1.0 Introduction and General Description of the Plant

1.1 Introduction

AREVA NP submits for NRC review and approval under the provisions of 10 CFR 52, a Final Safety Analysis Report (FSAR) for an evolutionary pressurized water reactor, the U.S. EPR™ (herein after referred to as the U.S. EPR). AREVA NP requests NRC issuance of a Safety Evaluation Report (SER) and standard design certification for the U.S. EPR in accordance with 10 CFR 52, Subpart B. For the purpose of this document, only a single standard unit is considered. A combined license (COL) applicant that references the U.S. EPR design certification and proposes a multi-unit license application will provide the changes and additional information needed to license a multi-unit plant.

1.1.1 Plant Location

The U.S. EPR is to be located on a site which meets the parameters described in Chapter 2, "Site Characteristics." A COL applicant that references the U.S. EPR design certification will identify the specific plant site location.

1.1.2 Containment Type

The Containment Building for the U.S. EPR is part of an integrated structure called the Reactor Building. The Reactor Building consists of a cylindrical reinforced concrete outer Shield Building; a cylindrical, post-tensioned concrete inner Containment Building with a steel liner, and an annular space between the two buildings. The Shield Building is capable of protecting the Containment Building from external hazards.

1.1.3 Reactor Type

The U.S. EPR nuclear steam supply system is an AREVA NP-designed evolutionary pressurized water reactor.

1.1.4 Power Output

The U.S. EPR is designed for a rated core thermal power level of 4590 MW_t with a bounding secondary heat balance uncertainty of ± 22 MW_t. The nuclear steam supply system (NSSS) thermal power rating is about 4614 MW_t. The plant is designed to operate at a net electrical power output of approximately 1600 MW_e.

1.1.5 Schedule

A COL applicant that references the U.S. EPR design certification will provide the estimated schedules for completion of construction and commercial operation.

1.1.6 Format and Content

1.1.6.1 Regulatory Guide 1.206

To the extent practical, this document is written in accordance with the format and content of RG 1.206, Rev. 0, "Combined License Applications for Nuclear Power Plants (LWR Edition)," March 2007. While the purpose of this RG is to provide guidance regarding the information to be submitted in a combined license application, AREVA NP has structured the FSAR for the U.S. EPR to be consistent to the extent practical with the format and content that would be expected for a COL applicant. Because the Standard Review Plan (NUREG-0800) was revised to be consistent with the guidance provided in RG 1.206, this should facilitate the NRC review of the FSAR and a COL application that references the U.S. EPR design certification.

1.1.6.2 Standard Review Plan

NUREG-0800 is used as guidance in preparing the content for individual sections of this document. Conformance with the Standard Review Plan is addressed in Section 1.9.

1.1.6.3 Text, Tables and Figures

Tables and figures are identified by the section or subsection in which they appear and are numbered sequentially. For example, Table 1.1-1 and Figure 1.1-1 would be the first table and figure appearing in Section 1.1. Figures consist of diagrams, plots, pictures, graphs or other illustrations. Tables and figures are located at the end of the applicable section or subsection immediately following the text.

1.1.6.4 Numbering of Pages

Pages are numbered sequentially within each section or subsection.

1.1.6.5 Proprietary Information

This document contains no proprietary information. As noted in Section 1.6, the FSAR references topical and technical reports that contain proprietary information. In these cases, in Table 1.6-1, the non-proprietary version of the topical or technical report is also identified.

1.1.6.6 Acronyms

The list of acronyms used in this document is provided in Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions.

1.1.6.7 COL Information Items

A list of COL information items to be addressed by an applicant that references the U.S. EPR design certification is provided in Section 1.8.

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 1 of 20

Acronym	Description
12UPS	12-Hour Uninterruptible Power Supply
AAC	Alternate AC (Source)
ABVS	Access Building Ventilation System
AC	Alternating Current
ACB	Access Building
ACT	Average Coolant Temperature
ACWS	Auxiliary Cooling Water System
A/D	Analog-to-Digital
ADL	Additional Dynamic Loads
AFWS	Auxiliary Feedwater System
AHU	Air Handling Unit
AHS	Air Humidification System
AIC	Ag-In-Cd (Alloy)
AICC	Adiabatic Isochoric Complete Combustion
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALARA	As Low As Reasonably Achievable
ALL	Allowable Load Limit
ALU	Actuation Logic Unit
ALWR	Advanced Light-Water Reactors
AMI	Accident Monitoring Instrumentation
AMS	Aeroball Measurement System
AO	Axial Offset
AOO	Anticipated Operational Occurrence
AOP	Abnormal Operating Procedure
APU	Acquisition and Processing Units
ARS	Amplified Response Spectra
ART	Adjusted Reference Temperature
ASEP	Accident Sequence Evaluation Program
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATWS	Anticipated Transient Without Scram

