

Appendix 1. **List of Generation IV specific abbreviations and acronyms**

AF	Advanced Fuel
AMME	Advanced Manufacturing and Materials Engineering
ARIS	Advanced Reactor Information System
CD&BOP	Component Design and Balance-of-Plant
CD&S	Conceptual Design and Safety
CMVB	Computational Methods Validation and Benchmarking
EG	Experts Group
EMWG	Economic Modelling Working Group
ETTF	Education and Training Task Force
ETWG	Education and Training Working Group
FA	Framework Agreement
FCM	Fuel and Core Material
FFC	Fuel and Fuel Cycle
GACID	Global Actinide Cycle International Demonstration
GIF	Generation IV International Forum
GFR	Gas-cooled fast reactor
HP	Hydrogen Production
HTR	High-Temperature gas-cooled Reactor
ISAM	Integrated Safety Assessment Methodology
LFR	Lead-cooled Fast Reactor
M&C	Materials and Chemistry
MAT	Materials (VHTR project)
MSR	Molten Salt Reactor
MWG	Methodology Working Group
PA	Project Arrangement
PD	Policy Director
PG	Policy Group
PMB	Project Management Board
PP	Physical Protection or Project Plan
PR	Proliferation resistance
PR&PP	Proliferation Resistance and Physical Protection

PSSC	Provisional System Steering Committee
RDTF	R&D infrastructure Task Force
RSWG	Risk and Safety Working Group
SA	System arrangement
SCWR	Supercritical-Water-cooled Reactor
SDC	Safety Design Criteria
SDG	Safety Design Guidelines
SFR	Sodium-cooled Fast Reactor
SIA	System Integration and Assessment
SIAP	Senior Industry Advisory Panel
SO	Safety and Operation
SRP	System research plan
SSC	System Steering Committee
TD	Technical Director
TF	Task force
TH&S	Thermal-hydraulics and Safety
TS	Technical Secretariat
ToR	Terms of Reference
VHTR	Very-high-temperature reactor
WG	Working group
WGSAR	Working Group on the Safety Advanced Reactors

Technical terms, projects and facility acronyms

ACP	Code for the Chinese SMR (PWR type)
ACRS	Advisory Committee on Reactor Safeguards
ADRIANA	ADvanced Reactor Initiative And Network Arrangement
ADS	Accelerator-driven system
AECS	Advanced Energy Conversion System
AGR	Advanced gas-cooled reactor (United States)
AFA	Alumina Forming Austenitic
AFR	Advanced Fast Reactor
AHFM	Algebraic Heat Flux Model
ALFRED	Advanced lead fast reactor European demonstrator
ALLEGRO	Gas Fast Reactor Project
AMR	Advanced Modular Reactor
ANM	ANSTO Nuclear Medicine
ASTRID	Advanced Sodium Technological Reactor for Industrial Demonstration
ART	Advanced Reactor Technology program (United States)

ASMR	Advanced Small Modular Reactor
ATR	Advanced Test Reactor (at INL)
ATWR	Anticipated Transient Without Scram
AVR	Arbeitsgemeinschaft Versuchsreaktor
BWR	Boiling Water Reactor
CASLER	Co-operative Alliance for Small Lead-based Fast Reactor
CIIALER	Chinese Industry Innovation Alliance of Lead-based Reactor
CEFR	China Experimental Fast Reactor
CFD	Computational Fluid Dynamics
CFR	Chinese Sodium Fast Reactor
CGR	Crack Growth Rate
CLEAR	China Lead-based Reactor
CNEPP	Comprehensive Nuclear Energy Promotion Plan (Korea)
CNRI	Canadian Nuclear Research Initiative
COLA	Combined License Application
CRP	Co-ordinated Research Project
DCA	Design Certification Application
DG	Director-General
DHR	Decay heat removal
EBR	Experimental Breeder Reactor (United States)
ECC-SMART	European-Canadian-Chinese Small Modular SCWR
ECFM	Eddy Current FlowMeter
ECS	Energy Conversion System
ELFR	European Lead Fast Reactor
EPR	European Pressurized Reactor
EPZ	Emergency Planning Zones
ESFR	European Sodium Fast Reactor
ESP	Early Site Permit
E&T	Education & Training
FA	Fuel Assembly
FEA	Finite Element Analysis
FLIBE	mixture of lithium and beryllium fluoride (BeF ₂)
FLINAK	salt mixture of LiF-NaF-KF
FOA	Funding Opportunity Announcement (United States)
FP	Framework Program
FSA	Fuel SubAssembly
FHR	Fluoride salt-cooled high-temperature reactor
FOAK	First-Of-A-Kind

