

APPENDICES







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

Abbreviations

Appl C4			
ABWR	advanced boiling-water reactor		Vallecitos Experimental
AC	Allis Chalmers		Superheat Reactor
ac	alternating current	Exp. Date	expiration date of operating
ACRS	Advisory Committee on Reactor		license
Aono	Safequards	FBR	fast breeder reactor
ADR	Alternative Dispute Resolution	FEMA	Federal Emergency Management
AEC	Atomic Energy Commission (U.S.)		Agency
AEP	American Electric Power Company	FERC	Federal Energy Regulatory
AGN	solid homogeneous core		Commission
Adit	(Aerojet-General Nucleonics)	FLUR	Fluor Pioneer
AP1000	Advanced Passive 1000 Megawatt	FOIA	Freedom of Information Act
AF 1000	(Westinghouse pressurized-water	FTE	full-time equivalent
	reactor)	FW	Foster Wheeler
ASLB	Atomic Safety and Licensing Board	FY	fiscal year
B&R	Burns & Roe	G&H	Gibbs & Hill
B&W	Babcock & Wilcox	GA	General Atomics
BALD	Baldwin Associates	GCR	gas-cooled reactor
BECH	Bechtel	GE	General Electric
BRRT	Brown & Root	GEH	General Electric-Hitachi Nuclear
BWR	boiling-water reactor		Energy
CE	Combustion Engineering	GEIS	generic environmental impact
CFR	Code of Federal Regulations		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	GWh	gigawatt-hour(s)
DRYSUB	dry, subatmospheric	HLW	high-level waste
ICECND	wet, ice condenser	HTG	high-temperature gas
MARK I	wet, Mark I		(reactor)
MARK II	wet, Mark II	HWR	heavy-water reactor
	wet, Mark II	HWR IAEA	International Atomic Energy
MARK II	wet, Mark II	IAEA	International Atomic Energy Agency
MARK II MARK III	wet, Mark II wet, Mark III	IAEA	International Atomic Energy Agency International Nuclear Event Scale
MARK II MARK III	wet, Mark II wet, Mark III date of construction permit issuance	IAEA	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel
MARK II MARK III CP Issued	wet, Mark II wet, Mark III date of construction permit	IAEA INES ISFSI	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation
MARK III MARK III CP Issued CT	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography	IAEA INES ISFSI ISR	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery
MARK III MARK III CP Issued CT CVP	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties	IAEA INES ISFSI ISR IUP	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program
MARK III MARK III CP Issued CT CVP	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison	IAEA INES ISFSI ISR IUP KAIS	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers
MARK II MARK III CP Issued CT CVP CWE	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company	IAEA INES ISFSI ISR IUP KAIS kW	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s)
MARK II MARK III CP Issued CT CVP CWE DANI	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International	IAEA INES ISFSI ISR IUP KAIS kW LLP	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop
MARK II MARK III CP Issued CT CVP CWE DANI DBDB	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor)
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.)	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE	wef, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.)	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT	wef, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.)	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s)
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWe	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) electric
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA	wef, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE)	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWe MWh	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) electric megawatt-hour(s)
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA	wef, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE) emergency preparedness	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWE MWH MWH	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) electric megawatt-hour(s) megawatt(s) thermal
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE) emergency preparedness Environmental Protection Agency	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWe MWh	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) megawatt(s) thermal Niagara Mohawk Power
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA EP EPA	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE) emergency preparedness Environmental Protection Agency (U.S.)	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWE MWH MWH NIAG	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) electric megawatt-hour(s) megawatt(s) thermal Niagara Mohawk Power Corporation
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA EP EPA	wef, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE) emergency preparedness Environmental Protection Agency (U.S.) Evolutionary Power Reactor	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWE MWH MWH NIAG	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) megawatt(s) thermal Niagara Mohawk Power Corporation Nuclear Energy Agency
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA EP EPA	wef, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Finansportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE) emergency preparedness Environmental Protection Agency (U.S.) Evolutionary Power Reactor emergency planning zone	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWE MWH MWH NIAG	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) electric megawatt-hour(s) megawatt(s) thermal Niagara Mohawk Power Corporation Nuclear Energy Agency Nuclear Materials Management
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA EP EPA	wef, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE) emergency preparedness Environmental Protection Agency (U.S.) Evolutionary Power Reactor emergency planning zone Economic Simplified Boiling-Water	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWE MWH MWH NIAG NEA NMMSS	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) electric megawatt(s) thermal Niagara Mohawk Power Corporation Nuclear Energy Agency Nuclear Materials Management and Safeguards System
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA EP EPA EPR EPZ ESBWR	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE) emergency preparedness Environmental Protection Agency (U.S.) Evolutionary Power Reactor emergency planning zone Economic Simplified Boiling-Water Reactor	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWe MWh MWh NIAG NEA NMMSS	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) megawatt(s) electric megawatt(s) thermal Niagara Mohawk Power Corporation Nuclear Energy Agency Nuclear Materials Management and Safeguards System notice of violation
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA EP EPA EPR EPZ ESBWR	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE) emergency preparedness Environmental Protection Agency (U.S.) Evolutionary Power Reactor emergency planning zone Economic Simplified Boiling-Water Reactor early site permit	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWE MWH MWH NIAG NEA NMMSS	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) electric megawatt-hour(s) megawatt(s) thermal Niagara Mohawk Power Corporation Nuclear Energy Agency Nuclear Materials Management and Safeguards System notice of violation Nuclear Regulatory
MARK II MARK III CP Issued CT CVP CWE DANI DBDB DBT DC DHS DOE DOT DUKE EBSO EIA EP EPA EPR EPZ ESBWR	wet, Mark II wet, Mark III date of construction permit issuance computerized tomography civil penalties Commonwealth Edison Company Daniel International Duke & Bechtel design-basis threat design certification Department of Homeland Security (U.S.) Department of Energy (U.S.) Department of Transportation (U.S.) Duke Power Company Ebasco Energy Information Administration (DOE) emergency preparedness Environmental Protection Agency (U.S.) Evolutionary Power Reactor emergency planning zone Economic Simplified Boiling-Water Reactor	IAEA INES ISFSI ISR IUP KAIS kW LLP LLW LMFB LR Issued LWGR MOX MW MWe MWh MWh NIAG NEA NMMSS	International Atomic Energy Agency International Nuclear Event Scale independent spent fuel storage installation in situ recovery Intergrated University Program Kaiser Engineers kilowatt(s) B&W lowered loop low-level radioactive waste liquid metal fast breeder (reactor) license renewal issued light-water-cooled graphite-moderated reactor mixed oxide megawatt(s) megawatt(s) megawatt(s) electric megawatt(s) thermal Niagara Mohawk Power Corporation Nuclear Energy Agency Nuclear Materials Management and Safeguards System notice of violation

Atomic Development Associates)

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

State and Territory Abbreviations

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

QUICK-REFERENCE METRIC CONVERSION TABLES

SPACE AND TIME

Quantity	From Inch-Pound Units	To Metric Units	Multiply by
Length	mi (statute)	km	1.609347
	yd	m	*0.9144
	ft (int)	m	*0.3048
	in	cm	*2.54
Area	mi²	km²	2.589998
	acre	m^2	4,046.873
	yd²	m ²	0.8361274
	ft²	m^2	*0.09290304
	in²	cm ²	*6.4516
Volume	acre foot	m³	1,233.489
	yd³	m^3	0.7645549
	ft³	m^3	0.02831685
	ft³	L	28.31685
	gal	L	3.785412
	fl oz	mL	29.57353
	in ³	cm ³	16.38706
Velocity	mi/h	km/h	1.609347
	ft/s	m/s	*0.3048
Acceleration	ft/s²	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	roentgen (R)	C (coulomb)/kg	0.000258
(x-rays and gamma rays)			

