

**Comanche Peak Nuclear Power Plant, Units 3 & 4
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CHAPTER 1

INTRODUCTION AND GENERAL DESCRIPTION OF THE PLANT

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ACRONYMS AND ABBREVIATIONS

A/B	auxiliary building
AAC	alternate alternating current
AAS	automatic actuation system
ABDP	A/B equipment drain sump pump
ABVS	auxiliary building ventilation system
ac	alternating current
AC/B	access building
AC/PS	ac power system
ACC	accumulator
ACCW	auxiliary component cooling water
ACCWS	auxiliary component cooling water system
ACI	American Concrete Institute
ACL	accident class
ACNSPDS	ac non-safety power distribution system
ADS	automatic depressurization system
AECS	auxiliary equipment control system
AEES	annulus emergency exhaust system
AFC	automatic frequency control
AFD	axial flux difference
Ag-In-Cd	silver-indium-cadmium
AHU	air handling unit
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALARA	as low as reasonably achievable
ALHR	average linear heat rate
ALR	automatic load regulator
ALWR	advanced light-water reactor
AMSAC	ATWS mitigation system actuation circuitry
ANL	Argonne National Laboratory
ANS	American Nuclear Society
ANSI	American National Standards Institute
AO	axial offset
AOO	anticipated operational occurrence
AOP	abnormal operating procedure
API	American Petroleum Institute
APWR	advanced pressurized water reactor

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ACRONYMS AND ABBREVIATIONS (Continued)

ARMS	area radiation monitoring system
ARO	all rods out
ARS	acceleration response spectra
ASCE	American Society of Civil Engineers
ASD	Allowable Stress Design
ASEP	accident sequence evaluation program
ASME	American Society of Mechanical Engineers
ASSS	auxiliary steam supply system
AST	alternative source term
ASTM	American Society for Testing and Materials
ATC	automatic turbine control
ATWS	anticipated transient without scram
AVR	auto voltage regulator
AVR/ALR	auto voltage regulator/automatic load regulator system
AVT	all volatile treatment
AWS	American Welding Society
B.A.	boric acid
B/A	boric acid
BA	burnable absorber
BAC	bounding analysis curve
BAP	boric acid transfer pump
BAS	boric acid system
BAT	boric acid tank
BBR	BBR VT International Ltd
BD	blowdown
BDB	beyond design basis
BE	best estimate
BEF	best estimate flow
BHEP	basic human error probability
BHN	Brinell hardness number
BISI	bypassed and inoperable status indication
BNL	Brookhaven National Laboratory
BOC	beginning-of-cycle
BOL	beginning-of-life
BOP	balance of plant
BRL	Ballistics Research Laboratory

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ACRONYMS AND ABBREVIATIONS (Continued)

BRS	boron recycle system
BTP	branch technical position
BTU	british thermal unit
BWR	boiling water reactor
BWROG	boiling water reactor owners' group
C/V	containment vessel
CAGI	Compressed Air and Gas Institute
CAGS	compressed air and gas system
CAMS	containment atmosphere monitoring system
CAOC	constant axial offset control
CAS	central alarm station
CASS	compressed air supply system
CAV	cumulative absolute velocity
CB	circuit breaker
CBP	computer-based procedure
CBS	condenser water box vacuuming priming system
CC	control cubicle
CCDP	conditional core damage probability
CCF	common cause failure
CCFP	conditional containment failure probability
CCVT	coupling capacitor voltage transformer
CCTV	closed captioned television
CCW	component cooling water
CCWP	component cooling water pump
CCWS	component cooling water system
CCWT	component cooling water train
CD	complete dependence
CDF	core damage frequency
CDR	Certified Design Report
CDS	condensate system
CEDE	committed effective dose equivalent
CET	containment event tree
CF	core flooding
CFCS	containment fan cooler system
CFD	computational fluid dynamics
CFR	Code of Federal Regulations

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ACRONYMS AND ABBREVIATIONS (Continued)

CFS	condensate and feedwater system
CGS	compressed gas supply system
CHF	critical heat flux
CHP	charging pump
CHR	cooling water/hot water return
CHS	containment hydrogen monitoring and control system
CI	containment isolation
CIS	containment internal structure
CIV	containment isolation valve
CMMS	Computerized Maintenance Management System
CMT	chemical mixing tank
CMTR	Certified Material test Report
COC	certificate of compliance
COL	Combined License
COLA	Combined License Application
COLR	core operating limits report
COMM	communication
COT	channel operational test
CPET	containment phenomenological event tree
CPG	containment performance goal
CPNPP	Comanche Peak Nuclear Power Plant
CPS	condensate polishing system
CPU	central processing unit
Cr	chromium
CRDM	control rod drive mechanism
CRDMCS	control rod drive mechanism control system
CRDS	control rod drive system
CRE	control room envelope
CRHS	control room habitability system
CRMP	configuration risk management program
CS	containment spray
CS/RHR	containment spray/residual heat removal
CS/RHRS	containment spray/residual heat removal system
CSA	channel statistical accuracy
CSDRS	certified seismic design response spectra
CSET	containment system event tree

