	80
				100	
Watts Bar Nuclear Plant, Unit 1 Tennessee Valley Authority Spring City, TN (60 miles SW of Knoxville, TN) 05000390 https://www.nrc.gov/info-finder/reactors/wb1.html	II	PWR-ICECND	3,459	01/23/1973	90
		WEST 4LP	NPF-90	02/07/1996	89
		TVA		05/27/1996	76
		TVA		N/A	85
				11/09/2035	77
					87
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	3,411	01/24/1973	—
		WEST 4LP	NPF-96	10/22/2015	—
		TVA		10/19/2016	0
		TVA		N/A	26
				10/22/2055	45
				95	
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	3,565	05/17/1977	65
		WEST 4LP	NPF-42	06/04/1985 ^G	83
		BECH		09/03/1985	78
		DANI		11/20/2008	74
				03/11/2045	96
				86	

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



APPENDIX A

Commercial Nuclear Power Reactors

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
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
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
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
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
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 WEST 2LP	3,400 NPF-104	04/12/2018
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 WEST 2LP	3,400 NPF-105	04/12/2018
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



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
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
William States Lee III Nuclear Station, Unit 3 ^A 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
William States Lee III Nuclear Station, Unit 4 ^A 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

A: 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, combined licenses (COLs) be withdrawn.

Note: Plant names and data are as identified on the license as of July 2019; the next printed update will be in August 2020.

Source: NRC, with some data compiled from the U.S. Department of Energy's (DOE's) Energy Information Administration (EIA).



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)									
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	02/25/08	COL Issued 12/19/2016
Progressive Energy	05200022 & 05200023	COL	02/19/08	AP1000	Shearon Harris, Units 2 and 3	NC	Yes	04/17/08	Suspended—05/02/2013
Southern Nuclear Operating Co., Inc.	05200025 & 05200026	COL	03/31/08	AP1000	Vogtle, Units 3 and 4	GA	Yes	05/30/08	COL Issued 02/10/2012
AmerenUE	05200037	COL	07/24/08	U.S. EPR	Callaway, Unit 2	MO	Yes	12/12/08	Withdrawn—10/19/2015
DTE Electric Company	05200033	COL	09/18/08	ESBWR	Fermi, Unit 3	MI	Yes	11/25/08	COL Issued 05/01/2015
Luminant Generation Co.	05200034 & 05200035	COL	09/19/08	US-APWR	Comanche Peak, Units 3 and 4	TX	Yes	12/2/08	Suspended—03/31/2014
Entergy	05200036	COL	09/25/08	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	06/30/09	AP1000	Turkey Point, Units 6 and 7	FL	Yes	09/4/09	COL Issued 04/12/2018
Design Certification									
AREVA NP	05200020	DC	12/11/07	U.S. EPR	N/A	N/A	N/A	02/25/08	Suspended—03/27/2015
Mitsubishi Heavy Industries	05200021	DC	12/31/07	US-APWR	N/A	N/A	N/A	02/29/08	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	03/4/15	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	02/14/11	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	05/25/10	Not yet announced	PSEG Site	NJ	Yes	08/4/10	Issued 05/06/2016
TVA Clinch River SMR Site	05200047	ESP	05/25/10	Not yet announced	Clinch River Site	TN	No	01/12/17	Scheduled

Notes: Withdrawal was requested for Calvert Cliffs, Grand Gulf, Nine Mile Point, Victoria County, Bellefonte, and Callaway combined license and early site permit (ESP). In September 2017, Duke Energy announced cancellation of William States Lee nuclear power plant Units 3 and 4 project. Data are current as of May 2019; the next printed update will be in August 2020. 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 2025	SAFSTOR SAFSTOR
GE VBWR (Vallecitos) Sunol, CA 05000018	BWR 50	GE	08/31/1957 12/09/1963 2025	SAFSTOR SAFSTOR
Haddam Neck Meriden, CT 05000213	PWR 1,825	WEST	12/27/1974 12/05/1996 11/26/2007	DECON DECON Completed



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 2036	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
Oyster Creek Forked River, NJ 05000219	BWR 1,930	GE	04/09/1969 09/17/2018 2078	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
Pilgrim Plymouth, MA 05000293	BWR-MARK 1 2,028	GE 3	06/08/1972 05/31/2019 2064	SAFSTOR SAFSTOR



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
Rancho Seco Herald, CA 05000312	PWR 2,772	B&W	08/16/1974 06/07/1989 09/25/2009	DECON DECON Completed
San Onofre 1* San Clemente, CA 05000206	PWR 1,347	WEST	03/27/1967 11/30/1992 2030	DECON SAFSTOR
San Onofre 2 San Clemente, CA 05000361	PWR CE 3,438	CE	02/16/1982 06/12/2013 2030	DECON DECON in Progress
San Onofre 3 San Clemente, CA 05000362	PWR CE 3,438	CE	11/15/1982 06/12/2013 2030	DECON DECON in Progress
Savannah, N.S. Baltimore, MD 05000238	PWR 74	B&W	08/1965 11/1970 2031	DECON DECON in Progress
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



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
Vermont Yankee Vernon, VT 05000271	BWR-Mark 1 1,912	GE 4	03/21/1972 12/29/2014 2030	DECON DECON in Progress
Zion 1 Zion, IL 05000295	PWR 3,250	WEST	10/19/1973 02/21/1997 2020	DECON DECON in Progress
Zion 2 Zion, IL 05000304	PWR 3,250	WEST	11/14/1973 09/19/1996 2020	DECON DECON in Progress

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

** Three Mile Island Unit 2 has been placed in a postdefueling monitored storage *mode* until Unit 1 permanently ceases operation, at which time both units are planned to be decommissioned. Unit 1 is scheduled to permanently shutdown in September 2019.

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 2019. The next printed update will be in August 2020.



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



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



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



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




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 MWT per Unit	Canceled Date Status Docket Number
Bellefonte 3 & 4 Tennessee Valley Authority Scottsboro, Jackson County, AL	AP1000 3,763	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 1,594	July 17, 2015 With COL Review 05200016
Grand Gulf 3 Entergy Operations, Inc. Near Port Gibson in Claiborne County, MS	ESBWR 1,594	January 9, 2009 With COL Review 05200024
Levy 1 and 2 Duke Energy Florida 2 miles NE of Inglis, 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 1,594	January 9, 2009 With COL Review 05000038
River Bend 3 Entergy Operations, Inc. St. Francisville, LA	ESBWR 1,594	June 14, 2016 With COL Review 05200036
South Texas Project 3 and 4 Nuclear Innovation North America, LLC Bay City, TX	ABWR 3,926	July 12, 2018 With COL 05200012 & 05200013
V.C. Summer, Units 2 and 3 South Carolina Electric & Gas Co. Jenkinsville, SC	AP100 1,100	March 6, 2019 With COL 05200027 & 05200028
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 & 0520003

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. NRC actions are still pending. In September 2017, Duke Energy announced plans to cancel William States Lee III, SC Units 3 and 4 project.