HEAT

Quantity	From Inch-Pound Units	To Metric Units	Multiply by
Thermodynamic	°F	K	*K = (°F + 459.67)/1.8
temperature			
Celsius temperature	°F	°C	*°C = (°F – 32)/1.8
Linear expansion	1/°F	1/K or 1/°C	*1.8
coefficient			
Thermal conductivity	(Btu • in)/(ft² • h • °F)	W/(m • °C)	0.1442279
Coefficient of heat	Btu/(ft² • h • °F)	W/(m² • °C)	5.678263
transfer			
Heat capacity	Btu/°F	kJ/°C	1.899108
Specific heat capacity	Btu/(lb • °F)	kJ/(kg • °C)	*4.1868

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QUICK-REFERENCE METRIC CONVERSION TABLES

HEAT (continued)

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

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)/yd3	t/m³	1.186553
	lb/ft³	g/m³	16.01846
Concentration (mass)	lb/gal	g/L	119.8264
Momentum	lb • ft/s	kg • m/s	0.138255
Angular momentum	lb • ft²/s	kg • m²/s	0.04214011
Moment of inertia	lb • ft²	kg • m²	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/in2 (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
	mmHg (0 °C)	kPa	0.133322
Stress	kip/in² (formerly ksi)	MPa	6.894757
	lbf/in2 (formerly psi)	MPa	0.006894757
	lbf/in2 (formerly psi)	kPa	6.894757
	lbf/ft2	kPa	0.04788026
Energy, work	kWh	MJ	*3.6
	calth	J (joule)	*4.184
	Btu	kJ	1.055056
	ft • lbf	J	1.355818
	therm (U.S.)	MJ	105.4804
Power	Btu/s	kW	1.055056
	hp (electric)	kW	*0.746
	Btu/h	W	0.2930711

^{*} Exact conversion factors

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

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.

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

Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011- 2016* 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/and	IV 1.html	PWR-DRYAMB B&W LLP BECH BECH	2,568 DPR-51	12/06/1968 05/21/1974 12/19/1974 06/20/2001 05/20/2034	87 102 56 98 82 72
Arkansas Nuclear One, Unit 2 Entergy Operations, Inc. London, AR (6 miles NW of Russellville, AR) 05000368 https://www.nrc.gov/info-finder/reactors/and	IV 2.html	PWR-DRYAMB CE BECH BECH	3,026 NPF-6	12/06/1972 09/01/1978 03/26/1980 06/30/2005 07/17/2038	90 93 91 85 94 89
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	l .html	PWR-DRYAMB WEST 3LP S&W S&W	2,900 DPR-66	06/26/1970 07/02/1976 10/01/1976 11/05/2009 01/29/2036	101 92 86 86 90 91
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	l !.html	PWR-DRYAMB WEST 3LP S&W S&W	2,900 NPF-73	05/03/1974 08/14/1987 11/17/1987 11/05/2009 05/27/2047	102 91 97 98 90 97
Braidwood Station, Unit 1 Exelon Generation Co., LLC Braceville, IL (20 miles SSW of Joliet, IL) 05000456 https://www.nrc.gov/info-finder/reactors/braids	III i1.html	PWR-DRYAMB WEST 4LP S&L CWE	3,645 NPF-72	12/31/1975 07/02/1987 07/29/1988 N/A 10/17/2026	101 91 95 103 93 90
Braidwood Station, Unit 2 Exelon Generation Co., LLC Braceville, IL (20 miles SSW of Joliet, IL) 05000457 https://www.nrc.gov/info-finder/reactors/braids	III i2.html	PWR-DRYAMB WEST 4LP S&L CWE	3,645 NPF-77	12/31/1975 05/20/1988 10/17/1988 N/A 12/18/2027	93 93 98 96 91 95
Browns Ferry Nuclear Plant, Unit 1 Tennessee Valley Authority Athens (Limestone County), AL (32 miles W of Huntsville, AL) 05000259 https://www.nrc.gov/info-finder/reactors/bf1	II .html	BWR-MARK 1 GE 4 TVA TVA	3,458 DPR-33	05/10/1967 12/20/1973 08/01/1974 05/04/2006 12/20/2033	91 88 94 90 94 83



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* Capacity Factor (Percent)
Browns Ferry Nuclear Plant, Unit 2	II	BWR-MARK 1	3,458	05/10/1967	80
Tennessee Valley Authority		GE 4	DPR-52	06/28/1974	99
Athens (Limestone County), AL		TVA		03/01/1975	79
(32 miles W of Huntsville, AL)		TVA		05/04/2006	98
05000260				06/28/2034	85
https://www.nrc.gov/info-finder/reactors/bf2					94
Browns Ferry Nuclear Plant, Unit 3	II	BWR-MARK 1	3,458	07/31/1968	87
Tennessee Valley Authority		GE 4	DPR-68	07/02/1976	83
Athens (Limestone County), AL		TVA		03/01/1977	89
(32 miles W of Huntsville, AL)		TVA		05/04/2006	88
05000296) ladean			07/02/2036	92 80
https://www.nrc.gov/info-finder/reactors/bf3					
Brunswick Steam Electric Plant, Unit 1	II	BWR-MARK 1	2,923	02/07/1970	100
Duke Energy Progress, LLC		GE 4	DPR-71	09/08/1976	77
Southport, NC		UE&C		03/18/1977	92
(30 miles S of Wilmington, NC) 05000325		BRRT		06/26/2006 09/08/2036	89 93
https://www.nrc.gov/info-finder/reactors/bru	ı1 html			09/00/2030	83
		DWD MADIC 4	0.000	00/07/4070	
Brunswick Steam Electric Plant, Unit 2	II	BWR-MARK 1 GE 4	2,923 DPR-62	02/07/1970	79 98
Duke Energy Progress, LLC Southport, NC		UE&C	DPR-02	12/27/1974 11/03/1975	96 73
(30 miles S of Wilmington, NC)		BRRT		06/26/2006	98
05000324		Diliti		12/27/2034	81
https://www.nrc.gov/info-finder/reactors/bru	ı2.html			12/21/2004	92
Byron Station, Unit 1	III	PWR-DRYAMB	3.645	12/31/1975	88
Exelon Generation Co., LLC		WEST 4LP	NPF-37	02/14/1985	88
Byron, IL		S&L		09/16/1985	96
(17 miles SW of Rockford, IL)		CWE		N/A	97
05000454				10/31/2024	88
https://www.nrc.gov/info-finder/reactors/by/	ro1.html				97
Byron Station, Unit 2	Ш	PWR-DRYAMB	3,645	12/31/1975	93
Exelon Generation Co., LLC		WEST 4LP	NPF-66	01/30/1987	94
Byron, IL		S&L		08/02/1987	86
(17 miles SW of Rockford, IL)		CWE		N/A	94
05000455				11/06/2026	94
https://www.nrc.gov/info-finder/reactors/by	ro2.html				86
Callaway Plant, Unit 1	IV	PWR-DRYAMB		04/16/1976	90
Union Electric Co.		WEST 4LP	NPF-30	10/18/1984	103
Fulton, MO		BECH		12/19/1984	77
(25 miles ENE of Jefferson City, MO)		DANI		03/06/2015	89
05000483	ll btm:			10/18/2044	96
https://www.nrc.gov/info-finder/reactors/cal	ı.rıtmı				87