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ACRONYMS AND ABBREVIATIONS (Continued)

CSNI	Committee on the Safety of Nuclear Installations
CSS	containment spray system
CSTF	condensate storage and transfer facilities
CT	compact tension
CTS	condenser tube cleaning equipment
CTW	cooling tower
CV	control valve
CVCS	chemical and volume control system
CVDP	C/V reactor coolant drain pump
CVDT	containment vessel reactor coolant drain tank
CVN	charpy v-notch
CVTR	Carolinas-Virginia Tube Reactor
CVVS	containment ventilation system
CWS	circulating water system
DAAC	diverse automatic actuation cabinet
DAS	diverse actuation system
DBA	design-basis accident
DBE	design-basis event
DBFL	design-basis flooding level
DBPB	design-basis pipe break
dc	direct current
DC/PS	dc power system
DCD	Design Control Document
DCH	direct containment heating
DCS	Data communication system
DDE	deep dose equivalent
DDT	deflagration to detonation transition
DE	Dose equivalent
DEGB	double-ended guillotine break
DEH	digital electro-hydraulic
DF	decontamination factor
DFR	digital fault recorder
DHP	diverse HSI panel
DICS	digital instrumentation and control system
DIF	dynamic impact factor
DL	disconnect link

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ACRONYMS AND ABBREVIATIONS (Continued)

DLF	dynamic load factor
DMIMS	digital metal impact monitoring system
DNB	departure from nucleate boiling
DNBR	departure from nucleate boiling ratio
DOF	degree of freedom
DOP	dioctyl phthalate
DOT	Department of Transportation
D-RAP	design reliability assurance program
DRS	storm drain system
DS	decontamination system
DSS	digital safety system
DTM	design team manager
DV	depressurization valve
DVI	direct vessel injection
DWS	demineralized water system
DWTSS	demineralized water transfer and storage system
E/O	electrical to optical (or optical to electrical)
EAB	exclusion area boundary
EAC/PSS	emergency ac power supply system
EARWS	evacuation alarm and remote warning system
ECC	emergency core cooling
ECCS	emergency core cooling system
ECOM	error of commission
ECP	electrical corrosion potential
ECS	emergency communications system
ECT	eddy current test
ECWS	essential chilled water system
EDE	effective dose equivalent
EDS	equipment drain system
EF	error factor
EFPD	effective full power days
EFH	Energy Future Holdings Corp.
EFW	emergency feedwater
EFWPAVS	emergency feedwater pump area HVAC system
EFWS	emergency feedwater system
EH/C	electric heating coil

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ACRONYMS AND ABBREVIATIONS (Continued)

EHGS	turbine electro-hydraulic governor control system
EIF	electrical interface system
ELS	emergency letdown system
EMI	electromagnetic interference
EOC	end-of-cycle
EOF	emergency operations facility
EOL	end-of-life
EOM	error of omission
EOP	emergency operating procedure
EOST	electrical overspeed trip device
EPG	emergency procedure guideline
EPRI	Electric Power Research Institute
EPS	emergency power source
EQ	environmental qualification
EQDP	equipment qualification data package
EQSDS	equipment qualification summary data sheet
ERAC	electrical rigid aluminum conduit
ERCOT	Electric Reliability Council of Texas
ERDA	Energy Research and Development Administration (now U.S. DOE)
ERDS	emergency response data system
ERSC	electrical rigid steel conduit
ESF	engineered safety features
ESFAS	engineered safety features actuation system
ESFVS	engineered safety features ventilation system
ESLS	electrical system logic system
ESP	early site permit
ESQDSR	Equipment Qualification Data Summary Report
ESQR	Equipment Seismic Qualification Report
ESW	essential service water
ESWP	essential service water pump
ESWPT	essential service water pipe tunnel
ESWS	essential service water system
ESX	ex-vessel steam explosion
ET	event tree
ETAP	Electrical Transient Analyzer Program

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ACRONYMS AND ABBREVIATIONS (Continued)

ETSB	effluent treatment system branch
EV	elevator
EX	excitation transformer
EZB	exclusion zone boundary
FA	function allocation
FAB	feed and bleed
FAC	flow-accelerated corrosion
FATT	fracture appearance transit temperature
FCV	feedwater control valve
FDS	fire detection systems
FE	finite element
Fe	iron
FEM	finite element method
FHA	fire hazard analysis
FHS	fuel handling system
FIRS	foundation input response spectra
FLB	feedwater line break
FLML	failure to maintain water level
FMEA	failure modes and effects analysis
FO	fiber-optic
FP	fission product
FPP	fire protection program
FPS	fire protection system
FR	fire-rated
FRA	functional requirements analysis
FS	fuel system
FSAR	Final Safety Analysis Report
FSHS	fuel storage and handling system
FSS	fire protection water supply system
FT	fault tree
FTS	fuel transfer system
FV	Fussell Vesely
FWW	Fussell Vesely worth
FW	feedwater
FWLB	feedwater line break