Data are current as of July 2019; the next printed update will be in August 2020. NRC-abbreviated reactor names listed.

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



APPENDIX E 

Commercial Nuclear Power Reactors by Parent Company

Utility	NRC-Abbreviated Reactor Unit Name
AmerenUE <i>www.ameren.com</i>	Callaway*
Arizona Public Service Company <i>www.aps.com</i>	Palo Verde 1, 2, & 3*
Dominion Generation <i>www.dom.com</i>	Millstone 2 & 3 North Anna 1 & 2 Surry 1 & 2
DTE Electric Company <i>www.dteenergy.com</i>	Fermi 2
Duke Energy <i>www.duke-energy.com</i>	Brunswick 1 & 2 Catawba 1 & 2 Harris 1 McGuire 1 & 2 Oconee 1, 2, & 3 Robinson 2
Energy Northwest <i>www.energy-northwest.com</i>	Columbia
Entergy Corporation, Inc. <i>www.entergy-nuclear.com</i> (formerly Entergy Nuclear Operations, Inc.)	Arkansas Nuclear One 1 & 2 Grand Gulf 1 Indian Point 2 & 3 Palisades River Bend 1 Waterford 3
Exelon Corporation, LLC <i>www.exeloncorp.com</i>	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 Peach Bottom 2 & 3 Quad Cities 1 & 2 Three Mile Island 1
First Energy Nuclear Operating Company <i>www.firstenergycorp.com</i>	Beaver Valley 1 & 2 Davis-Besse Perry 1
Indiana Michigan Power Company <i>www.indianamichiganpower.com</i>	Cook 1 & 2



APPENDIX E **Commercial Nuclear Power Reactors by Parent Company (continued)**

Utility	NRC-Abbreviated Reactor Unit Name
Nebraska Public Power District <i>www.nppd.com</i>	Cooper
NextEra Energy Inc. with principal subsidiaries Florida Power & Light Co. and NextEra Energy Resources, LLC <i>www.fplgroup.com</i>	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 <i>www.xcelenergy.com</i>	Monticello Prairie Island 1 & 2
Pacific Gas & Electric Company <i>www.pge.com</i>	Diablo Canyon 1 & 2*
PSEG Nuclear, LLC <i>www.pseg.com</i>	Hope Creek 1 Salem 1 & 2
South Carolina Electric & Gas Company <i>www.sceg.com</i>	Summer 1
Southern Nuclear Operating Company <i>www.southerncompany.com</i>	Farley 1 & 2 Hatch 1 & 2 Vogtle 1 & 2
STP Nuclear Operating Company <i>www.stpegs.com</i>	South Texas Project 1 & 2*
Talen Energy Corp. <i>www.talenenergy.com</i>	Susquehanna 1 & 2
Tennessee Valley Authority <i>www.tva.gov</i>	Browns Ferry 1, 2, & 3 Sequoyah 1 & 2 Watts Bar 1 & 2
Vistra Energy <i>www.vistraenergy.com</i>	Comanche Peak 1 & 2*
Wolf Creek Nuclear Operating Corporation <i>www.wolfcreeknuclear.com</i>	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 2019; the next printed update will be in August 2020.



APPENDIX F Commercial Nuclear Power Reactor Operating Licenses—
Issued by Year

1969 Dresden 2* Ginna* Nine Mile Point 1*	Cook 1 Duane Arnold FitzPatrick Hatch 1 Oconee 3 Peach Bottom 3 Prairie Island 1 Prairie Island 2 Three Mile Island 1	1981 Farley 2 McGuire 1 Salem 2 Sequoyah 2	Hope Creek 1 Millstone 3 Palo Verde 2 Perry 1
1970 Point Beach 1* Robinson 2		1982 LaSalle 1 Summer Susquehanna 1	1987 Beaver Valley 2 Braidwood 1 Byron 2 Clinton Harris 1 Nine Mile Point 2 Palo Verde 3 Vogtle 1
1971 Dresden 3 Monticello*		1983 McGuire 2 St. Lucie 2	
1972 Palisades* Quad Cities 1 Quad Cities 2 Surry 1 Turkey Point 3	1975 Millstone 2 1976 Beaver Valley 1 Browns Ferry 3 Brunswick 1 Calvert Cliffs 2 Indian Point 3 Salem 1 St. Lucie 1	1984 Callaway Columbia Diablo Canyon 1 Grand Gulf 1 LaSalle 2 Susquehanna 2	1988 Braidwood 2 South Texas Project 1
1973 Browns Ferry 1 Indian Point 2 Oconee 1 Oconee 2 Peach Bottom 2 Point Beach 2* Surry 2 Turkey Point 4	1977 Davis-Besse D.C. Cook 2 Farley 1	1985 Byron 1 Catawba 1 Diablo Canyon 2 Fermi 2 Limerick 1 Palo Verde 1 River Bend 1 Waterford 3 Wolf Creek 1	1989 South Texas Project 2 Vogtle 2
1974 Arkansas Nuclear 1 Browns Ferry 2 Brunswick 2 Calvert Cliffs 1 Cooper	1978 Arkansas Nuclear 2 Hatch 2 North Anna 1	1986 Catawba 2	1990 Comanche Peak 1 Seabrook 1 1993 Comanche Peak 2 1996 Watts Bar 1 2015 Watts Bar 2
	1980 North Anna 2 Sequoyah 1		

* The Atomic Energy Commission 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 2019; the next printed update will be in August 2020.

APPENDIX G Commercial Nuclear Power Reactor Operating Licenses—
Expiration by Year, 2024–2055

2024 Indian Point 2 Diablo Canyon 1	Point Beach 2 Prairie Island 1 Surry 2 Turkey Point 4	2037 Cook 2 Davis-Besse 1 Farley 1	Susquehanna 2 Waterford 3
2025 Diablo Canyon 2 Indian Point 3		2038 Arkansas Nuclear 2 Hatch 2 North Anna 1	2045 Fermi 2 Millstone 3 Palo Verde 1 River Bend 1 Wolf Creek 1
2026 Clinton Perry	2034 Arkansas Nuclear 1 Browns Ferry 2 Brunswick 2 Calvert Cliffs 1	2040 North Anna 2 Salem 2 Sequoyah 1	2046 Braidwood 1 Byron 2 Harris 1 Hope Creek Nine Mile Point 2 Palo Verde 2
2029 Dresden 2 Ginna Nine Mile Point 1	Cook 1 Cooper Duane Arnold FitzPatrick Hatch 1 Oconee 3 Peach Bottom 3 Prairie Island 2 Three Mile Island 1	2041 Farley 2 McGuire 1 Sequoyah 2	2047 Beaver Valley 2 Braidwood 2 Palo Verde 3 South Texas Project 1 Vogtle 1
2030 Comanche Peak 1 Monticello Point Beach 1 Robinson 2 Seabrook	2035 Millstone 2 Watts Bar 1	2042 LaSalle 1 Summer Susquehanna 1	2048 South Texas Project 2
2031 Dresden 3 Palisades	2036 Beaver Valley 1 Browns Ferry 3 Brunswick 1 Calvert Cliffs 2 St. Lucie 1 Salem 1	2043 Catawba 2 Columbia LaSalle 2 McGuire 2 St. Lucie 2	2049 Limerick 2 Vogtle 2
2032 Pilgrim Quad Cities 1 Quad Cities 2 Surry 1 Turkey Point 3		2044 Byron 1 Calloway Grand Gulf 1 Limerick 1	2050 Seabrook 2055 Watts Bar 2
2033 Browns Ferry 1 Comanche Peak 2 Oconee 1 Oconee 2 Peach Bottom 2			