	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* 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/calv	l 1.html	PWR-DRYAMB CE BECH BECH	2,737 DPR-53	07/07/1969 07/31/1974 05/08/1975 03/23/2000 07/31/2034	101 81 97 91 97 89
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/calv	l 2.html	PWR-DRYAMB CE BECH BECH	2,737 DPR-69	07/07/1969 08/13/1976 04/01/1977 03/23/2000 08/13/2036	92 101 81 100 86 95
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/cata	II	PWR-ICECND WEST 4LP DUKE DUKE	3,411 NPF-35	08/07/1975 01/17/1985 06/29/1985 12/05/2003 12/05/2043	89 89 96 86 88 97
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	II 2.html	PWR-ICECND WEST 4LP DUKE DUKE	3,411 NPF-52	08/07/1975 05/15/1986 08/19/1986 12/05/2003 12/05/2043	101 92 86 100 86 88
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.	III html	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	93 100 82 97 87 89
Columbia Generating Station Energy Northwest Benton County, WA (12 miles NW of Richland, WA) 05000397 https://www.nrc.gov/info-finder/reactors/was	IV h2.html	BWR-MARK 2 GE 5 B&R BECH	3,486 NPF-21	03/19/1973 04/13/1984 12/13/1984 05/22/2012 12/20/2043	50 97 80 98 78 92
Comanche Peak Nuclear Power Plant, Unit 1 Vistra Operating Co., LLC Glen Rose, TX (40 miles SW of Fort Worth, TX) 05000445 https://www.nrc.gov/info-finder/reactors/cp1	IV .html	PWR-DRYAMB WEST 4LP G&H BRRT	3,612 NPF-87	12/19/1974 04/17/1990 08/13/1990 N/A 02/08/2030	91 98 94 85 100 92



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* Capacity Factor (Percent)
Comanche Peak Nuclear Power Plant, Unit 2 Vistra Operating Co., LLC Glen Rose, TX (40 miles SW of Fort Worth, TX) 05000446 https://www.nrc.gov/info-finder/reactors/cpi	IV 2.html	PWR-DRYAMB WEST 4LP BECH BRRT	3,612 NPF-89	12/19/1974 04/06/1993 08/03/1993 N/A 02/02/2033	92 91 99 93 88 100
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	IV s.html	BWR-MARK 1 GE 4 B&R B&R	2,419 NPF-46	06/04/1968 01/18/1974 07/01/1974 11/29/2010 01/18/2034	86 87 97 88 97 84
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/dat	III vi.html	PWR-DRYAMB B&W RLP BECH B&W	2,817 NFP-3	03/24/1971 04/22/1977 07/31/1978 12/08/2015 04/22/2037	81 91 95 74 97 79
Diablo Canyon Nuclear Power Plant, Unit 1 Pacific Gas & Electric Co. Avila Beach, CA (12 miles SW of San Luis Obispo, CA) 05000275 https://www.nrc.gov/info-finder/reactors/dia	IV b1.html	PWR-DRYAMB WEST 4LP PG&E PG&E	3,411 DPR-80	4/23/1968 11/02/1984 05/07/1985 N/A 11/02/2024	100 84 95 87 87 98
Diablo Canyon Nuclear Power Plant, Unit 2 Pacific Gas & Electric Co. Avila Beach, CA (12 miles SW of San Luis Obispo, CA) 05000323 https://www.nrc.gov/info-finder/reactors/dia	IV b2.html	PWR-DRYAMB WEST 4LP PG&E PG&E	3,411 DPR-82	12/09/1970 08/26/1985 03/13/1986 N/A 08/26/2025	89 97 82 86 95 88
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/cook	III ok1.html	PWR-ICECND WEST 4LP AEP AEP	3,304 DPR-58	03/25/1969 10/25/1974 08/28/1975 08/30/2005 10/25/2034	87 104 78 94 78 82
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/cook	III ok2.html	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	104 91 85 101 79 71



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011- 2016* Capacity Factor (Percent)
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/dre	III es2.html	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	95 104 85 98 83 91
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/dre	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	99 91 89 95 89 84
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/dua	III an.html	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	99 83 89 79 88 79
Edwin I. Hatch Nuclear Plant, Unit 1 Southern Nuclear Operating Co. Baxley, GA (20 miles S of Vidalia, GA) 05000321 https://www.nrc.gov/info-finder/reactors/hat	II 1.html	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	98 89 94 89 101 93
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/hat	II 2.html	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	78 98 89 99 91
Fermi, Unit 2 DTE Electric Company Newport, MI (25 miles NE of Toledo, OH) 05000341 https://www.nrc.gov/info-finder/reactors/ferm	III m2.html	BWR-MARK 1 GE 4 S&L DANI	3,486 NPF-43	09/26/1972 07/15/1985 01/23/1988 N/A 03/20/2025	94 54 62 82 69 86

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



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* 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/gg	IV 1.html	BWR-MARK 3 GE 6 BECH BECH	4,408 NPF-29	09/04/1974 11/01/1984 07/01/1985 N/A 11/01/2024	94 70 86 82 93 47
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/rol	II 52.html	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	100 85 85 86 85 95
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/ho	l pe.html	BWR-MARK 1 GE 4 BECH BECH	3,840 NPF-57	11/04/1974 07/25/1986 12/20/1986 07/20/2011 04/11/2046	103 93 80 102 83 85
Indian Point Nuclear Generating, Unit 2 Entergy Nuclear Indian Point 2, LLC Buchanan, NY (24 miles N of New York, NY) 05000247 https://www.nrc.gov/info-finder/reactors/ip2	l 2.html	PWR-DRYAMB WEST 4LP UE&C WDCO	3,216 DPR-26	10/14/1966 09/28/1973 08/01/1974 N/A 09/28/2013	98 90 77 93 77 53
Indian Point Nuclear Generating, Unit 3 Entergy Nuclear Indian Point 3, LLC Buchanan, NY (24 miles N of New York, NY) 05000286 https://www.nrc.gov/info-finder/reactors/ip3	l 3.html	PWR-DRYAMB WEST 4LP UE&C WDCO	3,216 DPR-64	08/13/1969 12/12/1975 08/30/1976 N/A 12/12/2015	90 100 94 98 86 102
James A. FitzPatrick Nuclear Power Plant Entergy Nuclear FitzPatrick, LLC Scriba, NY (6 miles NE of Oswego, NY) 05000333 https://www.nrc.gov/info-finder/reactors/fitz	l z.html	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	97 84 89 79 96 76
Joseph M. Farley Nuclear Plant, Unit 1 Southern Nuclear Operating Co. Columbia, AL (18 miles E of Dothan, AL) 05000348 https://www.nrc.gov/info-finder/reactors/far	II 1.html	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	101 91 90 102 86 86