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ACRONYMS AND ABBREVIATIONS (Continued)

FWS	feedwater system
g	gravity
GA	general arrangement
Gd ₂ O ₃	gadolinia
GDC	General Design Criteria
GFO	governor free operation
GIB	gas-insulated bus
GIS	gas-insulated switchgear
GLBS	generator load break switch
GMAW	gas metal arc welding
GMRS	ground motion response spectra
GOMS	goals, operators, methods, and selection
GS	ground switch
GSS	gland seal system
GT/B	gas turbine building
GT/GS	gas turbine generator system
GTAW	gas tungsten arc welding
GTG	gas turbine generator
GTPS	generator transformer protection system
GWMS	gaseous waste management system
HA	human action
HAZ	heat-affected zone
HCl	hydrochloric acid
HCLPF	high confidence of low probability of failure
HCS	generator hydrogen and CO ₂ system
HD	high dependence
HDSR	historical data storage and retrieval
HE	human error
HED	human engineering discrepancy
HEI	Heat Exchange Institute
HELB	high-energy line breaks
HEP	human error probability
HEPA	high-efficiency particulate air
HF	human factors
HFE	human factors engineering
HFEVMTM	HFE V&V team manager
HFP	hot full power

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ACRONYMS AND ABBREVIATIONS (Continued)

HHI	high head injection
HHIS	high-head injection system
HI	hydriodic acid
HIS	hydrogen ignition system
HJTC	heated junction thermocouple
HMS	hydrogen monitoring system
HNO ₃	nitric acid
HPME	high pressure melt ejection
HPT	high-pressure turbine
HRA	human reliability analysis
HRC	Rockwell C hardness
HSI	human-system interface
HSIS	human-system interface system
HSLA	high strength low alloy
HSS	high safety significance
HSSC	highly safety significant component
HT	holdup tank
HV	high voltage
HVAC	heating, ventilation, and air conditioning
HX	heat exchanger
HZP	hot zero power
I&C	instrumentation and control
I/F	interface
I/O	input/output
IAS	instrument air system
IBC	International Building Code
ICC	inadequate core cooling
ICCC	incore control component
ICDP	incremental core damage probability
ICIGS	incore instrument gas purge system
ICIS	incore instrumentation system
ICS	instrumentation and control system
IDLH	immediately dangerous to life and health
IE	initiating event
IEEE	Institute of Electrical and Electronics Engineers
IFPRA	Internal flood probalistic risk assessment

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ACRONYMS AND ABBREVIATIONS (Continued)

IG	implementation guideline
IGA	intergranular attack
IHL	induced hot leg rupture
ILRT	integrated leak rate test
INPO	Institute of Nuclear Power Operations
IOE	industry operating experience
IPB	isolated phase busduct
IPE	individual plant examination
ISA	Instrumentation, Systems, and Automation Society
ISI	inservice inspection
ISLH	inservice leak and hydrostatic
ISM	independent support motion
ISO	International Standards Organization
ISRS	in-structure response spectra
IST	inservice testing
ITAAC	inspections, tests, analyses, and acceptance criteria
ITC	isothermal temperature coefficient
ITP	initial test program
ITS	industrial television system
ITV	industrial television
IV	intercept valve
JAERI	Japan Atomic Energy Research Institute
JAPEIC	Japan Power Engineering and Inspection Corporation
J-APWR	Japanese - Advanced Pressurized Water Reactor
JNES	Japan Nuclear Energy Safety Organization
JRC	Joint research Centre
JSME	Japan Society of Mechanical Engineers
KZK	Kernforschungszentrum Karlsruhe
LB	lower bound
LBB	leak before break
LBLOCA	large break loss of coolant accident
LC	load center
LCO	limiting condition for operation
LCS	local control station
LD	low dependence
LDP	large display panel

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ACRONYMS AND ABBREVIATIONS (Continued)