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 2 of 20

Acronym	Description
AU	Acquisition Unit
AVB	Anti-Vibration Bar
AVS	Annulus Ventilation System
AVT	All-Volatile Treatment
AWG	American Wire Gauge
AZI	Azimuthal Power Imbalance
B&W	Babcock & Wilcox
BACC	Boric Acid Corrosion Control
BAST	Boric Acid Storage Tank
BBC	Backup Bus Controller
BCMS	Boron Concentration Measurement System
BDBE	Beyond Design Basis Event
BISI	Bypassed and Inoperable Status Indication
BOC	Beginning of Cycle
BOP	Balance of Plant
BPV	Boiler and Pressure Vessel
BRL	Ballistic Research Laboratory
BTP	Branch Technical Position
BWR	Boiling Water Reactor
CAS	Compressed Air System
CAV	Cumulative Absolute Velocity
CBDTM	Cause-Based Decision Tree Method
CBV	Complete Breach of Vessel
CCF	Common-Cause Failure
CBVS	Containment Building Ventilation System
CCFL	Countercurrent Flow Limiting
CCFP	Conditional Containment Failure Probability
CCW	Component Cooling Water
CCWS	Component Cooling Water System
CDES	Core Damage End State
CDF	Core Damage Frequency
CDM	Certified Design Material
CDS	Coolant Degasification System

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 3 of 20

Acronym	Description
CE	Combustion Engineering
CET	Containment Event Tree
CEUS	Central Eastern United States
CFS	Condensate and Feedwater System
CGC	Combustible Gas Control
CGCS	Combustible Gas Control System
CH	Common Header
CHE	Closure Head Equipment
CHF	Critical Heat Flux
CHLA	Candidate High-Level Actions
CI	Conventional Island
CILRT	Containment Integrated Leakage Rate Test
CIS	Containment Isolation Signal
CIV	Containment Isolation Valve
CLCWS	Closed Cooling Water System
CMAA	Crane Manufacturers Association of America
CMF	Common Mode Failure
CMRS	Core Melt Retention System
CMSS	Core Melt Stabilization System
CMTR	Certified Material Test Report
CNI	Constrained Non-Informative Distribution
COL	Combined License
COLR	Core Operating Limits Report
COMS	Communication System
COTC	Core Outlet Thermocouple
CPD	Condensate Pump Discharge
CPR	Critical Power Ratio
CPS	Coolant Purification System
CRACS	Main Control Room Air Conditioning System
CRAVS	Control Room Area Ventilation System
CRC	Cyclic Redundancy Checks
CRDCS	Control Rod Drive Control System
CRDM	Control Rod Drive Mechanism

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 4 of 20

Acronym	Description
CRDMPSS	Control Rod Drive Mechanism Power Supply System
CRE	Control Room Envelope
CREF	Control Room Emergency Filtration
CRGA	Control Rod Guide Assembly
CS	Conventional Seismic
CSDRS	Certified Seismic Design Response Spectra
CSSS	Coolant Supply and Storage System
CT	Compact Tension
CTCS	Condenser Tube Cleaning System
CTS	Coolant Treatment System
CU	Control Unit
CVCS	Chemical and Volume Control System
CWPB	Circulating Water Pump Building
CWS	Circulating Water System
D-RAP	Design-Reliability Assurance Program
DAC	Design Acceptance Criteria
DAS	Diverse Actuation System
DBA	Design Basis Accident
DBE	Design Basis Event
DBPB	Design Basis Pipe Break
DBT	Design Basis Threat
DCH	Direct Containment Heating
DCS	Distributed Control System
DDT	Deflagration-to-Detonation Transition
DE	Dose Equivalent
DET	Decomposition Event Tree
DGAIES	Diesel Generator Air Intake and Exhaust System
DGCWS	Diesel Generator Cooling Water System
DGFOSTS	Diesel Generator Fuel Oil Storage and Transfer System
DGLS	Diesel Generator Lubricating (Oil) System
DGSAS	Diesel Generator Starting Air System
DLF	Dynamic Load Factor
DLS	Diesel Load Steps