Notes: NRC-abbreviated reactor names listed. Data are current as of July 2019; the next printed update will be in August 2020.



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	1,250	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



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 2019; the next printed update will be in August 2020.



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

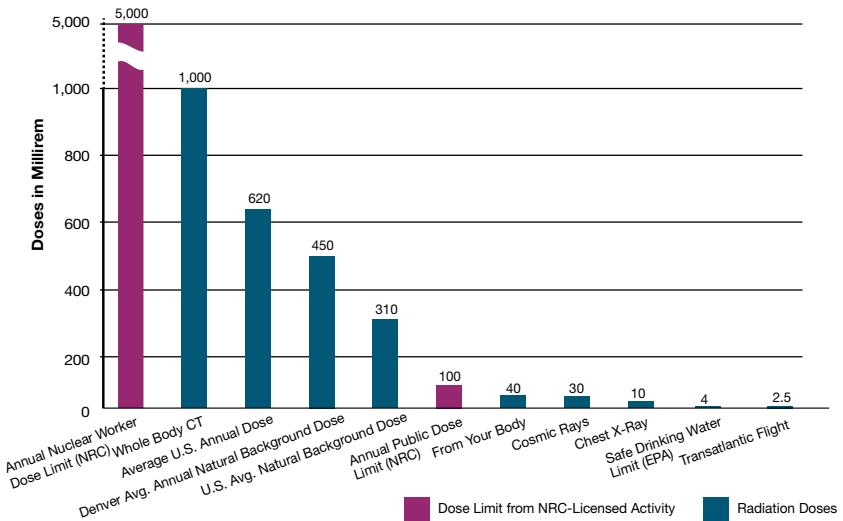
APPENDIX I 

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

Note: Data are current as of July 2019; the next printed update will be in August 2020.

**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 1955–2019

Year	Original Licensing Regulations (10 CFR Part 50) ¹		Alternative Licensing Regulations (10 CFR Part 52) ³			
	CP Issued ²	Full-Power OL Issued	COL Issued ⁴	Operating COLs ⁵	Permanent Shutdowns ⁶	Operable Units
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 ₇	13
1965	1	0	--	--	0	13
1966	5	2	--	--	1 ₇	14
1967	14	3	--	--	2	15
1968	23	0	--	--	1 ₇	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 ₇	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



APPENDIX K

Commercial Nuclear Power Plant Licensing History 1955–2019 (continued)

Year	Original Licensing Regulations (10 CFR Part 50) ¹		Alternative Licensing Regulations (10 CFR Part 52) ³		Permanent Shutdowns ⁶	Operable Units
	CP Issued ²	Full-Power OL Issued	COL Issued ⁴	Operating COLs ⁵		
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 unit	0	0	100
2016	0	0	6 units	0	1	99
2017	0	0	1 unit	0	0	99
2018	0	0	2 units	0	1	98
2019	0	0	0	0	1	97
Total	177	133	14 units	0	36	--

 U.S. Atomic Energy Commission was the regulatory authority.

-- Not applicable

¹ Data in columns 1–3 are based on 10 CFR Part 50. Numbers reflect permits or licenses issued in a given year, not extant permits or licenses

² Issuance by regulatory authority of a permit, or equivalent permission, to begin construction. Under alternative licensing regulations in 10 CFR Part 52, a construction permit (CP) is not issued separately from the operating license.

³ Data in columns 4–6 are based on 10 CFR Part 52. Numbers reflect permits or licenses issued in a given year, not extant permits or licenses.

⁴ Number of combined licenses (COLs) issued in a given year, including six that were subsequently terminated. See Appendix A on status of plant construction and Appendix B for more information on withdrawn and suspended applications.

⁵ Issuance by NRC of a finding under 10CFR 52.103(g), in a given year.

⁶ Number of operating plants transitioned to shutdown in a given year. Does not represent the total number of reactor units included.

⁷ These are DOE nuclear legacy sites Hallam (1964), Piqua (1966), Elk River (1968) and Shippingport (1982). For more information visit DOE's Legacy Management Web site at <https://energy.gov/lms/sites/lm-sites> and see the Glossary for definitions of decommissioning alternatives (DECON, SAFSTOR).

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

Data are current as of July 2019.



APPENDIX L

Materials Licenses by State

State	Number of Licenses	
	NRC	Agreement States
Alabama	12	372
Alaska	62	0
Arizona	6	353
Arkansas	4	179
California	50	1,724
Colorado	14	323
Connecticut	125	0
Delaware	42	0
District of Columbia	34	0
Florida	18	1,645
Georgia	17	392
Hawaii	53	0
Idaho	68	0
Illinois	22	604
Indiana	218	0
Iowa	1	150
Kansas	13	265
Kentucky	10	358
Louisiana	13	411
Maine	2	94
Maryland	63	527
Massachusetts	17	410
Michigan	388	0
Minnesota	13	151
Mississippi	5	265
Missouri	230	0
Montana	76	0
Nebraska	3	134
Nevada	1	235
New Hampshire	3	81
New Jersey	24	540

State	Number of Licenses	
	NRC	Agreement States
New Mexico	9	207
New York	15	1,272
North Carolina	18	571
North Dakota	4	84
Ohio	38	553
Oklahoma	12	232
Oregon	2	283
Pennsylvania	42	598
Rhode Island	2	41
South Carolina	4	332
South Dakota	33	0
Tennessee	19	517
Texas	48	1,485
Utah	10	196
Vermont	29	0
Virginia	52	389
Washington	14	325
West Virginia	148	0
Wisconsin	6	279
Wyoming	73	14
Puerto Rico	105	0
Virgin Islands	9	0
Guam	6	0
American Samoa	2	0
Northern Marianas	1	0
Total number of materials licenses in Agreement State jurisdiction		16,589
Total number of materials licenses in NRC jurisdiction		2,308
Total number of materials licenses in the United States		18,897

 Agreement State  States Pursuing Agreements

Notes: The NRC and Agreement State data are current as of June 2019. 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 2020. 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	07001113
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
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
Uranium Enrichment Laser Separation Facility			
GE-Hitachi Global Laser Enrichment, LLC	Wilmington, NC	license issued, construction halted	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.