LER	licensee event report
LERF	large early release frequency
LHR	linear heat rate
LHSI	low-head safety injection
LiOH	lithium hydride
LMS	leak monitoring system
LOCA	loss-of-coolant accident
LOESW	loss of essential service water
LOF	left-out-force
LOFF	loss of feedwater flow
LOOP	loss of offsite power
LOP	loss of power
LPDS	large panel display (LPD) system
LPMS	loose parts monitoring system
LPSD	low-power and shutdown
LPT	low-pressure turbine
LPZ	low-population zone
LRB	last rotation blade
LRF	large release frequency
LRT	leakage rate testing
LS	lighting system
LSS	low safety significance
LSSS	limiting safety system settings
LTOP	low temperature overpressure protection
Luminant	Luminant Generation Company LLC
LV	low voltage
LWMS	liquid waste management system
LWR	light-water reactor
M signal	main control room isolation signal
M/D	motor-driven
M/G	motor generator
MAAP	modular accident analysis program
MACCS2	MELCOR accident Consequence Code system 2
MCC	motor control center
MCCB	molded case circuit breaker
MCCI	molten core concrete interaction
MCES	main condenser evacuation system

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ACRONYMS AND ABBREVIATIONS (Continued)

MCP	main coolant piping
MCR	main control room
MCREFS	main control room emergency filtration system
MCRVS	main control room HVAC system
MD	movable neutron detector
MDF	mechanical design flow
MELB	moderate-energy line break
MELCO	Mitsubishi Electric Corporation
MFBRV	main feedwater bypass regulation valve
MFCV	main feedwater check valve
MFIV	main feedwater isolation valve
MFRV	main feedwater regulation valve
MFW	main feedwater
MFWS	main feedwater system
MSDIV	main steam drain line isolation valve
MG	main generator
MGL	multiple greek letter
MHI	Mitsubishi Heavy Industries, Ltd.
MLOCA	medium pipe break LOCA
MLS	maintenance lifting system
MMF	minimum measured flow
MMI	man-machine-interface
MN	mega Newton
MNES	Mitsubishi Nuclear Energy Systems, Inc.
MoS2	molybdenum disulfide
MOST	mechanical overspeed trip devices (turbine)
MOV	motor operated valve
MS	main steam
MSBIV	main steam bypass isolation valve
MSCV	main steam check valve
MSDV	main steam depressurization valve
MSFWS	main steam and feedwater system
MSIV	main steam isolation valve
MSLB	main steam line break
MS/R	moisture separator reheater

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ACRONYMS AND ABBREVIATIONS (Continued)

MSR	maximum steaming rate
MSRV	main steam relief valve
MSRVBV	main steam relief valve block valve
MSS	main steam supply system
MSS-SP	Manufacturer Standardization Society-Standard Practice
MSSV	main steam safety valve
MT	main transformer
MTC	moderator temperature coefficient
MTCDS	main turbine control and diagnostic system
MTCV	main turbine control valves
MTS	main transmission system
MTSV	main turbine stop valve
MTTR	mean time to repair
MV	medium voltage
N Center	Nuclear Energy Systems Engineering Center
N/A	not applicable
N/ELS	normal/emergency lighting system
NaTB	sodium tetraborate decahydrate
NCIG	National Construction Issues Group
NDE	nondestructive examination
NDRC	National Defense Research Committee
NDS	non-radioactive drain system
NDTT	nil ductility transition temperature
NEC	National Electric Code
NEI	Nuclear Energy Institute
NEMA	National Electrical Manufacturer Association
NESH	Nuclear Energy Systems Headquarters
NFPA	National Fire Protection Association
NFR	new fuel rack
NGR	neutral grounding resistor
NGVD 29	National Geodetic Vertical Datum of 1929
NGHS	noble gas holdup system
NIS	nuclear instrumentation system
NIST	National Institute of Standards and Technology
NLS	normal lighting system

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ACRONYMS AND ABBREVIATIONS (Continued)

non-ECWS	non-essential chilled water system
non-ESW	non-essential service water
NPGS	nuclear power generating stations
NPS	nominal pipe size
NPSH	net positive suction head
NQA	nuclear quality assurance
NR	neutron reflector
NRC	U.S. Nuclear Regulatory Commission
NRCA	non-radiological controlled area
NRDS	non-radioactive drain system
NS	non-seismic
NSSS	nuclear steam supply system
NUMARC	Nuclear Management and Resources Council
NUREG	NRC Technical Report Designation (Nuclear Regulatory Commission)
O/B	outside building
OBE	operating-basis earthquake
OC	operator console
OD	outside diameter
ODCM	offsite dose calculation manual
ODSCC/IGA	outside diameter stress corrosion cracking/intergranular attack
OECD	Organization for Economic Cooperation and Development
OEM	original equipment manufacturer
OEPS	onsite electrical power system
OER	operating experience review
O/H	overhead
OHLHL	overhead heavy load handling system
OLM	on-line maintenance
OLTC	on-load tap changer
OMCS	off-microwave communication system
OMS	operation and monitoring system
Oncor	Oncor Electric Delivery Company LLC
OP	over-pressure
OP Δ T	over power delta-T
OPC	overspeed protection controller

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ACRONYMS AND ABBREVIATIONS (Continued)