FSR	Fast Sodium Reactor
FR	Fast Reactor
FY	Financial Year or Fiscal Year
GAIN	Gateway for Accelerated Innovation in Nuclear
GW	GigaWatt
GWD/MTHM	Gigawatt-Days per Metric Tonne of Heavy Metal
HANARO	High-flux advanced neutron application reactor
HEEP	Hydrogen Economic Evaluation Program
HINEG	High Intensity D-T fusion NEutron Generator ²
HFR	High Flux Reactor
HLD	High-Level Deliverable
HLMC	Heavy Liquid Metal Coolant
HPR	Advanced Pressurized Water Reactor
HTDM	High-Temperature Design Methodology
HTGR	High-Temperature Gas-cooled Reactor
HTR	High-Temperature Reactor
HTR-PM	High-temperature gas-cooled reactor power module
HTSE	High-Temperature Steam Electrolysis
HTTR	High-Temperature Test Reactor
ICT	Information Communication Technology
IG	InterGranular
IHX	Intermediate Heat Exchanger
ILW	Intermediate Level Waste
IPP	Independent Power Producer
IRP	Integrated Resource Plan
IRRS	Integrated Regulatory Review Service
ISI&R	In-Service Inspection and Repair
JHR	Jules Horowitz Reactor
JRC	Joint Research Centre
JSFR	Japanese Sodium-cooled Fast Reactor
KALIMER	Korea Advanced Liquid Metal Reactor
KKL	Kernkraftwerk Leibstadt Reactor (BWR)
KM	Knowledge Management
LBL	Leach-Burn-Leach
LCOE	Levelized Cost Of Energy
LOCA	Loss-Of-Coolant Accident
LWR	Light Water Reactor
LBE	Lead-Bismuth Eutectic

LMFNS	Liquid Metal-cooled Fast Neutron Systems
LTE	Low Temperature Electrolysis
LTS	Licensing Technical Support
MA	Minor Actinides
MAWP	Maximum Allowable Working Pressure
MINERVA	Micro Nuclear Energy Research and Verification Arena
MBIR	Russian multipurpose fast neutron research reactor
M-HEM	Modified Homogeneous Equilibrium Model
MOSART	Molten Salt Actinide Recycler and Transmuter
MoU	Memorandum of Understanding
MOX	Mixed oxide fuel
MMR	Micro Modular Reactor
MSFR	Molten salt fast reactor
MYRRHA	Multi-purpose Hybrid Research Reactor for High-tech Applications
MW	MegaWatt
NC	Natural Circulation or Natural Convection
NEUP	Nuclear Energy University Program
NPP	Nuclear power plant
NSSS	Nuclear Steam Supply System
NSR	Northern Sea Route
NSTF	Natural Convection Shutdown Heat Removal Test Facility
NRAD	Neutron Radiography (NRAD) Reactor
NRWMF	National Radioactive Waste Management Facility
NUWARD	French PWR SMR Project
ODS	Oxide dispersion-strengthened
OPAL	Open Pool Australian Lightwater reactor
OPT	Objective Provision Tree
O&TF	Operation technology and Testing Facilities
PEACER	Prolif.-resistant Environment-friendly Accident-tolerant Continual Energy Economical Reactor
PGSFR	Prototype Generation IV Sodium-Cooled Fast Reactor
PILLAR	Pool-type Integral Leading test facility for lead-alloy cooled SMR
PDE	Post-Disassembly Expansion
PDHRS	Passive Decay Heat Removal System
PIE	Post-Irradiation Examinations
PP	Primary Pump
PPE	Multiannual Energy Plan (France)
PRISM	Power Reactor Innovative Small Module

PSID	Preliminary Safety Information Document
PV	Photovoltaic
PWR	Pressurized Water Reactor
QSR	Qualitative Safety features Review
RANS	Reynolds Analysis Navier-Stokes
RCCS	Reactor Cavity Cooling System
R&D	Research and Development
RD&D	Research Development & Demonstration
RRDB	Research Reactor DataBase
RTFDB	Research and Test Facilities DataBase
SASS	Self Actuated Shutdown System
SCC	Stress corrosion cracking
S-CO ₂	Supercritical Carbon Dioxide
SCW	SuperCritical Water
SCWL	SuperCritical Water Loop
SDSAR	Specific Design Safety Analysis Report
SELAAD	Sodium Exp. Loop for Advanced Aerosol Detection
SEM	Scanning Electron Microscopy
SER	Safety Evaluation Report
SFEAR	Support Facilities for Existing and Advanced Reactors
SG	Steam generator
S-I	Sulphur-Iodine process
SMART	System-integrated Modular Advanced Reactor
SME	Small and Medium Enterprise
SMR	Small modular reactor
SNETP	Sustainable Nuclear Energy Technology Platform
SNF	Spent Nuclear Fuel
SSTAR	Small, Sealed, Transportable, Autonomous Reactor
STELLA	Sodium integral effect test loop for safety simulation and assessment
TAMAT	Towards Advanced Material for Energy Technologies
TAREF	Task Group on Advanced Experimental Facilities
TEM	Transmission Electron Microscopy
THTR	Thorium high-Temperature Reactor
TH-U	Thorium-Uranium
TMS	Tempered Martensitic Steel
TMSR	Thorium Molten Salt Reactor (China)
TORIA	Thorium-optimized Radioisotope Incineration Arena
TRISO	Tri-structural isotopic (nuclear fuel)

