ACRONYMS AND ABBREVIATIONS

AC	Alternating current
ACS	Active cooling system
AGR (1)	Advanced Gas Reactor [Gen IV VHTR]
AGR (2)	Advanced Gas Reactor [2nd generation CO_2-cooled, graphite-moderated reactor concept deployed in UK]
AGR Plan	Advanced Gas Reactor Fuel Development and Qualification Plan
ANL	Argonne National Laboratory
ANS	American Nuclear Society
ANSI	American National Standard Institute
AOO	Anticipated Operational Occurrence
App	Application
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATR	Advanced Test Reactor
ATWS	Anticipated transient without scram
AVR	Arbeitsgemeinschaft Versuchsreaktor [German demonstration HTR]
BAF_o	Bacon Anisotropy Factor – measured optically for pyrocarbons
B&PV Code	Boiler and Pressure Vessel Code
BDBA	Beyond Design Basis Accident
BDBE	Beyond Design Basis Event
BISO	Coated-fuel particle design with two materials in coating system (low-density PyC and high-density PyC)
BOP	Balance of plant
BR	Bottom reflector
C/C	Carbon/carbon
CB	Core barrel
CCS (1)	Carbon capture and sequestration
CCS (2)	Core Conditioning System
CEA	Commissariat à l'Energie Atomique

ACRONYMS AND ABBREVIATIONS

CFD	Computational fluid dynamics
CFR	Code of Federal Regulations
CIP	Core inlet plenum
CO	Carbon monoxide
COL	Combined license
CORDEL	Cooperation in Reactor Design Evaluation and Licensing
CP	Construction Permit
CR (1)	Centre reflector
CR (2)	Control rod
CRDM	Control rod drive mechanism
CUD	Core unloading device
CVD	Chemical vapor deposition
DBA	Design Basis Accident
DBE	Design Basis Event
DC	Design Certification
DCC	Depressurized conduction cooldown
DCWG	Design-Centered Working Group
DDN	Design Data Need
DID	Defense-in-depth
DIN	German Institute for Standardization
DLOFC	Depressurized loss of forced cooling
DOE	Department of Energy
DPP	Demonstration Power Plant (South Africa)
DTF	“Designed-to-fail” [fuel particles]
DV&S	Design verification and support
EAB	Exclusion Area Boundary
EFPD	Effective full power days
EIA	Energy Information Agency

ACRONYMS AND ABBREVIATIONS

EOL	End-of-life
EPA	Environmental Protection Agency
EPACT	Energy Policy Act [of 2005]
EPBE	Emergency Planning Basis Event
EPRI	Electric Power Research Institute
EPZ	Emergency Planning Zone
ESP	Early Site Permit
F/C	Frequency/consequence
FHS	Fuel Handling System
FHSS	Fuel Handling and Storage System
FIMA	Fissions in initial metal atoms
FIP	Filter inlet plenum
FOA	Funding Opportunity Announcement
FOAK	First-of-a-kind
FP	Fission product
FPT	Fission product transport
FR (1)	Federal Register
FR (2)	Fractional release
FRG	Federal Republic of Germany
FS	Fuel spheres
FSAR	Final Safety Analysis Report
FSV	Fort St. Vrain
GA	General Atomics
GCR	Gas-cooled reactor
GFB	Gas-fired boiler
GTCC	Gas Turbine Combined Cycle
GT-MHR	Gas Turbine Modular Helium Reactor
HEU	High-enriched uranium

ACRONYMS AND ABBREVIATIONS

HFIR	High Flux Isotope Reactor
HFR	High Flux Reactor
HM	Heavy Metal (U, Th, Pu, etc.)
HMI	Human-machine interface
HP	High pressure
HPB	Helium pressure boundary
HPC	High pressure compressor
HPS	Helium Purification System
HPTU	High pressure test unit
HFR-K3	Pebble bed fuel element irradiation test
HT&SS	Helium Transfer and Storage System
HTE	High temperature electrolysis
HTF	Helium Test Facility
HTGR	High Temperature Gas-cooled Reactor
HTGR-SC/C	HTGR-Steam Cycle/Cogeneration
HTR	High Temperature Reactor [German pebble-bed HTGR]
HTR-10	Chinese pebble bed test reactor [10 MWt]
HTR-PM	HTR Power Module
HTS	Heat Transport System
HTSE	High Temperature Steam Electrolysis
HTTR	High Temperature Engineering Test Reactor
HTTU	High Temperature Test Unit
HVAC	Heating, ventilating and air conditioning
HX	Heat exchanger
I&C	Instrumentation and Control
IAEA	International Atomic Energy Agency
IHX	Intermediate heat exchanger
IMGA	Irradiated Microsphere Gamma Analyzer