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 5 of 20

Acronym	Description
DNB	Departure from Nucleate Boiling
DNBR	Departure from Nucleate Boiling Ratio
DOD	Department of Defense
DPD	Design Pressure Differential
DRB	Design Review Board
DSS	Diverse Scram System
DU	Drive Unit
DW	Dead Weight
DWDS	Demineralized Water Distribution System
DWS	Demineralized Water System
EAB	Exclusion Area Boundary
EAC	Emergency AC (Power System)
EAT	Emergency Auxiliary Transformer
EBA	Enriched Boric Acid
EBS	Extra Borating System
ECC	Emergency Core Cooling
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EDS	Electrical Distribution System
EFW	Emergency Feedwater
EFWS	Emergency Feedwater System
EH	Extra Hazard
EHV	Extra High Voltage
EIR	Engineering Information Record
EIS	Excore Instrumentation System
EL	External Loads
ELWR	Evolutionary Light Water Reactor
EMI	Electromagnetic Interference
EMC	Electromagnetic Compatibility
EOC	End-of-Cycle
EOF	Emergency Operations Facility
EOL	End of Life
EOP	Emergency Operating Procedure

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 6 of 20

Acronym	Description
EOT	Electric Overhead Traveling
EPG	Emergency Procedure Guideline
EPGB	Emergency Power Generating Building
EPGBVS	Emergency Power Generating Building Ventilation System
EPRI	Electric Power Research Institute
EPSS	Emergency Power Supply System
EPW	Explosion Pressure Wave
ERDS	Emergency Response Data System
ERF	Emergency Response Facility
ESD	Event Sequence Diagram
ESF	Engineered Safety Features
ESFAS	Engineered Safety Feature Actuation System
ESFS	Engineered Safety Features System
ESL	Equivalent Static Loads
ESW	Essential Service Water
ESWB	Essential Service Water Building (Consisting of ESWCT & ESWPB)
ESWCT(S)	Essential Service Water Cooling Tower (Structure)
ESWPB	Essential Service Water Pump Building
ESWPBVS	Essential Service Water Pump Building Ventilation System
ESWS	Essential Service Water System
ETAP	Electrical Transient Analyzer Program
EUPS	Class 1E Uninterruptible Power Supply
EUR	European Utility Requirements
EVA	Early Valve Actuation
FA	Fire Area
FAC	Flow Assisted Corrosion
FAMOS	Fatigue Monitoring System
FATT	Fracture Appearance Transition Temperature
FB	Fuel Building
FBVS	Fuel Building Ventilation System
FCI	Fuel-Coolant Interaction
FCM	Fuel Centerline Melt
FDD	Flow Distribution Device

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 7 of 20

Acronym	Description
FDS	Fire Detection System
FEM	Finite Element Model
FFT	Fast Fourier Transform
FHS	Fuel Handling System
FIRS	Foundation Input Response Spectra
Fire-PRA	Probabilistic Fire Risk Assessment
FIV	Flow Induced Vibration
FL	Full Load
FLCV	Full Load Control Valve
FMEA	Failure Modes and Effects Analysis
FML	Fluid Momentum Loads
FPA	Fire Protection Analysis
FPCPS	Fuel Pool Cooling and Purification System
FPCS	Fuel Pool Cooling System
FPP	Fire Protection Program
FPPS	Fuel Pool Purification System
FPS	Fire Protection System
FR	Fuel Rack
FRA	Functional Requirements Analysis
FSAR	Final Safety Analysis Report
FTTF	Fuel Transfer Tube Facility
FUM	Function Modules
FV	Fussel-Vesely
FVW	Fussel-Vesely Worth
FWH	Feedwater Heater
FWIV	Feedwater Isolation Valve
FWLB	Feedwater Line Break
FWS	Feedwater System
GDC	General Design Criteria
GFES	Gaseous Fire Extinguishing System
GMRS	Ground Motion Response Spectra
GPS	Global Positioning System
GSI	Generic Safety Issue