Notes: On February 8, 2018, the NRC issued a termination of the Construction Authorization (CAMOX-001) for the Mixed Oxide Fuel Fabrication Facility (see ADAMS Accession No. ML 1832A665).

Data are current as of July 2019; the next printed update will be in August 2020.



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
TN Americas, LLC (formerly Transnuclear, Inc.)	07201005	TN-24 (expired)
	07201027	TN-68
	07201021	TN-32
	07201004	Standardized NUHOMS®-24P, -24PHB, -24PTH, -32PT, -32PTH1, -37PTH, -52B, -61BT DSC, -61BTH, -69BTH
	07201029	Standardized Advanced NUHOMS®-24PT1, -24PT4
	07201030	NUHOMS® HD-32PTH
	07201042	NUHOMS® EOS

Notes: Data are current as of July 2019; the next printed update will be in August 2020. (See latest list on the NRC Web site at <https://www.nrc.gov/wastelspent-fuel-storage/designs.html>.)



APPENDIX O

Dry Cask Spent Fuel Storage Licensees

Name Licensee	License Type	Vendor	Storage Model	Docket Number
Arkansas Nuclear Entergy Nuclear Operations, Inc.	GL	EnergySolutions, Inc. Holtec International	VSC-24 HI-STORM 100	07200013
Beaver Valley FirstEnergy Nuclear Operating Company	GL	TN Americas, LLC	NUHOMS®-37PTH	07201043
Big Rock Point Entergy Nuclear Operations, Inc.	GL	EnergySolutions, 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	TN Americas, LLC	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	TN Americas, LLC	NUHOMS®-24P NUHOMS®-32P	07200008
Catawba Duke Energy Carolinas, LLC	GL	NAC International, Inc.	NAC-UMS MAGNASTOR	07200045
Clinton Exelon Generation Co., LLC	GL	Holtec International	HI-STORM FW	07201046
Columbia Generating Station Energy Northwest	GL	Holtec International	HI-STORM 100S	07200035
Comanche Peak Luminant Generation Company, LLC	GL	Holtec International	HI-STORM 100	07200074
Cooper Nuclear Station Nebraska Public Power District	GL	TN Americas, LLC	NUHOMS®-61BT	07200066
Crystal River Duke Energy Company	GL	TN Americas, LLC	NUHOMS®-32PT	07201035
Davis-Besse FirstEnergy Nuclear Operating Company	GL	TN Americas, LLC	NUHOMS®-24P NUHOMS®-32PTH	07200014
DC Cook Indiana/Michigan Power	GL	Holtec International	HI-STORM 100	07200072
Diablo Canyon Pacific Gas & Electric Co.	SL	Holtec International	HI-STORM 100	07200026



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	TN Americas, LLC	NUHOMS®-61BT	07200032
Fermi DTE Electric Company	GL	Holtec International	HI-STORM 100	07200071
Fort Calhoun Omaha Public Power District	GL	TN Americas, LLC	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	TN Americas, LLC TN Americas, LLC	NUHOMS®-7P NUHOMS®-24P NUHOMS®-24PTH	07200003 07200060
Haddam Neck CT Yankee Atomic Power	GL	NAC International, Inc.	NAC-MPC	07200039
Hatch Southern Nuclear Operating Co. Inc.	GL	Holtec International	HI-STORM100 HI-STAR100	07200036
Hope Creek/Salem PSEG Nuclear, LLC	GL	Holtec International	HI-STORM 100	07200048
Humboldt Bay Pacific Gas & Electric Co.	SL	Holtec International	HI-STAR 100HB	07200027
Idaho National Laboratory TMI-2 U.S. Department of Energy	SL	TN Americas, LLC	NUHOMS®-12T	07200020
Idaho Spent Fuel Facility U.S. Department of Energy	SL	Foster Wheeler	Concrete Vault	07200025
Indian Point Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100	07200051
James A. FitzPatrick Entergy Nuclear	GL	Holtec International Operations, Inc.	HI-STORM 100 HI-STORM 100S	07200012 07200013
Joseph M. Farley Southern Nuclear Operating Co.	GL	Holtec International	HI-STORM 100S	07200042
Kewaunee Dominion Energy Kewaunee, Inc.	GL	TN Americas, LLC NAC International, Inc.	NUHOMS®-32PT MAGNASTOR	07200064
La Salle Exelon Generation Co., LLC	GL	Holtec International	HI-STORM 100S	07200070
Lacrosse Dairyland Power	GL	NAC International, Inc.	NAC-MPC	07200046



APPENDIX O

Dry Cask Spent Fuel Storage Licensees (continued)

Name Licensee	License Type	Vendor	Storage Model	Docket Number
Limerick Exelon Generation Co., LLC	GL	TN Americas, LLC	NUHOMS®-61BT NUHOMS®-61BTH	07200065
Maine Yankee Maine Yankee Atomic Power Company	GL	NAC International, Inc.	NAC-UMS	07200030
McGuire Duke Energy, LLC	GL	TN Americas, LLC NAC International, Inc.	TN-32 NAC-UMS MAGNASTOR	07200038
Millstone Dominion Generation	GL	TN Americas, LLC	NUHOMS®-32PT	07200047
Monticello Northern States Power Co., Minnesota	GL	TN Americas, LLC	NUHOMS®-61BT NUHOMS®-61BTH	07200058
Nine Mile Point Constellation Energy	GL	TN Americas, LLC	NUHOMS®-61BT	07201036
North Anna Virginia Electric & Power Co. (Dominion Energy Virginia)	GL SL	TN Americas, LLC TN Americas, LLC	NUHOMS®32PTH1 TN-32	07200056 07200016
Oconee Duke Energy Company	SL GL	TN Americas, LLC TN Americas, LLC	NUHOMS®-24P NUHOMS®-24P	07200004 07200040
Oyster Creek AmerGen Energy Company, LLC	GL	TN Americas, LLC	NUHOMS®-61BT NUHOMS®-61BTH	07200015
Palisades Entergy Nuclear Operations, Inc.	GL	EnergySolutions, Inc. TN Americas, LLC Holtec International	VSC-24 NUHOMS®-32PT NUHOMS®-24PT HI-STORM FW	07200007
Palo Verde Arizona Public Service Co.	GL	NAC International, Inc.	NAC-UMS	07200044
Peach Bottom Exelon Generation Co., LLC	GL	TN Americas, LLC	TN-68	07200029
Perry FirstEnergy	GL	Holtec International	HI-STORM 100	07200069
Pilgrim Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100	07201044
Point Beach NextEra Energy	GL	EnergySolutions, Inc. TN Americas, LLC	VSC-24 NUHOMS®-32PT	07200005
Prairie Island Northern States Power Co., Minnesota	SL	TN Americas, LLC	TN-40 HT TN-40	07200010
Private Fuel Storage Facility	SL	Holtec International	HI-STORM 100	07200022