OPDMS	on-line power distribution monitoring system
OPS	offsite power system
OPSDS	onsite power system distribution system
O-RAP	operational reliability assurance program
ORE	occupational radiation exposure
ORIGEN2	buildup, decay, and processing of radioactive materials calculation code (ORNL)
ORNL	Oak Ridge National Laboratory
OS	operating system
OSD	operational sequence diagram
OT	over temperature
OT Δ T	over temperature delta-T
OTPS	over Temperature delta-T protection system
OTS	offsite transmission systems
OVDR	over-drain
P signal	containment isolation signal
P&ID	pipng and instrumentation diagram
P/T	pressure and temperature
PA	postulated accident
PABX	private automatic branch telephone exchange
PAM	post accident monitoring
PASS	post accident sampling system
PAW	plasma arc welding
PC	plant condition
PCCV	prestressed concrete containment vessel
PCMI	pellet/cladding mechanical interaction
PCMS	plant control and monitoring system
PCT	peak cladding temperature
PDS	plant damage state
PERMS	process effluent radiation monitoring and sampling system
PGA	peak ground acceleration
PGS	plant gas systems
PGSS	primary gaseous sampling system
PHT	RCP purge water head tank
PIV	pressure isolation valve
PLHR	peak linear heat rate
PLS	plant lighting system

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ACRONYMS AND ABBREVIATIONS (Continued)

PLSS	primary liquid sampling system
PM	project manager
PMF	probable maximum flood
PMP	probable maximum precipitation
PMW	primary makeup water
PMWS	primary makeup water system
POL	problem oriented language
POS	plant operational state
POV	power-operated valve
PPASS	process and post-accident sampling systems
PPS	preferred power supply
PRA	probabilistic risk assessment
PRDF	probabilistic risk assessment fundamental
PRDS	pressurizer and relief discharge system
PRS	pressure relief system
PRSV	pressurizer safety valve
PRT	pressurizer relief tank
PS	Prestress
PS/B	power source building
PSB	power systems branch
PSF	performance shaping factor
PSFSV	power source fuel storage vault
PSI	preservice inspection
PSMS	protection and safety monitoring system
PSS	process and post-accident sampling system
PST	preservice testing
PSWS	potable and sanitary water system
PT	liquid penetrant examination method
PTFE	polytetrafluoroethylene
PTLR	pressure and temperature limits report
PTS	pressurized thermal shock
PUCT	Public Utility Commission of Texas
PWR	pressurized-water reactor
PWS	potable water system
PWSCC	primary water stress corrosion cracking
QA	quality assurance
QAP	quality assurance program

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ACRONYMS AND ABBREVIATIONS (Continued)

QAPP	quality assurance project plan
QAPD	quality assurance program document
QPTR	quadrant power tilt ratio
R/B	reactor building
RADTRAD	radionuclide transport, removal, and dose
RAI	request for additional information
RAP	reliability assurance program
RAT	reserve auxiliary transformer
RAW	risk achievement worth
RCA	radiological controlled area
RCC	rod control cluster
RCCA	rod cluster control assembly
RCCS	reactor cavity cooling system
RCDT	reactor coolant drain tank
RCL	reactor coolant loop
RCP	reactor coolant pump
RCPB	reactor coolant pressure boundary
RCS	reactor coolant system
REA	rod ejection accident
RESAR	reference safety analysis report
RF	recovery factors
RFI	radio frequency interference
RFT	resin fill tank
RG	Regulatory Guide
RHR	residual heat removal
RHRS	residual heat removal system
RIA	reactivity initiated accident
RICT	risk-informed completion time
RIM	required input motion
RIS	Regulatory Issue Summary
RLE	review level earthquake
RMAT	risk management action time
RMS	radiation monitoring system
RMTS	risk-managed technical specifications
RO	reactor operator
RPI	rod position indication
RPS	reactor protection system

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ACRONYMS AND ABBREVIATIONS (Continued)

RPV	reactor pressure vessel
RRS	required response spectra
RRW	risk reduction worth
RSC	remote shutdown console
RSR	remote shutdown room
RSS	remote shutdown system
RSSS	reactor safety shutdown system
RSV	reheat stop valve
RT	reactor trip
RTB	reactor trip breaker
RTD	resistance temperature detector
RTDP	revised thermal design procedure
RTNDT	reference nil ductility temperature
RTNSS	regulatory treatment of non safety-related systems
RTP	rated thermal power
RT _{PTS}	reference pressurized thermal shock temperature
RTS	reactor trip system
RV	reactor vessel
RVH	reactor vessel head
RVR	reactor vessel rupture
RVWL	reactor vessel water level
RWMS	radioactive waste management system
RWP	refueling water recirculation pump
RWS	refueling water storage system
RWSAT	refueling water storage auxiliary tank
RWSP	refueling water storage pit
RWSPVS	refueling water storage pit vent system
RY	reactor-year
S signal	safety injection signal
SA	severe accident
SAFDL	specified acceptable fuel design limits
SAM	seismic anchor motion
SAMA	severe accident mitigation alternative
SAMDA	severe accident mitigation design alternative
SAMG	severe accident management guideline
SAS	secondary alarm station
SAT	systems approach to training