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 8 of 20

Acronym	Description
GTAW	Gas Tungsten Arc Welding
GW	Gateway
GWMS	Gaseous Waste Management System
GWPS	Gaseous Waste Processing System
HA	Human Action
HAZ	Heat Affected Zone
HCF	Hot Channel Factors
HCLPF	High Confidence, Low Probability of Failure
HCPL	High Core Power Level
HCR	Human Cognitive Reliability
HED	Human Engineering Discrepancy
HELB	High Energy Line Break
HEM	Homogeneous Equilibrium Model
HEP	Human Error Probability
HEPA	High Efficiency Particulate Air
HF	High Frequency
HFE	Human Factors Engineering
HFP	Hot Full Power
HFT	Hot Functional Test
HGDS	Hydrogen Gas Distribution System
HI	Hydraulics Institute
HL	High Load Line
HLHE	Heavy Load Handling Equipment
HLMS	Humidity Leakage Monitoring System
HLPD	High Linear Power Density
HMD	Hydrogen Mixing Damper
HMI	Human Machine Interface
HMP	High Mechanical Performance
HMS	Hydrogen Monitoring System
HP	High Pressure
HPME	High-Pressure Melt Ejection
HRA	Human Reliability Analysis
HRR	Heat Release Rate

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 9 of 20

Acronym	Description
HRS	Hydrogen Reduction System
HSI	Human System Interface
HSS	High Safety Significance
HTP	High Thermal Performance
HVAC	Heating, Ventilation, Air Conditioning
HX	Heat Exchanger
HZP	Hot Zero Power
I&C	Instrumentation and Controls
I&CSC	Instrumentation and Control Service Center
IBA	Intermediate Pipe Break Accident
IBC	International Building Code
ICIS	Incore Instrumentation System
ICS	Interior Concrete Structure
ID	Inner Diameter
IDCOR	Industry Degraded Core Rulemaking
IEEE	Institute of Electrical and Electronics Engineers
IGSCC	Intergranular Stress Corrosion Cracking
INPO	The Institute of Nuclear Power Operations
I/O	Input/Output
IOZ	Inorganic Zinc Coating
IP	Intermediate Pressure
IPB	Isolated Phase Bus
IPE	Individual Plant Examinations
IRD	Intermediate Range Detectors
IRWST	In-Containment Refueling Water Storage Tank
ISI	Inservice Inspection
ISLOCA	Intersystem Loss of Coolant Accident
ISM	Independent Support Motion
IST	Inservice Testing
ISRS	In-Structure Response Spectra
IOPSV	Inadvertent Opening of a Pressurizer Safety Valve
ITAAC	Inspections, Tests, Analyses, and Acceptance Criteria
ITP	Initial Test Program

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 10 of 20

Acronym	Description
JIC	Joint Information Center
KKS	Kraftwerks Kennzeichen System
KSA	Knowledge, Skill, and Attribute
LAN	Local Area Network
LBB	Leak-Before-Break
LBD	Licensing Basis Documentation
LBLOCA	Large Break Loss of Coolant Accident
LBOP TR	Loss of Balance of Plant
LC	Load Center
LCO	Limiting Conditions for Operation
LCS	Local Control Stations
LHSI	Low Head Safety Injection
LL	Low Load Line
LLCV	Low Load Control Valve
LLRT	Local Leakage Rate Test
LLRW	Low Level Radioactive Waste
LMP	Level Monitoring Probe
LNEP	Loss of Non-Emergency Power
LNFF	Loss of Normal Feedwater Flow
LOCA	Loss of Coolant Accident
LOCF	Loss of Coolant Flow
LOCV	Loss of Condenser Vacuum
LOEL	Loss of External Load
LOOP	Loss of Offsite Power
LOOP PL	Loss of Offsite Power with a Low Pressure End State
LOOP SS	Loss of Offsite Power with Seal LOCA
LOOP TR	Loss of Offsite Power with a High Pressure End State
LP	Low Pressure
LPD	Linear Power Density
LPMS	Loose Parts Monitoring System
LPSD	Low Power Shutdown
LPZ	Low Population Zone
LRF	Large Release Frequency