APPENDIX O 

Dry Cask Spent Fuel Storage Licensees (continued)

Name Licensee	License Type	Vendor	Storage Model	Docket Number
Quad Cities Exelon Generation Co., LLC	GL	Holtec International	HI-STORM 100S	07200053
Rancho Seco Sacramento Municipal Utility District	SL	TN Americas, LLC	NUHOMS®-24PT	07200011
R.E. Ginna Constellation Energy	GL	TN Americas, LLC	NUHOMS®-32PT	07200067
River Bend Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100S	07200049
Salem PSEG Nuclear (Duplicate, see Hope Creek)	GL	Holtec International	HI-STORM 100	07200048
San Onofre Southern California Edison Co.	GL	TN Americas, LLC Holtec International	NUHOMS®-24PT4 NUHOMS®-24PT1 HI-STORM UMAX	07200041
Seabrook FPL Energy	GL	TN Americas, LLC	NUHOMS®-HD-32PTH	07200063
Sequoyah Tennessee Valley Authority	GL	Holtec International	HI-STORM 100 HI-STORM FW HI-STORM 100S	07200034
South Texas Project STP Nuclear Operating Co.	GL	Holtec International	HI-STORM FW	07201041
St. Lucie Florida Power & Light Co.	GL	TN Americas, LLC	NUHOMS®-HD-32PTH	07200061
Surry Virginia Electric & Power Co. (Dominion Energy Virginia)	SL GL	TN Americas, LLC TN Americas, LLC Gesellschaft für Nuklear-Service NAC International, Inc. Westinghouse	NUHOMS®HD NUHOMS®HD-32PTH Castor NAC-128 MC-10	07200002 07200055
Susquehanna Pennsylvania Power & Light Co.	GL	TN Americas, LLC	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	TN Americas, LLC	NUHOMS®-HD-32PTH	07200062
Vermont Yankee Entergy Nuclear Operations, Inc.	GL	Holtec International	HI-STORM 100	07200059



APPENDIX O

Dry Cask Spent Fuel Storage Licensees (continued)

Name Licensee	License Type	Vendor	Storage Model	Docket Number
Virgil C. Summer South Carolina Electric & Gas	GL	Holtec International	HI-STORM FW	07201038
Vogtle Southern Nuclear Operating Co. Inc.	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 2019, and the next printed update will be in August 2020.

License Types: SL = site-specific license, GL = general license



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**

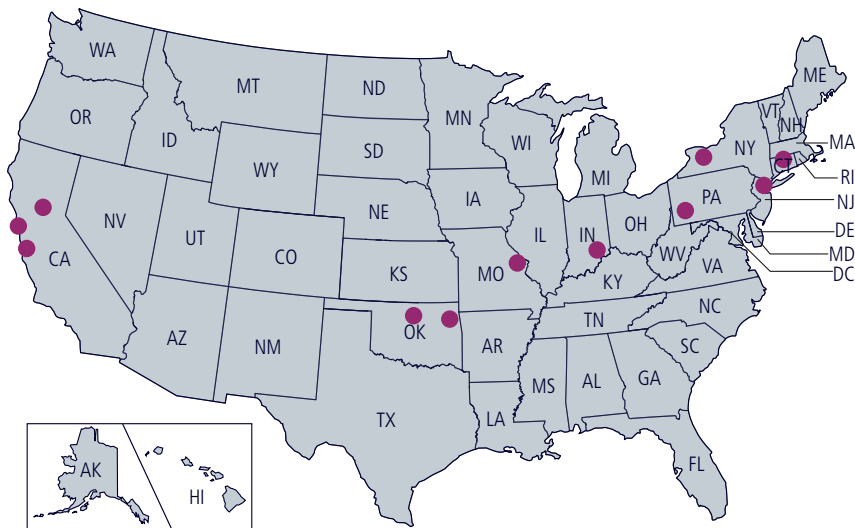
Beatty, NV, closed 1993
Sheffield, IL, closed 1978
Maxey Flats, KY, closed 1977
West Valley, NY, closed 1975

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

Note: Data are current as of July 2019; the next printed update will be in August 2020.



APPENDIX Q 
**NRC-Regulated Complex Materials Sites
 Undergoing Decommissioning**



● NRC-regulated complex materials sites (11)

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 the Army, Jefferson Proving Ground	Madison, IN
Department of the Army, Picatinny Arsenal (ARDEC)	Picatinny, NJ
FMRI, Inc. (Fansteel)	Muskogee, OK
Hunter's Point Naval Shipyard	San Francisco, CA
McClellan Air Force Base	Sacramento, CA
Sigma Aldrich	Maryland Heights, MO
UNC Naval Products	New Haven, CT
West Valley Demonstration Project	West Valley, NY

Note: Data are current as of July 2019. The next printed update will be in August 2020.



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		Under Construction or on Order		Shutdown
		Number of Units	Gross MW Electrical Capacity	Number of Units	Gross MW Electrical Capacity	
Argentina	6,453	3	1,755	1	29	0
Armenia	1,898	1	408	0	0	1 ^P
Bangladesh	0	0	0	2	2,400	0
Belarus	0	0	0	2	2,388	0
Belgium	26,996	7	6,207	0	0	1 ^P
Brazil	15,674	2	1,990	1	1,405	0
Bulgaria	16,125	2	2,000	0	0	4 ^P
Canada	96,037	19	14,512	0	0	6 ^P
China	286,501	46	45,923	11	12,181	0
Czech Republic	28,255	6	4,160	0	0	0
Finland	21,889	4	2,892	1	1,720	0
France	393,200	58	65,880	1	1,650	12 ^P
Germany	71,866	7	10,013	0	0	29 ^P
Hungary	14,857	4	2,000	0	0	0
India	35,389	22	6,780	7	5,300	0
Iran	6,300	1	1,000	0	0	0
Italy	0	0	0	0	0	4 ^P
Japan	49,199	39	38,566	2	2,756	21 ^P
Kazakhstan	0	0	0	0	0	1 ^P
Korea, Republic of	127,075	25	24,866	4	5,600	1 ^P
Lithuania	0	0	0	0	0	2 ^P
Mexico	13,340	2	1,615	0	0	0
Netherlands	3,278	1	515	0	0	1 ^P
Pakistan	9,290	5	1,430	2	2,200	0
Romania	10,442	2	1,411	0	0	0
Russia	191,331	36	30,290	6	4,979	8 ^P
Slovakia	13,789	4	1,950	2	942	3 ^P
Slovenia	5,489	1	727	0	0	0
South Africa	10,564	2	1,940	0	0	0
Spain	53,295	7	7,416	0	0	3 ^P