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ACRONYMS AND ABBREVIATIONS (Continued)

SAW	submerged arc weld
SBLOCA	small break loss of coolant accident
SBO	station blackout
SC	steel concrete
SCADA	supervisory control and data acquisition
SCAVS	safeguard component area HVAC system
SCIS	secondary side chemical injection system
SCR	Squaw Creek Reservoir
SDCV	spatially dedicated continuously visible
SDM	shutdown margin
SDV	safety depressurization valve
sec	second, seconds
SECY	Secretary of the Commission, Office of the (NRC)
SEI	Structural Engineering Institute
SER	significant event report
SFCP	Surveillance Frequency Control Program
SFDP	safety function determination program
SFP	spent fuel pit
SFPC	spent fuel pit cooling
SFPCS	spent fuel pit cooling and purification system
SG	steam generator
SGBDS	steam generator blowdown system
SGBSS	steam generator blowdown sampling system
SGTR	steam generator tube rupture
SGWFCV	steam generator water filling control valve
SI	safety injection
SIP	safety injection pump
SIS	safety injection system
SL	safety limit
SLB	steam line break
SLBO	steam line break/leak outside containment
SLOCA	small pipe break LOCA
SLS	safety logic system
SMA	seismic margin analysis
SMACNA	Sheet Metal and Air Conditioning Contractors National Association

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ACRONYMS AND ABBREVIATIONS (Continued)

SMAW	shielded metal arc weld
SNL	Sandia National Laboratories
SOER	significant operating experience report
SOR	senior reactor operator
SORV	stuck-open relief valve
SPCS	steam and power conversion system
SPDS	safety parameter display system
SPLB	NRC plant systems branch
SPS	sound powered system
SQR	Seismic Qualification Report
SR	surveillance requirement
SRHV	spent resin holding vessel
SRM	staff requirements memorandum
SRO	senior reactor operator
SRP	Standard Review Plan
SRSS	square root sum of the squares
SRST	spent resin storage tank
SRV	safety relief valve
SS	stainless steel
SSA	signal selection algorithm
SSAS	station service air system
SSC	structure, system, and component
SSE	safe-shutdown earthquake
SSEA	safe-shutdown earthquake anchor
SSEI	safe-shutdown earthquake inertia loads
SSI	soil-structure interaction
SSS	secondary sampling system
SST	station service transformer
STA	shift technical advisor
STDP	standard thermal design procedure
SV	(main) stop valve
SW	service water
SWMS	solid waste management system
T/B	turbine building
T/D	turbine driven
T/G	turbine generator
TADOT	trip actuating device operational test

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ACRONYMS AND ABBREVIATIONS (Continued)

Tavg	average temperature
TBD	to be determined
TBE	thin bed effect
TBS	turbine bypass system
TBV	turbine bypass valve
TC	thermocouple
TCEH	Texas Competitive Electric Holdings
TCEQ	Texas Commission on Environmental Quality
Tcold	cold temperature
TCS	turbine component cooling water system
TD	theoretical density
TDC	thermal diffusion coefficient
TDF	thermal design flow
TDS	total dissolved solids
TEDE	total effective dose equivalent
T-H	thermal hydraulic
THERP	technique for human error rate prediction
Thot	hot temperature
TIG	tungsten inert gas
TI-SGTR	temperature induced steam generator tube rupture
TMI	Three Mile Island
TPDES	Texas Pollutant Discharge Elimination System
TPS	turbine protection system
TRANS	general transients
Tref	reference temperature
TRS	test response spectrum
TS	technical specification
TS	telecommunication system
TSC	technical support center
TSCVS	technical support center (TSC) HVAC system
TSIS	turbine supervisory instrument system
TSP	transmission service provider
TT	thermal treatment
TVS	turbine building area ventilation system
U.S.	United States
UAT	unit auxiliary transformer
UB	upper bound

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ACRONYMS AND ABBREVIATIONS (Continued)