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 11 of 20

Acronym	Description
LSP	Lower Support Plate
LSSS	Limiting Safety System Setting
LTL	Lower Tolerance Limit
LTOP	Low Temperature Overpressure Protection
LUHS	Loss of Ultimate Heat Sink
LWR	Light Water Reactor
MAAP	Modular Accident Analysis Program
MCC	Motor Control Center
MCCI	Molten Corium-to-Concrete Interaction
MCES	Main Condenser Evacuation System
MCL	Main Coolant Loop
MCR	Main Control Room
MDNBR	Minimum Departure from Nucleate Boiling Ratio
MFW	Main Feedwater
MFWFLCV	Main Feedwater Full Load Control Valve
MFWFLIV	Main Feedwater Full Load Isolation Valve
MFWIV	Main Feedwater Isolation Valve
MFWLB	Main Feedwater Line Break
MFWLLCV	Main Feedwater Low Load Control Valve
MFWLLIV	Main Feedwater Low Load Isolation Valve
MFWVLLCV	Main Feedwater Very Low Load Control Valve
MFWVLLIV	Main Feedwater Very Low Load Isolation Valve
MFWS	Main Feedwater System
MFWSVS	Main Feedwater System Valve Station
MGL	Multiple Greek Letter
MHSI	Medium Head Safety Injection
MMC	Metal Matrix Composite
MOV	Motor Operated Valve
MR	Maintenance Rule
MS	Main Steam
MSB	Main Steam Bypass
MSI	Monitoring Service Interface
MSIV	Main Steam Isolation Valve

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 12 of 20

Acronym	Description
MSIVC	Main Steam Isolation Valve Closure
MSL	Main Steam Line
MSLB	Main Steam Line Break
MSR	Moisture Separator Reheater
MSRCV	Main Steam Relief Control Valve
MSRIV	Main Steam Relief Isolation Valve
MSRT	Main Steam Relief Train
MSRV	Main Steam Relief Valve
MSS	Main Steam System
MSSV	Main Steam Safety Valve
MSU	Main Step Up (Transformer)
MSVS	Main Steam Valve Station
MSWCV	Main Steam Warming Control Valve
MSWIV	Main Steam Warming Isolation Valve
MTC	Moderator Temperature Coefficient
MTTR	Mean Time to Repair
MV	Medium Voltage
MW	Mega Watts
NAB	Nuclear Auxiliary Building
NABVS	Nuclear Auxiliary Building Ventilation System
NAT	Normal Auxiliary Transformer
NDE	Non-Destructive Examination
NDL	Nuclear Data Link
NDTT	Nil Ductility Transition Temperature
NEMA	National Electrical Manufacturers Association
NFE	New Fuel Elevator
NFPA	National Fire Protection Association
NFSF	New Fuel Storage Facility
NHS	Normal Heat Sink
NI	Nuclear Island
NIDVS	Nuclear Island Drain/Vent System
NIS	Nuclear Island Subsystem
NLO	Non-Licensed (Equipment) Operator

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 13 of 20

Acronym	Description
NNS	Non-Nuclear Safety
NOPD	Normal Operating Pressure Differential
NPS	Nominal Pipe Size
NPSH	Net Positive Suction Head
NPSS	Normal Power Supply System
NR	Narrow Range
NSAC	Nuclear Safety Analysis Center
NSM	Non-Self Monitored
NSS	Nuclear Sampling System
NSSS	Nuclear Steam Supply System
NUMARC	Nuclear Utilities Management and Resources Council
NUPS	Non-Class 1E UPS
OBE	Operating Basis Earthquake
OCWS	Operational Chilled Water System
OD	Outside Diameter
OER	Operating Experience Review
OH	Ordinary Hazard
OM	Operation & Maintenance
OPP	Overpressure Protection
ORE	Operator Reactor Experiments
OSC	Operational Support Center
OSSA	Operating Strategies for Severe Accidents
PA	Postulated Accident
PABX	Private Automatic Branch Exchange
PACS	Priority and Actuator Control System
PAM	Post-Accident Monitoring
PAR	Passive Autocatalytic Recombiner
PAS	Process Automation System
PC	Personal Computer
PCI	Pellet to Clad Interaction
PCD	Partial Cool Down
PDD	Power Density Detector
PDS	Pressurizer (or Primary) Depressurization System

