

APPENDIX F

LIST OF ABBREVIATIONS AND TERMS

AFC	alkaline fuel cell
AFCI	Advanced Fuel Cycle Initiative
Alq3	a flexible, light-emitting polymer used for organic light-emitting diodes
ANL	Argonne National Laboratory
APS	Advanced Photon Source
ARIES-RS	a Tokamak design fusion power plant
ARIES-ST	a spherical torus design fusion power plant
ATP-ADP	adenosine triphosphate-adenosine diphosphate
BBO	billion barrels of oil
BES	Basic Energy Sciences Program of DOE
BESAC	Basic Energy Sciences Advisory Committee
BOP	balance of plant
Btu	British thermal unit
CFD	computational fluid dynamics
CHP	combined heat and power
cm	centimeter
COP	coefficient of performance
CRI	color rendering index
CVD	chemical vapor deposition
CVM	cluster variation method
DFT	density functional theory
DNA	deoxyribose nucleic acid
DNS	Direct Numerical Simulation
DOE	Department of Energy
DP	Defense Programs
dpa	displacement per atom
DT	deuterium and tritium
EE/FSU	Eastern Europe/Former Soviet Union
EE/RE	Energy Efficiency and Renewable Energy Program of DOE
EIA	Energy Information Administration
EJ	exajoule (10^{18} Joules)
EMI	electromagnetic interference
ES&H	Environmental, Safety and Health
EV	electric-drive vehicle
FC	fuel cell
FCEV	fuel-cell-powered electric vehicle
FE	Fossil Energy Program of DOE
FETC	Federal Energy Technology Center
FIRE	Fusion Ignition Research Experiment
ft	feet
GB	gigabarrels
gC/MJ	grams carbon per megajoule
GDP	gross domestic product
GFR	Gas-cooled Fast Reactor
GHG	greenhouse gas

GIF	Generation-IV International Forum
GJ	gigajoule (10^9 Joule)
GJ/s	gigajoule per second
GM	General Motors
g/MJ	grams per megajoule
GRI	Gas Research Institute
GW	gigawatt (10^9 Watt)
GWP	Global Warming Potential
HCCI	homogeneous charge compression ignition
HEV	hybrid electric vehicle
HTGR	high-temperature gas-cooled reactor
ICE	internal combustion engine
IEA	International Energy Agency
IEO	International Energy Outlook
IFE	inertial fusion energy
IAEA	International Atomic Energy Agency
IASCC	irradiation-assisted stress corrosion cracking
IGNITOR	magnetic fusion experiment led by Prof. Bruno Coppi at the Massachusetts Institute of Technology.
ITER	International Thermonuclear Experimental Reactor
IWG	Interlaboratory Working Group
J	Joule
JANAF	thermochemical tables database of National Institute of Standards and Technology
JET	Joint European Torus
J/s	Joule per second
kg	kilogram (10^3 gram)
kJ	kilojoule (10^3 Joule)
km	kilometer (10^3 meter)
kW	kilowatt (10^3 Watt)
kWh	kilowatt-hour (10^3 Watt-hour)
l	liter
lb/MBtu	pounds per mega (10^6) British thermal unit
LBNL	Lawrence Berkeley National Laboratory
LED	light-emitting diode
LES	Large Eddy Simulation
LFR	Lead-cooled Fast Reactor
LMJ	Laser Mega-Joule (fusion energy facility in France)
LNG	liquid natural gas
LPC	ultra-lean premixed hydrocarbon combustion
LWR	light-water reactor
m	meter
mA	milliamp
mbd	million barrels per day
MBtu	mega Btu (10^6 Btu)
McF	million cubic feet

MCFC	molten carbonate fuel cell
MD	molecular dynamics
MEA	membrane/electrode assembly
meV	milli-electron volt
MeV	mega-electron volt
MFE	magnetic fusion energy
MHD	magnetohydrodynamics
MJ	megajoule (10^6 Joule)
MJ/s	megajoules per second
MJ/s _e	megajoules per second, electrical
mph	miles per hour
MSR	Molten Salt Reactor
Mt	million metric ton
MtC	million metric tons of carbon
MW	megawatt (10^6 Watt)
NASA	National Aeronautics and Space Administration
NE	Nuclear Energy, Science, and Technology (DOE Office of)
NEPDG	National Energy Policy Development Group
NERAC	Nuclear Energy Research Advisory Committee
NETL	National Energy Technology Laboratory
NIF	National Ignition Facility (fusion energy facility)
nm	nanometer
NMR	nuclear magnetic resonance
NNSA	National Nuclear Security Administration
NRC	National Research Council
NRC	Nuclear Regulatory Commission
NREL	National Renewable Energy Laboratory
NSLS	National Synchrotron Light Source
OECD	Organization for Economic Cooperation and Development
OLED	organic light-emitting diode
OPEC	Organization of the Petroleum Exporting Countries
ORNL	Oak Ridge National Laboratory
OS	Office of Science
OTA	Office of Technology Assessment
PAFC	phosphoric acid fuel cell
PEMFC	proton-exchange membrane fuel cell
ppm	parts per million
PRD	proposed research direction
ps	picosecond (10^{-12} second)
psi	pound per square inch
PUREX	plutonium uranium extraction process
PV	photovoltaic
Quad	energy unit equal to 10^{15} Btu
R&D	research and development
RH	relative humidity

RTIL	room temperature ionic liquid
s	second
S/cm	unit of ionic conductivity, Siemens/cm
SCF	supercritical fluid
SCR	selective catalytic reduction
SCWR	Supercritical Water-cooled Reactor
SFR	Sodium-cooled Fast Reactor
SI	International System of Units
SNRA	Swedish National Road Administration
SOFC	solid oxide fuel cell
STM	scanning tunnelling microscope
swnt	single-walled nanotubes
TBtu	terra Btu (10^{12} Btu)
tC	ton of carbon
TcF	trillion cubic feet
TE	thermoelectric
TFTR	Tokamak Fusion Test Reactor
TW	terawatts (10^{12} Watts)
TWe	terawatt electric
TWh	terawatt-hour
UAV	unmanned aerial vehicle
UREX	simplified version of PUREX
USGS	U.S. Geological Service
UV	ultraviolet
VHTR	Very High Temperature (gas-cooled) Reactor
VLT	Virtual Laboratory for Technology
vmt	vehicle miles traveled
VOC	volatile organic carbon
W	Watt
yr	year
YSZ	yttria-stabilized zirconia
Z	atomic number
Z	thermoelectric figure of merit for converting heat into electrical energy
ZT	Z (thermoelectric figure of merit) times the average operating temperature