ACRONYMS AND ABBREVIATIONS

INL	Idaho National Laboratory
IPyC	Inner pyrolytic carbon coating layer
IPS	Investment Protection System
JAEA	Japan Atomic Energy Agency (formerly JAERI)
JAERI	Japan Atomic Energy Research Institute
KAERI	Korea Atomic Energy Research Institute
KFA	Kernforschungsanlage – Juelich [now renamed Forschungszentrum Juelich]
KTA	Kerntechnischen Ausschusses (German equivalent of ASME B&PV Code)
KVK	German high temperature helium test loop (decommissioned)
LBE	Licensing Basis Event
LBP	Lumped burnable poison
LEU	Low-enriched uranium ($\leq$19.9% U-235)
LMTD	Logarithmic mean temperature difference
LOCA	Loss of coolant accident
LOFC	Loss of forced cooling
LOSP	Loss of off-site power
LP	Low pressure
LPC	Low-pressure compressor
LTR	Licensing Topical Report
LWA	Limited Work Authorization
LWR	Light water reactor
MDEP	Multinational Design Evaluation Programme
MHR	Modular Helium Reactor
MHTGR	Modular High Temperature Gas-cooled Reactor
MIR	Matched index of refraction
ML	Main loop
MPS	Main Power System

ACRONYMS AND ABBREVIATIONS

MT	Metric ton
MTS	Methyltrichlorosilane
MWe	Megawatts electric
MWt	Megawatts thermal
NCA	Neutron control assembly
NDTT	Nil ductility transition temperature
NGNP	Next Generation Nuclear Plant
NHSB	Nuclear Heat Supply Building
NHSS	Nuclear Heat Supply System
NP-MHTGR	New Production - Modular Helium Reactor
NPR	New Production Reactor (same as NP-MHTGR)
NRC	Nuclear Regulatory Commission
NSTF	Natural Convection Shutdown Heat Removal Test Facility
Nu	Nusselt number
O&M	Operation and maintenance
ODS	Oxide dispersion strengthened
OL	Operating License
OPyC	Outer pyrolytic carbon coating layer
ORNL	Oak Ridge National Laboratory
P&L	Power and light
PAG	Protective action guideline
PAT	Post-accident train
PB-1	Peach Bottom Unit 1
PBMR	Pebble Bed Modular Reactor
PBMR-CG	PBMR – Cogeneration Plant
PBMR-DPP	PBMR – Demonstration Power Plant
PCC	Pressurized conduction cooldown
PCDIS	Plant Control, Data and Instrumentation System

ACRONYMS AND ABBREVIATIONS

PCS	Power Conversion System
PCU	Power Conversion Unit
PF	Packing fraction (fraction of fuel particle volume in a fuel compact or sphere)
P_f	Coating failure probability
PHPB	Primary helium pressure boundary
PIE	Post-irradiation examination
PIRT	Phenomenon Identification and Ranking Table
PLOFC	Pressurized loss of forced cooling
PNP	German HTR process heat development program (“Prototype plant for Nuclear Process heat”)
Pr	Prandtl number
PRA	Probabilistic risk assessment
PRS	Pressure relief shaft
PSER	Preapplication Safety Evaluation Report
PSID	Preliminary Safety Information Document (for the MHTGR)
PSR	Permanent side reflector
PWR	Pressurized water reactor
PyC	Pyrocarbon
QC	Quality control
R&D	Research and development
R/B	Release rate-to-birth rate ratio [a metric for fission gas release]
RB	Reactor building
RCC-M	French design and construction rules for mechanical components of PWRs (French equivalent of ASME B&PV Code)
RCCS	Reactor Core Cooling System
RCS	Reactivity Control System
RCSS	Reactivity Control and Shutdown System
Re	Reynolds number

ACRONYMS AND ABBREVIATIONS

rem	Roentgen equivalent man
RG	Regulatory guide
RI	Risk-informed
RIPB	Risk-informed performance-based
RN	Radionuclide
ROT	Reactor outlet helium temperature
RPS	Reactor Protection System
RPV	Reactor pressure vessel
RS	Reactor System
RSC	Reserve shutdown control
RSR	Replaceable side reflector
RTC	Reactor top cavity
RTDP	Regulatory Technology Development Plan
RV	Reactor vessel
SAS	Small Absorber Systems
SBS	Startup Blower System
SCHE	Shutdown Cooling Heat Exchanger
SCPCS	Steam Cycle Power Conversion System
SCS	Shutdown Cooling System
SECY	NRC position papers
SEM	Scanning electron microscope
SFR	Shear force ratio
SG	Steam generator
SGV	Steam generator vessel
SHPB	Secondary helium pressure boundary
SI	Sulfur-iodine [process for thermo chemical water splitting]
SiC	Silicon carbide
SMR	Small and medium sized reactor

ACRONYMS AND ABBREVIATIONS

SOEC	Solid oxide electrolyzer cell
SR (1)	Shear ratio
SR (2)	Side reflector
SRM	Staff requirements memoranda
SSC	Systems, structures, and components
stby	Standby
STP	Standard temperature and pressure [0 ^{o}C (273 K) and 1 atm]
t/b	Thermal barrier
T/F	Thermal-fluid
TEDE	Total Effective Dose Equivalent
THTR	Thorium High Temperature Reactor
TLDC	Top level design criteria
TLRC	Top level regulatory criteria
TR	Top reflector
TRIGA	Training, Research, Isotopes, General Atomics (test reactor)
TRISO	Coated-fuel particle design with three materials in coating system (low-density PyC, high-density PyC, and SiC)
UCO	Uranium oxycarbide - an admixture of UC_2 and UO_2
USDOE	US Department of Energy
V&V	Verification and validation
VHTR	Very High Temperature Reactor
VLPC	Vented low pressure containment
VS	Vessel System