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 14 of 20

Acronym	Description
PE	Phenomenological Evaluation
PFAS	Plant Fire Alarm System
PGA	Peak Ground Acceleration
PI	Panel Interface
PICS	Process Information and Control System
PIE	Post-Irradiation Examination
P&ID	Piping and Instrumentation Diagram
PM	Preventive Maintenance
PMF	Probable Maximum Flood
PMP	Probable Maximum Precipitation
PMWP	Probable Maximum Winter Precipitation
POP	Plant Overview Panel
POS	Plant Operating States
PPS	Preferred Power Supply
PRA	Probabilistic Risk Assessment
PRD	Power Range Detector
PRT	Pressurizer Relief Tank
PS	Protection System
PSF	Performance Shaping Factors
PSRV	Pressurizer Safety Relief Valve
PST	Preservice Test
PSTN	Public Switched Telephone Network
PSV	Pressurizer Safety Relief Valve (Chapter 19 only)
PT	Partial Trip
PTF	Partial Trip Function
PTLR	Pressure-Temperature Limitations Report
PTRD	Plant Technical Requirements Document
PV	Pressure Velocity
PSWS	Potable and Sanitary Water System
PWR	Pressurized Water Reactor
PWSCC	Primary Water Stress Corrosion Cracking
PZR	Pressurizer
QA	Quality Assurance

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 15 of 20

Acronym	Description
QAP	Quality Assurance Program
QD	Quick Disconnect
QDS	Qualified Display System
RAI	Request for Additional Information
RAP	Reliability Assurance Program
RAU	Remote Acquisition Units
RAW	Risk Achievement Worth
RB	Reactor Building
RBIS	Reactor Building Internal Structures
RBWMS	Reactor Boron and Water Makeup System
RC	Release Category
RCA	Radiologically Controlled Area
RCB	Reactor Containment Building
RCCA	Rod Cluster Control Assembly
RCDT	Reactor Coolant Drain Tank
RCL	Reactor Coolant Loop
RCP	Reactor Coolant Pump
RCPB	Reactor Coolant Pressure Boundary
RCS	Reactor Coolant System
RCSL	Reactor Control, Surveillance and Limitation
RFI	Radio Frequency Interference
RG	Regulatory Guide
RHR	Residual Heat Removal
RHRS	Residual Heat Removal System
RLE	Review Level Earthquake
RM	Refueling Machine
RMI	Reflective Metallic Insulation
$RMS_{(EQUATIONS)}$	Root Mean Square
$RMS_{(TEXT)}$	Radiation Monitoring System
RPMS	Rod Position Measurement System
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
RPVDT	Reactor Pressure Vessel Dome Temperature

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 16 of 20

Acronym	Description
RPVL	Reactor Pressure Vessel Level
RR	Rod Return
RRS	Required Response Spectra
RS	Radwaste Seismic
RSB	Reactor Shield Building
RSS	Remote Shutdown Station
RT	Reactor Trip
RT_{NDT}	Reference Temperature
RTNSS	Regulatory Treatment of Non-Safety Systems
RTP	Rated Thermal Power
RV	Reactor Vessel
RWB	Radioactive Waste (Processing) Building
RWBVS	Radioactive Waste Building Ventilation System
RWSS	Raw Water Supply System
SA	Severe Accident
SADV	Severe Accident Depressurization Valves
SAFDL	Specified Acceptable Fuel Design Limits
SAHRS	Severe Accident Heat Removal System
SAM	Severe Accident Management
SAMDA	Severe Accident Mitigation Design Alternatives
SAMG	Severe Accident Mitigation Guideline
SAMS	Sampling Activity Monitoring System
SAS	Safety Automation System
SASS	Severe Accident Sampling System
SAT	Systematic Approach to Training
SB	Safeguard Building
SBA	Small Pipe Break Accident
SBLOCA	Small Break Loss of Coolant Accident
SBO	Station Blackout
SBODG	Station Blackout Diesel Generator
SBORVS	Station Blackout Room Ventilation System
SBVS	Safeguard Building (Controlled Area) Ventilation System
SBVSE	Safeguard Building Ventilation System (Electrical)