APPENDIX R

Nuclear Power Units by Nation (continued)

Country	Nuclear Power Production GWh*	Number of Units	Under Construction or on Order		Shutdown	
			Gross MW Electrical Capacity	Gross MW Electrical Capacity		
Sweden	63,849	8	8,984	0	0	5 ^P
Switzerland	24,496	5	3,485	0	0	1 ^P
Turkey	0	0	0	1	1,200	0
Ukraine	84,398	15	13,835	2	2,178	4 ^P
United Arab Emirates	0	0	0	4	5,600	0
United Kingdom	59,098	15	10,362	1	1,720	30 ^P
United States	807,078	98	104,862	2	2,500	35 ^P

Overview of Worldwide Nuclear Power Reactors—As of May 15, 2019

Nuclear Electricity Supplied (GWh)	2,562,758
Net Installed Capacity (MWe)	399,354
Nuclear Power Reactors in Operation	452
Nuclear Power Reactors in Long-Term Shutdown	0
Nuclear Power Reactors in Permanent Shutdown	173
Nuclear Power Reactors under Construction	54

* Annual electrical power production for 2018.

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.

Source: 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 15, 2019. The next printed update will be in August 2020.

APPENDIX S

Nuclear Power Units by Reactor Type, Worldwide

Reactor Type	In Operation	
	Number of Units	Net MWe
Pressurized light-water reactors (PWR)	300	284,897
Boiling light-water reactors (BWR)	73	71,492
Heavy-water reactors, all types (HWR, PHWR)	49	24,557
Gas-cooled reactors, all types (GCR)	14	7,725
Light-water-cooled graphite-moderated reactor (LWGR)	13	9,283
Liquid-metal-cooled fast breeder reactors (FBR)	3	1,400
Total	452	399,354

Note: Megawatts electric values are rounded to the nearest whole number.

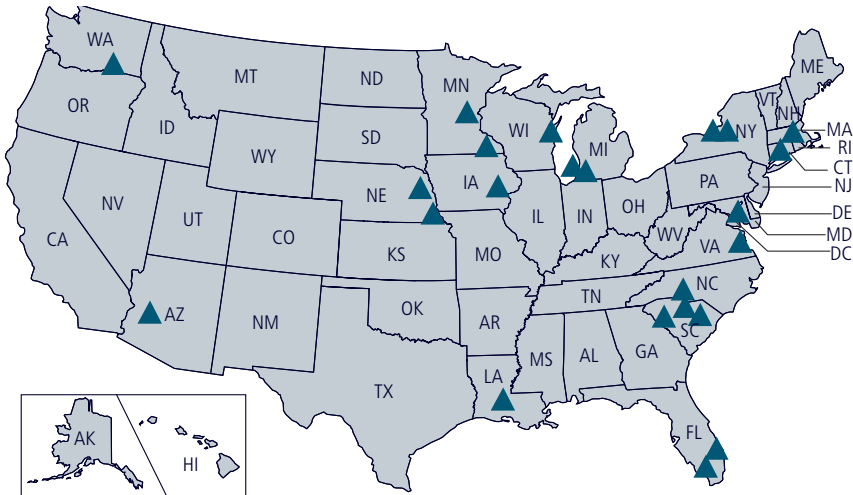
Source: IAEA Power Reactor Information System Database, <https://www.iaea.org> Compiled by the NRC from IAEA data. Data are current as of May 15, 2019. The next printed update will be in August 2020.



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 an Operating Nuclear Power Plant



ARIZONA

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

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
Upper Mattaponi Tribe

MICHIGAN

- Palisades**
Pottawatomie Reservation
Matcheбенashshewish
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.

** Pilgrim nuclear power plant is scheduled to permanently shut down in September 2019.

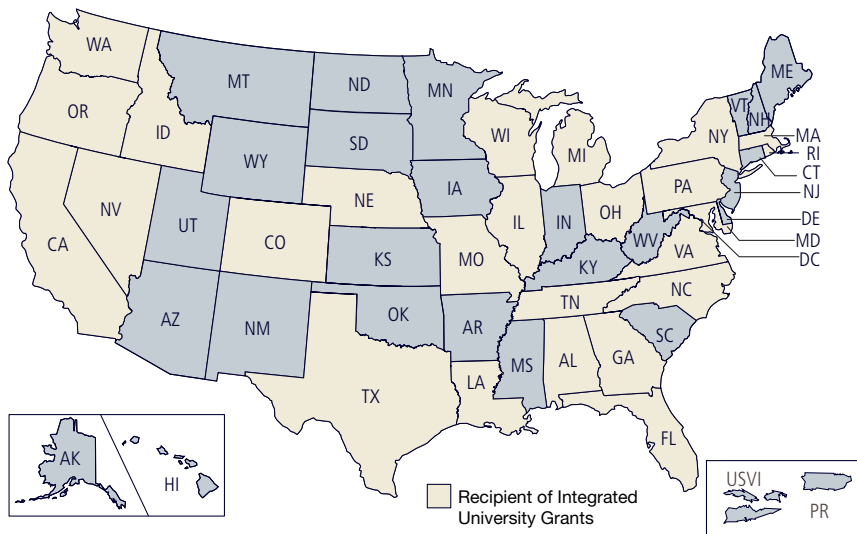
Notes: This table uses NRC-abbreviated reactor names and Native American Reservation and Trust land names. There are no reservations or Trust lands within 50 miles of a reactor in Alaska or Hawaii. For more information on other Tribal concerns, go to the NRC Web site at <https://www.nrc.gov>.

Data as of July 2019, and the next printed update will be August 2020.



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 2018**



Notes:

The 2009 Omnibus Appropriations Act authorized the Integrated University Grants 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 471 IUP grants, including 133 faculty development, 121 scholarship, 136 fellowship, and 81 trade school and community college scholarship grants. More than 130 faculty and 4,200 students have received support. The NRC has invested more than \$145 million in its UPI program to support programs in nuclear engineering and related disciplines.