UCC	underclad cracking
UFSAR	Updated Final Safety Analysis Report
UG	underground
UHS	ultimate heat sink
UHSRS	ultimate heat sink related structures
UHSS	ultimate heat sink system
UPS	uninterruptible power supply
URD	Utility Requirement Document
US, U.S.	United States
USA	United States of America
USE	upper shelf energy
USM	uniform support motion
UT	ultrasonic examination method
UTS	ultimate tensile strength
UV/IR	ultraviolet/infrared
V&V	verification and validation
VA	vital area
VAC	volts alternating current
VAS	auxiliary building ventilation system
VCS	containment ventilation system
VCT	volume control tank
VDS	vent drain system
VDU	visual display unit
VE	vital equipment
VFTP	ventilation filter testing program
VRS	engineered safety features ventilation system
Vs	shear wave velocity
VSL	VSI International, Ltd.
VT	voltage transformer
VWO	valve wide open
VWS	chilled water system
WCAP	Westinghouse Commercial Atomic Power (report)
WG	water gauge
WHP	waste holdup tank pump
WHT	waste holdup tank
WMS	waste management system

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ACRONYMS AND ABBREVIATIONS (Continued)

WMT	waste monitor tank
WPS	welding procedure specifications
wt	weight
Xfm	transformer
ZD	zero dependency
ZOI	zone of influence
ZPA	zero period acceleration
ΔT	delta temperature (temperature difference or change)

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1.0 INTRODUCTION AND GENERAL DESCRIPTION OF THE PLANT

1.1 INTRODUCTION

This section of the referenced Design Control Document (DCD) is incorporated by reference with the following departures and/or supplements.

CP SUP 1.1(1) Add the following paragraphs at the end of DCD Section 1.1.

This Final Safety Analysis Report (FSAR) describes the design, construction, and operation of a two-unit nuclear power plant designated as the Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4. The design information provided demonstrates that CPNPP Units 3 and 4 can be constructed and operated without undue risk to the health and safety of the public.

The Combined License (COL) Applicant for CPNPP Units 3 and 4 is Luminant Generation Company LLC (Luminant), a subsidiary of Energy Future Holdings Corp.(EFH). Luminant has corporate responsibility for the design, engineering, construction, licensing, operation, procurement, quality assurance (QA), and fuel management for CPNPP Units 3 and 4.

Portions of the information required for this FSAR are incorporated by reference from the US-APWR DCD revision 1 as identified in Section 1.6. Those portions are identified by solid horizontal lines in this FSAR.

In cases where a section is incorporated without the need for further information, the following standard language is used: "This section of the referenced DCD is incorporated by reference with no departures or supplements."

In cases where a section is incorporated by reference with additional information provided in the FSAR, the following standard language is used: "This section of the referenced DCD is incorporated by reference with the following departures and/or supplements."

Information that is added to a section that is incorporated by reference is identified as either a departure or a supplement.

1.1.1 Plant Location

CP COL 1.1(2) Replace the last sentence in DCD Subsection 1.1.1 with the following.

The Comanche Peak Units 3 and 4 site is located in Somervell County in north central Texas, about 65 miles southwest of the Dallas-Fort Worth metropolitan area. Already located on the site are two existing nuclear power plants,

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designated as CPNPP Unit 1 (Operating License NPF-87) and Unit 2 (Operating License NPF-89).

1.1.5 Schedule

CP COL 1.1(1) Replace the entire text in DCD Subsection 1.1.5 with the following.

The estimated schedule for CPNPP Units 3 and 4 is addressed below in terms of calendar quarters of each year, which begins on January 1st and ends on December 31st. The dates of occurrence of the milestone events shown are expressed in terms of the calendar quarter in which each is expected to occur.

- Unit 3 Site Preparations – Estimated start in fourth quarter 2009
 - Unit 3 First Safety Concrete – Estimated start in fourth quarter 2012
 - Unit 3 Fuel Load and Startup – Estimated start in fourth quarter 2016
 - Unit 3 Commercial Operation – Estimated start in fourth quarter 2017
 - Unit 4 Site Preparations – Estimated start in second quarter 2012
 - Unit 4 First Safety Concrete – Estimated start in fourth quarter 2013
 - Unit 4 Fuel Load and Startup – Estimated start in third quarter 2017
 - Unit 4 Commercial Operation – Estimated start in second quarter 2018
-

1.1.6.1 Regulatory Guide 1.206

CP SUP 1.1(2) Add the following text to the end of DCD Subsection 1.1.6.1.

This FSAR generally follows the US-APWR DCD organization and numbering. Some organization and numbering differences are adopted where necessary to include additional material. Any exceptions are identified with the appropriate left margin notation as discussed below.

The standard left margin notations used in the FSAR, and descriptions of each, are as follows:

- STD DEP X.Y(#) - FSAR information that departs from the generic DCD and is common to all COL applicants referencing the generic DCD. Each standard departure is numbered separately based on the applicable section down to the X.Y level, e.g., STD DEP 1.2(1).