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
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Acronym	Description
SCBA	Self-Contained Breathing Apparatus
SCC	Stress Corrosion Cracking
SCCA	Stationary Control Component Assembly
SCDS	Signal Conditioning and Distribution System
SCS	Smoke Confinement System
SCT	Staircase Tower
SCWS	Safety Chilled Water System
SDOF	Single-Degree-of-Freedom
SDRD	System Design Requirements Document
SDD	System Design Description
SECSS	Secondary Sampling System
SEL	Seismic Equipment List
SER	Safety Evaluation Report
SEWSS	Seal Water Supply System
SFM	Spent Fuel Machine
SFCTF	Spent Fuel Cask Transfer Facility
SFCTM	Spent Fuel Cask Transfer Machine
SFP	Spent Fuel Pool
SFPC	Spent Fuel Pool Cooling
SFPE	Society of Fire Protection Engineers
SFSF	Spent Fuel Storage Facility
SG	Steam Generator
SGB	Steam Generator Blowdown
SGBS	Steam Generator Blowdown System
SGTR	Steam Generator Tube Rupture
SHS	Space Heating System
SI	Safety Injection
SIAS	Safety Injection Actuation System
SICS	Safety Information and Control System
SIM	Signal Modules
SIS	Safety Injection System
SIT	Structural Integrity Test
SLBI	Steam Line Break Inside (Containment)

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
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Acronym	Description
SLOCA	Small Loss of Coolant Accident
SLOCA SL	Small LOCA (2 to 8.5-inch Diameter)
S LOOP	Seismic Loss of Offsite Power
SL	Surge Line
$SL_{(CHAPTER\ 16\ ONLY)}$	Safety Limit
SM	Self Monitored
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SMS	Seismic Monitoring System
SPAR-H	Standardized Plant Analysis Risk-Human Reliability Analysis
SPDS	Safety Parameter Display System
SPND	Self-Powered Neutron Detector
SQDP	Seismic Qualification Data Package
SRI	Stanford Research Institute
SRM	Staff Requirement Memorandum
SRO	Senior Reactor Operator
SRP	Standard Review Plan
SRSS	Square Root of the Sum of the Squares
SS	Shift Supervisor
SSC	Structures, Systems and Components
SSE	Safe Shutdown Earthquake
SSI	Soil-Structure Interaction
S SLOCA	Seismic Small Loss of Coolant Accident
SSS	Startup and Shutdown System
SSSI	Structure-Soil-Structure Interaction
SSSS	Standstill Seal System
STA	Shift Technical Advisor
SU	Service Unit
SWBVS	Switchgear Building Ventilation System, Turbine Island
SWCCF	Software Common Cause Failure
SWMS	Solid Waste Management System
SWSC	Service Water System (Conventional)
SWYD	Switchyard
T_{AVG}	Temperature (Average)

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
Sheet 19 of 20

Acronym	Description
TA	Task Analysis
TAF	Top of Active Fuel
TB	Turbine Building
TBCCWS	Turbine Building Closed Cooling Water System
TBPD	Turbine Building Plant Drainage
TBS	Turbine Bypass System
TBVS	Turbine Building Ventilation System
TCV	Turbine Control Valve
TD	Theoretical Density
TG	Turbine Generator
TG I&C	Turbine Generator Instrumentation and Controls
TGSCC	Transgranular Stress Corrosion Cracking
TGSS	Turbine Gland Sealing System
TH	Thermo-Hydraulics
THD	Total Harmonic Distortion
THERP	Technique for Human Error Rate Prediction
THL	Transient Hazard Level
TI	Turbine Island
TLOCC	Total Loss of Cooling Chain
TMI	Three Mile Island
TPA	Thimble Plug Assembly
TRS	Test Response Spectra
TSC	Technical Support Center
TSP	Tube Support Plate
TSI	Turbine Supervisory Instrument (System)
TSV	Turbine Stop Valve
TT	Turbine Trip
TXS	Teleperm XS
UCP	Upper Core Plate
UHRS	Uniform Hazard Response Spectra
UHS	Ultimate Heat Sink
ULD	Uncontrolled Level Drop
UPS	Uninterruptible Power Supply

Table 1.1-1—U.S. EPR FSAR Acronyms and Descriptions
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Acronym	Description
USI	Unresolved Safety Issue
USL	Upper Subcritical Limit
USM	Uniform Support Motion
USP	Upper Support Plate
UTL	Upper Tolerance Limit
UTM	Universal Transverse Mercator
VCT	Volume Control Tank
VHE	Vessel Head Equipment
VLLCV	Very Low Load Control Valve
VMS	Vibration Monitoring System
VRVS	Valve Room Ventilation System
VSTK	Vent Stack
VWO	Valves Wide Open
V&V	Verification and Validation
WB	Waste Building
WR	Wide Range
ZPA	Zero Period Acceleration