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011- 2016* Capacity Factor (Percent)
Joseph M. Farley Nuclear Plant, Unit 2	Ш	PWR-DRYAMB	2,775	08/16/1972	89
Southern Nuclear Operating Co.		WEST 3LP	NPF-8	03/31/1981	104
Columbia, AL		SSI		07/30/1981	91
(18 miles E of Dothan, AL)		BECH		05/12/2005	89
05000364				03/31/2041	98
https://www.nrc.gov/info-finder/reactors/far2	2.html				90
LaSalle County Station, Unit 1	III	BWR-MARK 2	3,546	09/10/1973	101
Exelon Generation Co., LLC		GE 5	NPF-11	04/17/1982	97
Marseilles, IL		S&L		01/01/1984	95
(11 miles SE of Ottawa, IL)		CWE		10/19/2016	93
05000373				04/17/2042	99
https://www.nrc.gov/info-finder/reactors/lasa	a1.html				89
LaSalle County Station, Unit 2	III	BWR-MARK 2	3,546	09/10/1973	96
Exelon Generation Co., LLC		GE 5	NPF-18	12/16/1983	103
Marseilles, IL		S&L		10/19/1984	88
(11 miles SE of Ottawa, IL)		CWE		10/19/2016	95
05000374				12/16/2043	83
https://www.nrc.gov/info-finder/reactors/lasa	a2.html				95
Limerick Generating Station, Unit 1	I	BWR-MARK 2	3,515	06/19/1974	96
Exelon Generation Co., LLC		GE 4	NPF-39	08/08/1985	85
Limerick, PA		BECH		02/01/1986	101
(21 miles NW of Philadelphia, PA)		BECH		N/A	91
05000352				10/26/2024	100
https://www.nrc.gov/info-finder/reactors/lim	1.html				93
Limerick Generating Station, Unit 2	ı	BWR-MARK 2	3,515	06/19/1974	90
Exelon Generation Co., LLC		GE 4	NPF-85	08/25/1989	95
Limerick, PA		BECH		01/08/1990	94
(21 miles NW of Philadelphia, PA)		BECH		N/A	99
05000353				06/22/2029	89
https://www.nrc.gov/info-finder/reactors/lim.	2.html				101
McGuire Nuclear Station, Unit 1	II	PWR-ICECND	3,411	02/23/1973	94
Duke Energy Carolinas, LLC		WEST 4LP	NPF-9	07/08/1981	105
Huntersville, NC		DUKE		12/01/1981	82
(17 miles N of Charlotte, NC)		DUKE		12/05/2003	82
05000369				06/12/2041	95
https://www.nrc.gov/info-finder/reactors/mc	g1.html				89
McGuire Nuclear Station, Unit 2	II	PWR-ICECND	3,411	02/23/1973	91
Duke Energy Carolinas, LLC		WEST 4LP	NPF-17	05/27/1983	82
Huntersville, NC		DUKE		03/01/1984	95
(17 miles N of Charlotte, NC)		DUKE		12/05/2003	94
05000370				03/03/2043	87
https://www.nrc.gov/info-finder/reactors/mc	g2.html				97



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011- 2016* Capacity Factor (Percent)
Millstone Power Station, Unit 2 Dominion Nuclear Connecticut, Inc. Waterford, CT (3.2 miles SW of New London, CT) 05000336 https://www.nrc.gov/info-finder/reactors/miles	l ll2.html	PWR-DRYAMB CE BECH BECH	2,700 DPR-65	12/11/1970 09/26/1975 12/26/1975 11/28/2005 07/31/2035	87 83 95 85 85 93
Millstone Power Station, Unit 3 Dominion Nuclear Connecticut, Inc. Waterford, CT (3.2 miles SW of New London, CT) 05000423 https://www.nrc.gov/info-finder/reactors/miles	l II3.html	PWR-DRYSUB WEST 4LP S&W S&W	3,650 NPF-49	08/09/1974 01/31/1986 04/23/1986 11/28/2005 11/25/2045	87 100 87 87 97
Monticello Nuclear Generating Plant, Unit 1 Northern States Power Company-Minnesot Monticello, MN (30 miles NW of Minneapolis, MN) 05000263 https://www.nrc.gov/info-finder/reactors/mo		BWR-MARK 1 GE 3 BECH BECH	2,004 DPR-22	06/19/1967 01/09/1981 ^E 06/30/1971 11/08/2006 09/08/2030	69 101 50 78 78 93
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/nm	l np1.html	BWR-MARK 1 GE 2 NIAG S&W	1,850 DPR-63	04/12/1965 12/26/1974 ^c 12/01/1969 10/31/2006 08/22/2029	84 87 88 98 88 96
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/nm	l np2.html	BWR-MARK 2 GE 5 S&W S&W	3,988 NPF-69	06/24/1974 07/02/1987 03/11/1988 10/31/2006 10/31/2046	95 83 99 87 100 92
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/na	II 1.html	PWR-DRYSUB WEST 3LP S&W S&W	2,940 NPF-4	02/19/1971 04/01/1978 06/06/1978 03/20/2003 04/01/2038	78 89 89 100 91 89
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/na.	II 2.html	PWR-DRYSUB WEST 3LP S&W S&W	2,940 NPF-7	02/19/1971 08/21/1980 12/14/1980 03/20/2003 08/21/2040	76 99 85 92 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.



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* 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/occ	II o1.html	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	79 90 91 91 96 83
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/occ	II o2.html	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	93 102 82 101 89 98
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/occ	II o3.html	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	103 86 97 92 97 91
Oyster Creek Nuclear Generating Station Exelon Generation Co., LLC Forked River, NJ (9 miles S of Toms River, NJ) 05000219 https://www.nrc.gov/info-finder/reactors/oc.	l html	BWR-MARK 1 GE 2 B&R B&R	1,930 DPR-16	12/15/1964 07/02/1991 ^D 12/23/1969 04/08/2009 04/09/2029	98 88 106 90 109 95
Palisades Nuclear Plant Entergy Nuclear Operations, Inc. Covert, MI (5 miles S of South Haven, MI) 05000255 https://www.nrc.gov/info-finder/reactors/pal	III i.html	PWR-DRYAMB CE BECH BECH	2,565.4 DPR-20	03/14/1967 02/21/1991 ^E 12/31/1971 01/17/2007 03/24/2031	96 74 85 86 89 99
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/pal	IV o1.html	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	83 100 85 90 94 83
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/pal	IV o2.html	PWR-DRYAMB CE80-2L BECH BECH	3,990 NPF-51	05/25/1976 04/24/1986 09/19/1986 04/21/2011 04/24/2046	91 90 91 90 85 95

D: The AEC issued a provisional OL on 04/09/1969, allowing commercial operation. The NRC issued a full-term OL on 07/02/1991. E: The AEC issued a provisional OL on 03/24/1971, allowing commercial operation. The NRC issued a full-term OL on 02/21/1991.



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* Capacity Factor (Percent)
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/pal	IV o3.html	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	97 88 79 101 85 85
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	l 2.html	BWR-MARK 1 GE 4 BECH BECH	3,514 DPR-44	01/31/1968 10/25/1973 07/05/1974 05/07/2003 08/08/2033	101 88 100 88 99 96
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/pbs	l 3.html	BWR-MARK 1 GE 4 BECH BECH	3,514 DPR-56	01/31/1968 07/02/1974 12/23/1974 05/07/2003 07/02/2034	90 103 85 103 75 95
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/per	III rr1.html	BWR-MARK 3 GE 6 GIL KAIS	3,758 NPF-58	05/03/1977 11/13/1986 11/18/1987 N/A 03/18/2026	79 92 73 96 83 91
Pilgrim Nuclear Power Station Entergy Nuclear Operations, Inc. Plymouth, MA (38 miles SE of Boston, MA) 05000293 https://www.nrc.gov/info-finder/reactors/pilg	l g.html	BWR-MARK 1 GE 3 BECH BECH	2,028 DPR-35	08/26/1968 06/08/1972 12/01/1972 05/29/2012 06/08/2032	85 98 74 97 85 92
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/poi	III in1.html	PWR-DRYAMB WEST 2LP BECH BECH	1,800 DPR-24	07/19/1967 10/05/1970 12/21/1970 12/22/2005 10/05/2030	79 100 84 90 92 86
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/poi	III in2.html	PWR-DRYAMB WEST 2LP BECH BECH	1,800 DPR-27	07/25/1968 03/08/1973 ^F 10/01/1972 12/22/2005 03/08/2033	67 89 93 90 94 86