TRL	Technology Readiness Level
TRU	TransUranic
UCO	Uranium OxyCarbide
ULOF	Unprotected Loss Of Flow
UOX	Uranium Oxyde
VRE	Variable Energy Ressources
VTR	Versatile Testing Reactor (United States)
VVER	Russian light water power pressurized reactor model
WALSUM	Water mock-up test for Advanced Leak Simulation and Upgraded Monitoring system

Organizations, Companies and Agency

ANL	Argonne National Laboratory (United States)
ANS	American Nuclear Society
ANSTO	Australian Nuclear Science and Technology Organisation
ARC	DOE Office of Advanced Reactor Concepts (United States)
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ASME	American Society of Mechanical Engineers
ASN	Autorité de Sûreté Nucléaire (France)
BEIS	Business, Energy and Industrial Strategy Dpt (UK)
CAEA	China Atomic Energy Authority (China)
CAS	Chinese Academy of Science
CBCG	Columbia Basin Consulting Group
CEA	Commissariat à l'énergie atomique et aux énergies alternatives (France)
CGN	China General Nuclear Power Group
CIAE	China Institute of Atomic Energy
CIGEO	Centre Industriel de stockage géologique (France)
CNL	Canadian Nuclear Laboratories
CNNC	Chinese National Nuclear Corporation
CNRA	Committee for Nuclear Regulatory Authorities (NEA)
CNRS	Centre national de la recherche scientifique (France)
CNSC	Canadian Nuclear Safety Commission
DOE	Department of Energy (United States)
EC	European Commission
EDF	Electricité de France
ENEA	Italian National Agency for New Technologies, Energy and Sustainable Economic Development
EPFL	École Polytechnique Fédérale de Lausanne

ETHZ	Eidgenössische Technische Hochschule Zürich
EU	European Union
FP7	7th Framework Programme
IAEA	International Atomic Energy Agency
ICN	Institute of Nuclear Research (Romania)
IFNEC	International Framework for Nuclear Energy Cooperation (NEA)
INET	Institute of Nuclear and New Energy Technology (China)
INEST	Institute of Nuclear Energy Safety Technology (China)
INL	Idaho National Laboratory (United States)
INPRO	International Project on Innovative Nuclear Reactors and Fuel Cycles (IAEA)
IPPE	Institute of Physics and Power Engineering (Russia)
ITU	Institute for Transuranium Elements (Euratom)
JAEA	Japan Atomic Energy Agency
JRC	Joint Research Centre (Euratom)
KAERI	Korea Atomic Energy Research Institute
KAIST	Korea Advanced Institute of Science and Technology
KEPCO	Korea Electric Power Corporation
KINGS	KEPCO International Nuclear Graduate School
KIT	Karlsruhe Institute of Technology (Germany)
LANL	Los Alamos National Laboratory (United States)
LLNL	Lawrence Livermore National Laboratory (United States)
MDEP	Multinational Design Evaluation Program (NEA)
MOST	Ministry of Science and Technology (China)
MSIT	Ministry of Science, Information and Technology
MTA	Hungarian Academy of Sciences Centre for Energy Research
NCBJ	Narodowe Centrum Badan Jadrowych (Poland)
NEA	Nuclear Energy Agency
NEICA	Nuclear Energy Innovation Capabilities Act (United States)
NEIMA	Nuclear Energy Innovation and Modernization Act (United States)
NIRAB	Nuclear Innovation & Research Advisory Board (UK)
NPIC	Nuclear Power Institute of China
NRA	Nuclear Regulation Authority
NRC	Nuclear Regulatory Commission (United States)
NRCan	Department of Natural Resources (Canada)
NRG	Dutch Nuclear Safety Research Institute
NSSC	Nuclear Safety and Security Commission (China)
NTPD	Nuclear Power Technology Development Section (IAEA)
OECD	Organisation for Economic Co-operation and Development

OPG	Ontario Power Generation
ORNL	Oak Ridge National Laboratory (United States)
PNNL	Pacific Northwest National Laboratory
PSI	Paul Scherrer Institute (Switzerland)
RATEN	Regia Autonoma Tehnologii Pentru Energia Nucleara (Romania)
RIAR	Research Institute of Atomic Reactors (Russia)
SINAP	Shanghai Institute of Applied Physics
SJTU	Shanghai Jiaotong University
SNU	Seoul National University
SPIC	State Power Investment Corporation (China)
TAEK	Turkish Atomic Energy Authority
TEPCO	Tokyo Electric Power Company
TUBITAK	Scientific and Technological Research Council of Turkey
TVA	Tennessee Valley Authority
UAMPS	Utah Associated Municipal Power Systems
UNIST	Ulsan National Institute of Science and Technology
USTC	University of Sciences and Technology of China
V4G4	Visegrad GEN-4 Centre of Excellence
VTT	Valtion Teknillinen Tutkimuskeskus (Finland)
VUJE	Slovakian engineering company
WANO	World Association of Nuclear Operators
XJUT	Xi'an Jiaotong University (China)