APPENDIX V 

Significant Enforcement Actions Issued, 2018

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
A-17-146	Defense, Defense Threat Reduction Agency (DTRA)	Materials	2/15/18	SLIII NOV Problem
EA-17-166	Southern Nuclear Operating Co., Inc. (Vogtle)	Reactor	2/20/18	SLIII NOV/CP—\$145,000
EA-17-203	Exelon Generation Co., LLC (Clinton Power Station)	Reactor	2/22/18	White NOV
EA-17-190	BWXT Nuclear Operations Group, Inc. (BWXT)	Fuel Facility	3/8/18	SLIII NOV Problem
EA-17-132 EA-17-153	Entergy Operations, Inc. (Grand Gulf Nuclear Station)	Reactor	3/12/18	Confirmatory Order result of an ADR mediation
EA-17-201	Prein & Newhof	Materials	3/16/18	SLIII NOV
EA-17-202	Jubilant Draximage Radiopharmacies Inc.(d/b/a Triad Isotopes)	Materials	3/16/18	SLIII NOV Problem
EA-17-101	Qal-Tek Associates, LLC	Materials	3/29/18	Order Imposing a Civil Penalty—\$22,400
EA-18-008	FirstEnergy Nuclear Operating Co. (Davis-Besse Nuclear Power Station)	Reactor	4/13/18	White NOV
EA-17-182	Providence Alaska Medical Center	Materials	4/24/18	SLII NOV/Problem/CP—\$11,600
EA-17-206	Idaho State University	Materials	5/3/18	SLIII NOV, SLIII NOV/CP SLIII—\$8,500
EA-18-023	Louisiana Energy Services, LLC (LES)	Fuel Facility	6/14/18	SLIII NOV
EA-18-047	Missouri Baptist Medical Center	Materials	7/12/18	SLIII NOV
EA-18-046	Department of Defense, Defense Threat Reduction Agency (DTRA)	Materials	8/2/18	SLIII NOV
EA-18-050	NACHER Corporation	Materials	8/2/18	(2) SLIII NOVs
EA-18-043	Automated Packaging Inc.	Materials	8/13/18	SLII NOV,SLIII NOV/ CP—\$8,500
IA-18-030	Mr. Vincent Doolittle	Individual	8/16/18	SLIV NOV
EA-18-069	Jefferson Asphalt Company	Materials	9/5/18	SLIII NOV
EA-18-099	Environmental Protection Industries, Inc.	Materials	9/10/18	SLIII NOV
EA-18-033	Harman International Industrial Inc.	Materials	9/27/18	Confirmatory Order with a Civil Penalty—\$7,250
IA-18-035	Mr. Craig Schneider	Individual	10/18/18	SLIV NOV



APPENDIX V 

Significant Enforcement Actions Issued, 2018 (continued)

Action #	Name	Type	Issue Date	Enforcement Action
EA-18-060	Professional Testing & Inspection	Materials	10/25/18	SLIII NOV Problem
EA-18-116	Source Production & Equipment Co.	Materials	11/16/18	SLIII NOV
EA-18-095	Curators of University of Missouri	Materials	11/20/18	SLIII NOV
IA-18-047	Mr. James P. Chaisson	Individual	11/30/18	SLIV NOV
EA-18-112	Christiana Care Health Services, Inc.	Materials	12/3/18	SLIII NOV/CP—\$3,500
EA-18-064	Vistra Operations Co., LLC (Comanche Peak)	Reactor	12/10/18	SLIII NOV
IA-18-031	Mr. Ben Welch	Individual	12/10/18	SLIII NOV
EA-18-107	Exelon Generation Co., LLC (Peach Bottom Power Station)	Reactor	12/11/18	White NOV
EA-18-037	Wolf Creek Nuclear Operating Corporation (Wolf Creek)	Reactor	12/17/18	SLII NOV/CP—\$232,000
EA-18-106	Terracon Consultants, Inc.	Materials	12/20/18	SLIII NOV/Problem/CP—\$29,000
EA-18-111	U.S. Geological Survey Department (Denver Federal Center)	Reactor	12/31/18	SLIII NOV/CP—\$7,250
IA-18-038	Mr. Brycen Roy	Individual	12/31/18	NOV SLIII



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)
11. Nuclear Energy Innovation Capabilities Act of 2017 (Pub.L. 115-248)
12. Nuclear Energy Innovation and Modernization Act (Pub.L. 115-439)

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
3. National Historic Preservation 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. Convention on Early Notification of a Nuclear Accident, entry into force October 27, 1986; the United States is a party
3. Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, entry into force February 26, 1987; the United States is a party
4. Convention on Nuclear Safety, entry into force October 24, 1996; the United States is a party
5. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, entry into force June 18, 2001; the United States is a party
6. Convention on the Physical Protection of Nuclear Material (CPPNM), entry into force February 8, 1987; the United States is a party
7. Amendment to the CPPNM, entry into force May 8, 2016; the United States is a party
8. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, entry into force August 30, 1975; the United States 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)
9. Convention on Supplementary Compensation for Nuclear Damage; entry into force April 15, 2015
10. Agreement between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States of America (INFCIRC/288); entry into force December 9, 1980
11. The Agreement Between the United States of America 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; United States is a party
12. Protocol Additional to the Agreement between the United States of America and the International Atomic Energy 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 2019; the next printed update will be in August 2020.



APPENDIX Y International Activities:

LIST OF MULTILATERAL ORGANIZATIONS, COMMITTEES, AND WORKING GROUPS IN WHICH THE NRC PARTICIPATES

International Commission on Radiological Protection (ICRP)

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)

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 Decommissioning of Nuclear Installations and Legacy
Management (CDLM)

The Committee on Radiation Protection and Public Health (CRPPH)

The Nuclear Law Committee (NLC)

Multinational Design Evaluation Programme (MDEP)

Source: <https://www.oecd-nea.org/general/about/>

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

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



APPENDIX Y 
International Activities: (continued)

BILATERAL INFORMATION EXCHANGE AND COOPERATION AGREEMENTS WITH THE NRC

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

Notes: The country's short-form name is used. The NRC's cooperation arrangements are initiated and renewed for 5-year terms. Data are current as of July 2019; the next printed update will be in August 2020.

EURATOM is the European Atomic Energy Community.

Tecro (Taiwan) is the Taipei Economic and Cultural Representative Office in the United States.



APPENDIX Z 

International Activities:

LIST OF IMPORT AND EXPORT LICENSES ISSUED FOR 2018

License Number	Applicant	Docket Number
PXB114.05	Baker Hughes Oilfield Operations, Inc.	11006026
PXB11b.13	QSA Global, Inc.	11006092
PXB139.04	Schlumberger Technology	11006082
PXB147.01	ViewRay Inc.	11006338
PXB14b.07	Source Production & Equipment Co., Inc.	11006034
PXB178.02	JL Shepherd & Associates	11006117
PXB17b.11	Industrial Nuclear Co., Inc.	11006200
PXB1a.05	Weatherford International Inc. & Subsidiaries & Affiliate Companies	11006277
PXB208.02	Halliburton Energy Services, Inc.	11006226
PXB214.00	University of Wisconsin-Madison	11006269
PXB215a.00	ISOFLEX Radioactive, LLC	11006262
PXB215b.00	ISOFLEX Radioactive, LLC	11006262
PXB215b.01	ISOFLEX Radioactive, LLC	11006335
PXB216.00	Halliburton Energy Services, Inc.	11006285
PXB216.01	Halliburton Energy Services, Inc.	11006285
PXB217.00	Halliburton Energy Services, Inc.	11006287
PXB218.00	Ronan Engineering Company	11006288
PXB219.00	Halliburton Energy Services, Inc.	11006303
PXB221.00	NSSI/Sources & Services, Inc.	11006308
PXB222.00	International Isotopes Inc.	11006309
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
PXB6.25	Alpha-Omega Services, Inc.	11006027
PXB6.26	Alpha-Omega Services, Inc.	11006027
PXB6.27	Alpha-Omega Services, Inc.	11006027

Licenses under Appendix P to 10 CFR Part 110, "Export 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 Imports"). 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.