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



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* Capacity Factor (Percent)
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/pra	III ii1.html	PWR-DRYAMB WEST 2LP FLUR NSP	1,677 DPR-42	06/25/1968 04/05/1974 ^c 12/16/1973 06/27/2011 08/09/2033	91 81 90 84 77 81
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/pra	III ni2.html	PWR-DRYAMB WEST 2LP FLUR NSP	1,677 DPR-35	06/25/1968 10/29/1974 12/21/1974 06/27/2011 10/29/2034	99 74 59 101 65 78
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/qua	III ad1.html	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	92 102 85 103 83 92
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/qua	III ad2.html	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	104 92 91 90 95 85
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/gin	l n.html	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	84 90 93 91 89 94
River Bend Station, Unit 1 Entergy Nuclear Operations, Inc. St. Francisville, LA (24 miles NW of Baton Rouge, LA) 05000458 https://www.nrc.gov/info-finder/reactors/rbs	IV 1.html	BWR-MARK 3 GE 6 S&W S&W	3,091 NPF-47	03/25/1977 11/20/1985 06/16/1986 N/A 08/29/2025	90 91 84 96 76 78
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/st/1	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	85 72 74 101 83 68

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



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* Capacity Factor (Percent)
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/stl.	II 2.html	PWR-DRYAMB CE EBSO EBSO	3,020 NPF-16	05/02/1977 06/10/1983 08/08/1983 10/02/2003 04/06/2043	66 68 91 82 77 85
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/sai	l lm1.html	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	86 97 88 86 95
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/sai	l lm2.html	PWR-DRYAMB WEST 4LP PSEG UE&C	3,459 DPR-75	09/25/1968 05/20/1981 10/13/1981 06/30/2011 04/18/2040	89 88 100 73 85 71
Seabrook Station, Unit 1 NextEra Energy Seabrook, LLC Seabrook, NH (13 miles S of Portsmouth, NH) 05000443 https://www.nrc.gov/info-finder/reactors/sea	l ab1.html	PWR-DRYAMB WEST 4LP UE&C UE&C	3,648 NPF-86	07/07/1976 03/15/1990 08/19/1990 N/A 03/15/2030	77 75 100 93 87 90
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/see	II q1.html	PWR-ICECND WEST 4LP TVA TVA	3,455 DPR-77	05/27/1970 09/17/1980 07/01/1981 N/A 09/17/2020	98 89 83 100 87 90
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/see	II q2.html	PWR-ICECND WEST 4LP TVA TVA	3,455 DPR-79	05/27/1970 09/15/1981 06/01/1982 N/A 09/15/2021	89 77 90 90 73 95
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/ha	II r1.html	PWR-DRYAMB WEST 3LP EBSO DANI	2,900 NPF-63	01/27/1978 10/24/1986 05/02/1987 12/17/2008 10/24/2046	103 90 83 99 87 88



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* Capacity Factor (Percent)
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/stp	IV 1.html	PWR-DRYAMB WEST 4LP BECH EBSO	3,853 NPF-76	12/22/1975 03/22/1988 08/25/1988 N/A 08/20/2027	94 93 91 81 78 73
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/stp.	IV 2.html	PWR-DRYAMB WEST 4LP BECH EBSO	3,853 NPF-80	12/22/1975 03/28/1989 06/19/1989 N/A 12/15/2028	88 72 59 103 85 92
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/sur	II 1.html	PWR-DRYSUB WEST 3LP S&W S&W	2,587 DPR-32	06/25/1968 05/25/1972 12/22/1972 03/20/2003 05/25/2032	101 92 91 99 76 96
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/sur.	II 2.html	PWR-DRYSUB WEST 3LP S&W S&W	2,587 DPR-37	06/25/1968 01/29/1973 05/01/1973 03/20/2003 01/29/2033	76 91 101 95 82 101
Susquehanna Steam Electric Station, Unit 1 Susquehanna Nuclear, LLC Berwick, PA (70 miles NE of Harrisburg, PA) 05000387 https://www.nrc.gov/info-finder/reactors/sus		BWR-MARK 2 GE 4 BECH BECH	3,952 NPF-14	11/03/1973 07/17/1982 06/08/1983 11/24/2009 07/17/2042	86 70 87 83 76 77
Susquehanna Steam Electric Station, Unit 2 PPL Susquehanna, LLC Berwick, PA (70 miles NE of Harrisburg, PA) 05000388 https://www.nrc.gov/info-finder/reactors/sus		BWR-MARK 2 GE 4 BECH BECH	3,952 NPF-22	11/03/1973 03/23/1984 02/12/1985 11/24/2009 03/23/2044	72 83 80 88 82 93
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/tmi	l 1.html	PWR-DRYAMB B&W LLP GIL UE&C	2,568 DPR-50	05/18/1968 04/19/1974 09/02/1974 10/22/2009 04/19/2034	92 100 78 104 77 82



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	MWt	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* Capacity Factor (Percent)
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	II 3.html	PWR-DRYAMB WEST 3LP BECH BECH	2,644 DPR-31	04/27/1967 07/19/1972 12/14/1972 06/06/2002 07/19/2032	96 40 81 84 78 93
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	II	PWR-DRYAMB WEST 3LP BECH BECH	2,644 DPR-41	04/27/1967 04/10/1973 09/07/1973 06/06/2002 04/10/2033	84 85 70 88 106 99
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/sur	II m.html	PWR-DRYAMB WEST 3LP GIL DANI	2,900 NPF-12	03/21/1973 11/12/1982 01/01/1984 04/23/2004 08/06/2042	88 86 93 81 79 96
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/vog	II g1.html	PWR-DRYAMB WEST 4LP SBEC GPC	3,625.6 NPF-68	06/28/1974 03/16/1987 06/01/1987 06/03/2009 01/16/2047	92 91 101 87 91 101
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/vog	II g2.html	PWR-DRYAMB WEST 4LP SBEC GPC	3,625.6 NPF-81	06/28/1974 03/31/1989 05/20/1989 06/03/2009 02/09/2049	94 102 87 92 100 94
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/wa	IV nt3.html	PWR-DRYAMB COMB CE EBSO EBSO	3,716 NPF-38	11/14/1974 03/16/1985 09/24/1985 N/A 12/18/2024	82 77 89 90 80 96
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/wb	II o1.html	PWR-ICECND WEST 4LP TVA TVA	3,459 NPF-90	01/23/1973 02/07/1996 05/27/1996 N/A 11/09/2035	84 87 90 89 76 85



Plant Name, Unit Number Licensee Location Docket Number NRC Web Page Address	NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt License Number	CP Issued OL Issued Comm. Op. LR Issued Exp. Date	2011– 2016* Capacity Factor (Percent)
Watts Bar Nuclear Plant, Unit 2	II	PWR-ICECND	3,411	01/24/1973	_
Tennessee Valley Authority		WEST 4LP	NPF-96	10/22/2015	
Spring City, TN		TVA		10/19/2016	
(60 miles SW of Knoxville, TN)		TVA		N/A	
05000391				10/22/2055	0
https://www.nrc.gov/info-finder/reactors/w	b2.html				26
Wolf Creek Generating Station, Unit 1	IV	PWR-DRYAMB	3,565	05/17/1977	72
Wolf Creek Nuclear Operating Corp.		WEST 4LP	NPF-42	06/04/1985 ^h	80
Burlington (Coffey County), KS		BECH		09/03/1985	65
(28 miles SE of Emporia, KS)		DANI		11/20/2008	83
05000482				03/11/2045	78
https://www.nrc.gov/info-finder/reactors/w	c.html				74

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

Operating Reactors Under Active Construction or Deferred Policy

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



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

A: On July 31, 2017, a decision was announced by South Carolina Electric & Gas (SCE&G) to cease construction on V.C. Summer nuclear power plant, Units 2 and 3.



APPENDIX A

Commercial Nuclear Power Reactors

Operating Reactors under Active Construction or Deferred Policy (continued)

Licensee Location Docket N		NRC Region	Con Type NSSS Architect Engineer Constructor	Licensed MWt	CP Issued COL Issued Comm. Op. LR Issued Exp. Date	
Southern Waynesb (26 miles 0520002	ectric Generating Plant, Unit 3 Nuclear Operating Co., Inc. oro (Burke County), GA SE of Augusta, GA) 5 ww.nrc.gov/reactors/new-reactors/	II col-hola	PWR AP1000 WEST 2LP	3,400 NPF-91	02/10/2012	N/A
Southern Waynesb (26 miles 05200020	ectric Generating Plant, Unit 4 Nuclear Operating Co., Inc. oro, (Burke County), GA SE of Augusta, GA) 6 ww.nrc.gov/reactors/new-reactors/	II col-hold	PWR AP1000 WEST 2LP	3,400 NPF-92	02/10/2012	N/A
Duke End Cheroked (2 miles S 0520001)	tates Lee III Nuclear Station, Unit 3 ergy Carolinas e County, SC SE of Gafney, SC) 8 ww.nrc.gov/reactors/new-reactors/	II col-hold	PWR AP1000 WEST 2LP	3,400 NPF-101	12/19/2016	N/A
Duke End Cheroked (2 miles \$ 05200019	tates Lee III Nuclear Station, Unit 4 ergy Carolinas e County, SC SE of Gafney, SC) 9 ww.nrc.gov/reactors/new-reactors/	II col-hold	PWR AP1000 WEST 2LP	3,400 NPF-102	12/19/2016	N/A

^{*} Average capacity factor is listed in year order starting with 2009.

*** Bellefonte Units 1 and 2 are under the Commission Policy Statement on Deferred Plants (52 FR 38077; October 14, 1987). *** Watts Bar Unit 2 is currently performing startup testing, and is anticipated to begin commercial operation Fall 2016. Note: Plant names and data are as identified on the license as of July 2017; the next printed update will be in August 2018. Source: NRC, with some data compiled from U.S. Department of Energy's (DOE's) Energy Information Administration (EIA).

APPENDIX B New Nuclear Power Plant Licensing Applications

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

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



APPENDIX C

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

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



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	DECON DECON in Progress
			2017	
Indian Point 1 Buchanan, NY 05000003	PWR 615	B&W	03/26/1962 10/31/1974	SAFSTOR SAFSTOR
			2026	
Kewaunee Carlton, WI 05000305	PWR 1,772	WEST 2LP	12/21/1973 05/07/2013	SAFSTOR SAFSTOR
			2073	
La Crosse Genoa, WI 05000409	BWR 165	AC	07/03/1967 04/30/1987 TBD	DECON DECON in Progress
Maine Yankee Wiscasset, ME 05000309	PWR 2,700	CE	06/29/1973 12/06/1996 09/30/2005	DECON DECON Completed
Millstone 1 Waterford, CT 05000245	BWR 2,011	GE	10/31/1970 07/21/1998 12/31/2056	SAFSTOR SAFSTOR
Pathfinder Sioux Falls, SD 05000130	BWR 190	AC	03/12/1964 09/16/1967 07/27/2007	DECON DECON Completed
Peach Bottom 1 Delta, PA 05000171	HTG 115	GA	01/24/1966 10/31/1974 12/31/2034	SAFSTOR SAFSTOR
Rancho Seco Herald, CA 05000312	PWR 2,772	B&W	08/16/1974 06/07/1989 09/25/2009	DECON DECON Completed
San Onofre 1* San Clemente, CA 05000206	PWR 1,347	WEST	03/27/1967 11/30/1992 12/30/2030	DECON SAFSTOR



APPENDIX C

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

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



APPENDIX C

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

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

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

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

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

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

^{**} 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 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



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



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



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



APPENDICES

APPENDIX D 🦃

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



Canceled Commercial Nuclear Power Reactors (continued) Part 52—Licensing, Certification, and Approvals for Nuclear Power Plants

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

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

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

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

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

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



APPENDIX E 🥝

Commercial Nuclear Power Reactors by Parent Company (continued)

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

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

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

APPENDIX F

Commercial Nuclear Power Reactor Operating Licenses – Issued by Year

1969	Dresden 2*		Calvert Cliffs 1	1980	North Anna 2	-	Waterford 3
1909				1900			
	Ginna*		Cooper	1001	Sequoyah 1	1000	Wolf Creek 1
	Nine Mile Point 1*		Cook 1	1981	,	1986	Catawba 2
	Oyster Creek*		Duane Arnold		McGuire 1		Hope Creek 1
1970	Point Beach 1*		FitzPatrick		Salem 2		Millstone 3
	Robinson 2		Hatch 1		Sequoyah 2		Palo Verde 2
1971	Dresden 3		Oconee 3	1982	LaSalle 1		Perry 1
	Monticello*		Peach Bottom 3		Summer	1987	Beaver Valley 2
1972	Palisades*		Prairie Island 1		Susquehanna 1		Braidwood 1
	Pilgrim		Prairie Island 2	1983	McGuire 2	-	Byron 2
	Quad Cities 1		Three Mile Island 1		St. Lucie 2		Clinton
	Quad Cities 2	1975	Millstone 2	1984	Callaway	-	Harris 1
	Surry 1	1976			Columbia		Nine Mile Point 2
	Turkey Point 3	1970	Beaver Valley 1		Diablo Canyon 1		Palo Verde 3
1973			Browns Ferry 3		Grand Gulf 1		Vogtle 1
1970	,		Brunswick 1		LaSalle 2	1988	Braidwood 2
	Indian Point 2		Calvert Cliffs 2			1900	
	Oconee 1		Indian Point 3	4005	Susquehanna 2	1000	South Texas Project 1
	Oconee 2		Salem 1	1985	Byron 1	1989	Limerick 2
	Peach Bottom 2		St. Lucie 1		Catawba 1		South Texas Project 2
	Point Beach 2*	1977	Davis-Besse	_	Diablo Canyon 2		Vogtle 2
	Surry 2		D.C. Cook 2		Fermi 2	1990	Comanche Peak 1
	Turkey Point 4		Farley 1		Limerick 1		Seabrook 1
1974	Arkansas Nuclear 1	1978	Arkansas Nuclear 2	-	Palo Verde 1	1993	Comanche Peak 2
	Browns Ferry 2		Hatch 2		River Bend 1	1996	Watts Bar 1
	Brunswick 2		North Anna 1				
	DI UI ISWICK Z		Tiordi / dilla 1	_			

^{*} AEC Issued a provisional operating license allowing commercial operations.

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

APPENDIX G 🦃

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

2013 Indian Point 2 2015 Indian Point 3 2024 Diablo Canyon 1 Waterford 3 2025 Diablo Canyon 2 River Bend 1 2026 Clinton	2033 Browns Ferry 1 Comanche Peak 2 Fort Calhoun Oconee 1 Oconee 2 Peach Bottom 2 Point Beach 2	2036 Beaver Valley 1 Browns Ferry 3 Brunswick 1 Calvert Cliffs 2 St. Lucie 1 Salem 1 2037 Cook 2	2044 Byron 1 Calloway Grand Gulf 1 Limerick 1 Susquehanna 2 2045 Fermi 2
Perry 2027 South Texas Project 1 2028 South Texas Project 2 2029 Ginna	Prairie Island 1 Surry 2 Turkey Point 4 2034 Arkansas Nuclear 1	Davis-Besse 1 Farley 1 2038 Arkansas Nuclear 2 Hatch 2	Millstone 3 Palo Verde 1 Wolf Creek 1 2046 Braidwood 1
Nine Mile Point 1 Oyster Creek 2030 Comanche Peak 1 Monticello	Browns Ferry 2 Brunswick 2 Calvert Cliffs 1 Cook 1	North Anna 1 2040 North Anna 2 Salem 2 Sequoyah 1	Byron 2 Harris 1 Hope Creek Nine Mile Point 2 Palo Verde 2
Point Beach 1 Robinson 2 Seabrook 2031 Dresden 3	Cooper Duane Arnold Hatch 1 FitzPatrick	2041 Farley 2 McGuire 1 Sequoyah 2 2042 LaSalle 1	2047 Beaver Valley 2 Braidwood 2 Palo Verde 3 Voqtle 1
Palisades 2032 Pilgrim Quad Cities 1 Quad Cities 2 Surry 1 Turkey Point 3	Oconee 3 Peach Bottom 3 Prairie Island 2 Three Mile Island 1 2035 Millstone 2 Watts Bar 1	Summer Susquehanna 1 2043 Catawba 1 Catawba 2 Columbia LaSalle 2 McGuire 2	2049 Limerick 2 Vogtle 2 2055 Watts Bar 2