APPENDIX Z 

International Activities: (continued)

LIST OF IMPORT AND EXPORT LICENSES: NON-APPENDIX P

License Number	Applicant	Docket Number
IW009/03	AREVA Inc.	11005149
XB1334	Siemens Corporation for Siemens Medical Solutions USA, Inc.	11006251
XB1335	Philips North America, LLC	11006260
XB1338	U.S. Department of Energy, Oak Ridge National Laboratory	11006322
XCOM1187/02	Sulzer Pumps (US) Inc.	11005671
XCOM1202/01	AREVA, Inc.	11005788
XCOM1202/02	Framatome Inc.	11005788
XCOM1239/02	Louisiana Energy Services, LLC	11005981
XCOM1292/01	ATI Specialty Alloys & Components	11006186
XCOM1299/01	ATI Specialty Alloys & Components	11006218
XCOM1305/01	Materion Brush, Inc.	11006242
XCOM1310	Curtiss-Wright Corporation	11006263
XCOM1313	Materion Advanced Chemicals	11006274
XCOM1314	Mirion Technologies (IST) Corporation, Inc.	11006276
XCOM1318	Curtiss-Wright Corporation	11006305
XCOM1319	General Atomics	11006311
XCOM1325	Mirion Technologies (IST) Corporation	11006342
XCOM1326	Mirion Technologies (IST) Corporation	11006344
XMAT409/01	Cambridge Isotope Laboratories, Inc.	11005753
XMAT413/02	Linde Electronics and Specialty Gases, a Division of Linde Gas North America LLC	11005877
XMAT423/02	Linde Electronics and Specialty Gases, a Division of Linde Gas North America LLC	11006029
XMAT427/02	Airgas USA, LLC	11006088
XMAT429/02	Matheson Tri Gas, Inc.	11006116
XMAT433/01	Cambridge Isotope Laboratories, Inc.	11006181
XMAT440	Cambridge Isotope Laboratories, Inc.	11006292
XMAT441	Cambridge Isotope Laboratories, Inc.	11006293
XMAT442	Vertex Pharmaceuticals Incorporated	11006299
XMAT444	Vertex Pharmaceuticals Incorporated	11006300
XMAT445	Sigma Aldrich Co. LLC	11006306
XMAT446	Sigma Aldrich Co. LLC	11006307
XR135/08	GE-Hitachi Nuclear Energy Americas, LLC	11001075
XR177	Curtiss-Wright Electro-Mechanical Corporation	11006121
XSNM3066/06	Global Nuclear Fuel—Americas, LLC	11005081
XSNM3135/05	Global Nuclear Fuel—Americas, LLC	11005186
XSNM3471/02	AREVA Inc.	11005652
XSNM3551/02	AREVA Inc.	11005623
XSNM3551/03	Framatome Inc.	11005623
XSNM3697/02	Framatome Inc.	11005959
XSNM3722/03	TN Americas LLC	11006019
XSNM3747/02-R	AREVA Inc.	11006110
XSNM3747/03	Framatome Inc.	11006110
XSNM3763/02	Edlow International Company as Agent for ANSTO	11006195
XSNM3763/03	Edlow International Company as Agent for ANSTO	11006195
XSNM3776	U.S. Department of Energy/NNSA	11006241



APPENDIX Z

International Activities: (continued)

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

License Number	Applicant	Docket Number
XSNM3780	AREVA Inc.	11006265
XSNM3780/01	Framatome Inc.	11006265
XSNM3781	AREVA, Inc.	11006276
XSNM3782	AREVA Inc.	11006288
XSNM3782/01	Framatome Inc.	11006288
XSNM3783	U.S. Department of Energy/NNSA	11006273
XSNM3784	Edlow International Company as an Agent for SCK CEN	11006275
XSNM3785	Global Nuclear Fuel—Americas, LLC	11006278
XSNM3786	Global Nuclear Fuel—Americas, LLC	11006279
XSNM3787	Global Nuclear Fuel—Americas, LLC	11006280
XSNM3788	U.S. Department of Energy	11006283
XSNM3790	U.S. Department of Energy	11006289
XSNM3792	U.S. Department of Energy Oak Ridge National Laboratory	11006297
XSNM3794	U.S. Department of Energy/NNSA	11006302
XSNM3795	U.S. Department of Energy/NNSA	11006315
XSNM3797	U.S. Department of Energy/NNSA	11006320
XSNM3798	Edlow Intenational Co.	11006327
XSNM3806	Thermo Fisher Scientific	11006341
XSNM3807	Transport Logistics International, Inc.	11006337
XSOU8707/06	MP Mine Operations LLC	11004455
XSOU8787/05	Urenco, Inc.	11005277
XSOU8789/07	ConverDyn	11005360
XSOU8798/07	RSB Logistic Inc.	11005445
XSOU8798/08	RSB Logistic Inc.	11005445
XSOU8798/09	RSB Logistic Inc.	11005445
XSOU8827/01	MP Mine Operations LLC	11005966
XSOU8842	Southern Ionics Minerals, LLC	11006256
XSOU8843	Manufacturing Sciences Corporation	11006271
XSOU8844	Southern Ionics Minerals, LLC	11006272
XSOU8845	ConverDyn	11006294
XSOU8846	ConverDyn	11006295
XSOU8846/01	ConverDyn	11006295
XSOU8847	ConverDyn	11006296
XSOU8848	Louisiana Energy Services, LLC	11006312
XSOU8851	Honeywell International, Inc.	11006336
XW008/05	Diversified Scientific Services, Inc. (DSSI)	11005323
XW015/01	AREVA Inc.	11005789
XW023	UniTech Services Group, Inc.	11006249

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 10 CFR Part 110, 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; refer to 10 CFR Part 110, Appendix L, for an illustrative list of byproduct materials under NRC jurisdiction.

(XR) denotes export of reactor equipment, refer to 10 CFR Part 110, Appendix A, Items (1)–(4).

(IW) denotes import of radioactive waste.

(XW) denotes export of radioactive waste.