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



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

Licensee	Reactor Type OL Issued	Power Level	Licensee Number
Location		(kW)	Docket Number
Aerotest	TRIGA (Indus)	250	R-98
San Ramon, CA	07/02/1965		05000228
Armed Forces Radiobiology Research Institute Bethesda, MD	TRIGA 06/26/1962	1,100	R-84 05000170
Dow Chemical Company	TRIGA	300	R-108
Midland, MI	07/03/1967		05000264
GE-Hitachi	Tank	100	R-33
Sunol, CA	10/31/1957		05000073
Idaho State University	AGN-201 #103	0.005	R-110
Pocatello, ID	10/11/1967		05000284
Kansas State University	TRIGA	250	R-88
Manhattan, KS	10/16/1962		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	Pulstar	1,000	R-120
Raleigh, NC	08/25/1972		05000297
Ohio State University	Pool	500	R-75
Columbus, OH	02/24/1961		05000150
Oregon State University	TRIGA Mark II	1,100	R-106
Corvallis, OR	03/07/1967		05000243
Pennsylvania State University	TRIGA	1,100	R-2
State College, PA	07/08/1955		05000005
Purdue University	Lockheed	12	R-87
West Lafayette, IN	08/16/1962		05000182
Reed College	TRIGA Mark I	250	R-112
Portland, OR	07/02/1968		05000288



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

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

Licensee	Reactor Type	Power Level (kW)	Licensee Number
Location	OL Issued		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	TRIGA Mark I	1,000	R-113
Denver, CO	02/24/1969		05000274
University of California/Davis	TRIGA	2,300	R-130
Sacramento, CA	08/13/1998		05000607
University of California/Irvine Irvine, CA	TRIGA Mark I 11/24/1969	250	R-116 05000326
University of Florida	Argonaut	100	R-56
Gainesville, FL	05/21/1959		05000083
University of Maryland	TRIGA	250	R-70
College Park, MD	10/14/1960		05000166
University of Massachusetts/Lowell Lowell, MA	GE Pool 12/24/1974	1,000	R-125 05000223
University of Missouri/Columbia	Tank	10,000	R-103
Columbia, MO	10/11/1966		05000186
University of New Mexico	AGN-201M #112	0.005	R-102
Albuquerque, NM	09/17/1966		05000252
University of Texas	TRIGA Mark II	1,100	R-129
Austin, TX	01/17/1992		05000602
University of Utah	TRIGA Mark I	100	R-126
Salt Lake City, UT	09/30/1975		05000407
University of Wisconsin	TRIGA	1,000	R-74
Madison, WI	11/23/1960		05000156
Washington State University Pullman, WA	TRIGA 03/06/1961	1,000	R-76 05000027

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



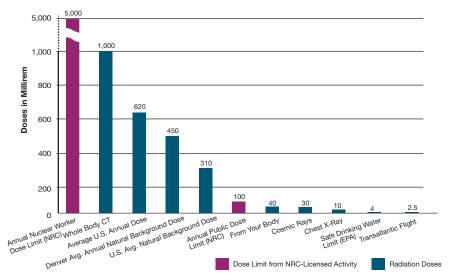
APPENDIX I 🤏

Nuclear Research and Test Reactors under Decommissioning Regulated by the NRC

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

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

APPENDIX J Radiation Doses and Regulatory Limits





	Number of Licenses		
		Agreement	
State	NRC	States	
Alabama	16	388	
Alaska	66	0	
Arizona	11	339	
Arkansas	6	208	
California	59	1,762	
Colorado	19	319	
Connecticut	138	0	
Delaware	43	0	
District of Columbia	32	0	
Florida	26	1,620	
Georgia	22	414	
Hawaii	58	0	
Idaho	73	0	
Illinois	32	625	
Indiana	239	0	
lowa	2	164	
Kansas	13	272	
Kentucky	12	364	
Louisiana	10	459	
Maine	4	103	
Maryland	82	537	
Massachusetts	31	424	
Michigan	430	0	
Minnesota	15	136	
Mississippi	7	286	
Missouri	246	0	
Montana	84	0	
Nebraska	5	140	
Nevada	2	242	
New Hampshire	3	86	
New Jersey	35	573	

	Number of Licenses			
	NDO	Agreement		
State	NRC	States		
New Mexico	13	214		
New York	22	1,310		
North Carolina	24	578		
North Dakota	4	89		
Ohio	41	593		
Oklahoma	16	231		
Oregon	5	271		
Pennsylvania	46	631		
Rhode Island	2	44		
South Carolina	15	364		
South Dakota	36	0		
Tennessee	22	526		
Texas	47	1,493		
Utah	10	190		
Vermont	33	0		
Virginia	57	398		
Washington	16	332		
West Virginia	161	0		
Wisconsin	12	292		
Wyoming	87	0		
Puerto Rico	117	0		
Virgin Islands	8	0		
Guam	7	0		
Total number of materials licenses in Agreement State jurisdiction 17,017				

2,622

19,639

	Agreement State	Letter of Intent	Draft Application

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

The NRC licenses Federal agencies in Agreement States.



in Agreement State jurisdiction

Total number of materials licenses

Total number of materials licenses

in NRC jurisdiction

in the United States

Licensee	Location	Status	Docket #
Uranium Hexafluoride Conversion Facility			
Honeywell International, Inc.	Metropolis, IL	active	04003392
Uranium Fuel Fabrication Facilities			
Global Nuclear Fuel-Americas, LLC	Wilmington, NC	active	07001139
Westinghouse Electric Company, LLC Columbia Fuel Fabrication Facility	Columbia, SC	active	07001151
Nuclear Fuel Services, Inc.	Erwin, TN	active	07000143
BWXT Nuclear Operations Group, Inc.	Lynchburg, VA	active	07000027
AREVA, Inc.	Richland, WA	active	07001257
Mixed-Oxide Fuel Fabrication Facility			
CB&I AREVA MOX Services, LLC	Aiken, SC	construction	07003098
Gas Centrifuge Uranium Enrichment Facilities	3		
Centrus Energy Corp. Lead Cascade: Test and Demonstration Facility	Piketon, OH	transitioning into decommissiong	07007003
Centrus Energy Corp American Centrifuge Plant	Piketon, OH	license issued, construction halted	07007004
URENCO-USA (Louisiana Energy Services)	Eunice, NM	active	07003103
AREVA Enrichment Services, LLC Eagle Rock Enrichment Facilities	Idaho Falls, ID	license issued,* construction not started	07007015
Laser Separation Enrichment Facility			
GE-Hitachi Global Laser Enrichment, LLC	Wilmington, NC	license issued, construction not started	07007016
Uranium Hexafluoride Deconversion Facility	1		
International Isotopes, Inc.	Hobbs, NM (Lea County)	license issued, construction not started	04009086

^{*} Operating and producing enriched uranium while undergoing further phases of construction. Note: Data are current as of July 2017; the next printed update will be in August 2018.

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

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

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

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



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



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



APPENDIX N Cask Spent Fuel Storage Licensees (continued)

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

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

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



APPENDIX 0

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

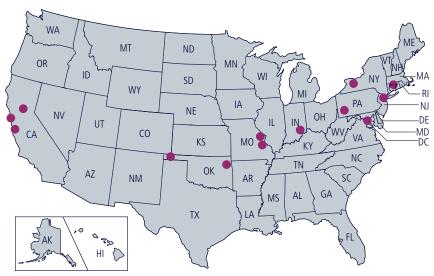
Closed Low-Level Radioactive Waste Disposal Facility Sites Licensed by the NRC or Agreement States

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

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

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

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



• NRC-regulated complex materials sites (13)

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

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

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



In Operation

Under Construction or on Order

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

 Under Construction

 In Operation
 or on Order

 Gross MW
 Gross MW

	Nuclear Power	Number	Gross MW Electrical	Number	Gross MW Electrical	
Country	Production GWh*	of Units	Capacity	of Units		Shutdown
Ukraine	80,950	15	13,835	2	2,178	4 ^P
United Arab Emirate	es 0	0	0	4	5,600	0
United Kingdom	65,149	15	10,362	0	0	30 ^P
United States	805,327	99	105,403	4	5,000	34 ^P

Overview of Worldwide Nuclear Power Reactors—As of May 10, 2017

Nuclear Electricity Supplied (GWh)	2,476,217
Net Installed Capacity (MWe)	392,116
Nuclear Power Reactors in Operation	449
Nuclear Power Reactors in Long-Term Shutdown	2
Nuclear Power Reactors in Permanent Shutdown	
Nuclear Power Reactors under Construction	60

^{*} Annual electrical power production for 2016.

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

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

APPENDIX R Nuclear Power Units by Reactor Type, Worldwide

In Operation

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

Note: MWe values rounded to the nearest whole number.

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

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

P = Permanent Shutdown

L = Long-Term Shutdown

APPENDIX S

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



ARIZONA

Palo Verde

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

CONNECTICUT

Millstone

Mohegan Reservation Mashantucket Pequot Reservation

Narragansett
Reservation
Shinnecock Indian Nation

FLORIDA

St. Lucie

Brighton Reservation (Seminole Tribes of Florida)

Fort Pierce Reservation

Turkey Point

Hollywood Reservation (Seminole Tribes of Florida)

Miccosukee Reservation Miccosukee Trust Land

IOWA

Duane Arnold Sac & Fox Trust Land

Sac & Fox Trust Land Sac & Fox Reservation

KANSAS

Iowa Reservation

LOUISIANA

River Bend

Tunica-Biloxi Reservation

MASSACHUSETTS

Pilgrim

Wampanoag Tribe of Gay Head (Aquinnah) Trust Land

MICHIGAN

Palisades

Pottawatomi Reservation Matchebenashshewish Band

Pokagon Reservation Pokagon Trust Land*

DC Cook

Pokagon Reservation Pokagon Trust Land

MINNESOTA

Monticello

Shakopee Community Shakopee Trust Land Mille Lacs Reservation

Prairie Island

Prairie Island Community* Prairie Island Trust Land* Shakopee Community Shakopee Trust Land

NEBRASKA

Cooper

Sac & Fox Trust Land Sac & Fox Reservation Iowa Reservation Iowa Trust Land Kickapoo

NEW YORK

FitzPatrick

Onondaga Reservation Oneida Reservation

Nine Mile Point

Onondaga Reservation
Oneida Reservation

NORTH CAROLINA

McGuire

Catawba Reservation

SOUTH CAROLINA

Catawha

Catawba Reservation

Oconee

Eastern Cherokee Reservation

Summer

Catawba Reservation

VIRGINIA

Surry

Pamunkey Reservation

WASHINGTON

Columbia

Yakama Reservation Yakama Trust Land

WISCONSIN

Point Beach

Oneida Trust Land Oneida Reservation

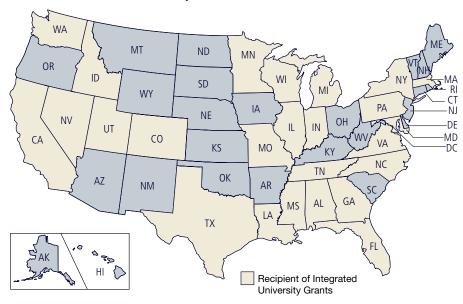
NRC-abbreviated reactor names listed. Data are current as of August 2017, and the next printed update will be August 2018.



^{*} Tribe is located within the 10-mile emergency preparedness zone of operating reactors.

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

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



Notes:

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

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

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

APPENDIX U 🦃

Significant Enforcement Actions Issued, 2016

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

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



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

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



APPENDIX V Regulatory Commission APPENDIX V 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.
- Uranium Mill Tailings Radiation Control Act of 1978, as amended (Pub. L. 95-604)
- 5. Nuclear Non-Proliferation Act of 1978 (Pub. L. 95-242)
- 6. West Valley Demonstration Project Act of 1980 (Pub. L. 96-368)
- 7. Nuclear Waste Policy Act of 1982, as amended (Pub. L. 97-425)
- 8. Low-Level Radioactive Waste Policy Amendments Act of 1985 (Pub. L. 99-240)
- 9. Energy Policy Act of 1992 (Pub. L. 102-486)
- 10. Energy Policy Act of 2005 (Pub. L. 109-58)

Fundamental Laws Governing Civilian Uses of Radioactive Materials

Nuclear Materials and Facilities

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

Radioactive Waste

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

Nonproliferation

Nuclear Non-Proliferation Act of 1978

Fundamental Laws Governing the Processes of Regulatory Agencies

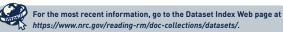
- 1. Administrative Procedure Act (5 U.S.C. Chapters 5 through 8)
- 2. National Environmental Policy Act

APPENDIX W International Activities:

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

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

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



^{*} This excludes arms control agreements.

APPENDIX X < ≪ International Activities:

LIST OF THE NRC'S PARTICIPATION WITH MULTILATERAL ORGANIZATIONS

International Commission on Radiological Protection

International Atomic Energy Agency (IAEA)

Commission on Safety Standards (CSS)

Emergency Preparedness and Response Standards Committee (EPReSC)

Nuclear Safety Standards Committee (NUSSC)

Nuclear Security Guidance Committee (NSGC)

Radiation Safety Standards Committee (RASSC)

Transport Safety Standards Committee (TRANSSC)

Waste Safety Standards Committee (WASSC)

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

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

Steering Committee for Nuclear Energy

The Committee on the Safety of Nuclear Installations (CSNI)

The Committee on Nuclear Regulatory Activities (CNRA)

The Radioactive Waste management Committee (RWMC)

The Committee on Radiation Protection and Public Health (CRPPH)

The Nuclear Law Committee (NLC)

Multinational Design Evaluation Programme (MDEP)

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

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

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

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

APPENDIX X ≪ International Activities: (continued)

BILATERAL INFORMATION EXCHANGE AND COOPERATION AGREEMENTS WITH THE NRC

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

Notes: The country's short-form name is used. The NRC's technical arrangements are initiated and renewed for 5-year terms. Data are current as of July 2017; the next printed update will be in August 2018.

EURATOM is the European Atomic Energy Community.

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

APPENDIX Y 🦃

International Activities:

LIST OF IMPORT AND EXPORT LICENSES ISSUED FOR 2016

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

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

LIST OF IMPORT AND EXPORT LICENSES: NON-APPENDIX P

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



APPENDIX Y 🦃

International Activities: (continued)

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

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

Non-Appendix P Components Guide

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

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

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

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

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

(IW) denotes import of radioactive waste.

(XW) denotes export of radioactive waste.