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- CP DEP X.Y (#) - FSAR information that departs from the generic DCD and is plant-specific. Each departure item is numbered separately based on the applicable section down to the X.Y level, e.g., CP DEP 1.2(1).
- STD COL X.Y(#) - FSAR information that addresses a DCD COL Information item and is common to all COL applicants referencing the generic DCD. Each COL item is numbered as identified in DCD Table 1.8-2 and applicable sections, e.g., STD COL 1.2(1).
- CP COL X.Y(#) - FSAR information that addresses a DCD COL Information item and is plant-specific. Each COL item is numbered as identified in DCD Table 1.8-2 and applicable sections, e.g., CP COL 1.2(1).
- STD SUP X.Y(#) - FSAR information that supplements the material in the DCD and is common to all COL applicants referencing the generic DCD. Each SUP item is numbered separately at an appropriate section level, e.g., STD SUP 1.2(1).
- CP SUP X.Y(#) - FSAR information that supplements the material in the DCD and is plant-specific. Each SUP item is numbered separately at an appropriate section level, e.g., CP SUP 1.2(1).

1.1.6.3 Text, Tables, and Figures

STD SUP 1.1(3) Add the following text at the end of DCD Subsection 1.1.6.3.

FSAR tables, figures, and references are numbered in the same manner as in the DCD, but the first new FSAR item is numbered as 201, the second 202, the third 203, and consecutively thereafter. When a table, figure, or reference in the DCD is changed, the change is appropriately annotated in the left margin as identified above. New appendices are included in the FSAR with letter designations following the pertinent chapter, e.g., Appendix 1AA.

When it provides greater contextual clarity, an existing DCD table or figure is revised by adding new information to the table or figure and replacing the DCD table or figure with a new one in the FSAR. In such an instance, the revised table or figure clearly identifies the information being added, and retains the same numbering as in the DCD, but the table or figure number is revised to end with the designation "R" to indicate that the table or figure has been revised and replaced. For example, revised "Table 1.2-1" becomes "Table 1.2-1R." New and revised tables and figures are labeled in the left margin as standard or plant-specific departures, supplements, etc., as described in Subsection 1.1.6.1. Generally, only those sheets of the tables or figures on which COL information is provided are physically included in the COL application.

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1.1.6.7 Combined License Information

Replace the content of DCD Subsection 1.1.6.7 with the following.

CP COL 1.1(1) **1.1(1)** *Estimated schedule*

This COL item is addressed in Subsection 1.1.5.

CP COL 1.1(2) **1.1(2)** *Plant location*

This COL item is addressed in Subsection 1.1.1.

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1.2 GENERAL PLANT DESCRIPTION

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

1.2.1.5.4.4 Water Systems

CP COL 1.8(1) Add the following paragraph at the end of DCD Subsection 1.2.1.5.4.4.

Ultimate heat sink - The ultimate heat sink (UHS) is comprised of cooling towers (CTWs), basins, transfer pumps, piping, valves, and instrumentation. The system provides the capability to remove heat from the essential service water system (ESWS).

The UHS satisfies the following design requirements:

- The UHS is designed to perform safety-related functions assuming a single failure in one train, with another train out of service for maintenance.
- The UHS consists of four independent trains. Each train includes a mechanical draft cooling tower, a basin, and a transfer pump.
- The UHS is designed to cool the heated service water by the forced airflow in the mechanical draft cooling towers, and return the water to the basin.
- The UHS is designed to provide sufficient cooling capacity during normal, transient, and accident operating conditions, for the safe operation and orderly shutdown of the plant. The maximum supply water temperature from the UHS is 95 °F under the peak heat loads condition.
- Each basin provides 33-1/3 percent of the combined inventory for the 30-day storage capacity, to satisfy the recommendation of Regulatory Guide (RG) 1.27.
- A transfer pump is provided in each basin to allow transfer of water between basins and thus permit full utilization of the total water inventory in three basins, assuming the most limiting single active failure with another train out of service for maintenance.
- The mechanical draft cooling towers and the transfer pumps are powered from the safety buses so safety-related functions are maintained during a loss of offsite power (LOOP).

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1.2.1.5.6 Electric Power

CP COL 1.8(1) Replace the last sentence of the first paragraph in DCD Subsection 1.2.1.5.6 with the following.

Generator output voltage is stepped up to 345 kV and transmitted through overhead transmission lines to the plant switching station, where distribution to the transmission system is accomplished. Four 345 kV transmission lines connect the plant switching station to the transmission grid.

1.2.1.6 Site Characteristics

CP COL 1.2(1) Replace the second paragraph in DCD Subsection 1.2.1.6 with the following.

The site characteristics of CPNPP Units 3 and 4 are addressed in Chapter 2. The site plan of CPNPP Units 3 and 4 is shown in Figure 1.2-1R.

CP COL 1.2(1) Replace the fourth sentence of the third paragraph in DCD Subsection 1.2.1.6 with the following.

The configuration of the ultimate heat sink and related structures is addressed in Subsections 1.2.1.5.4.4 and 1.2.1.7.2.8. Each UHS and related structure is located on the north side of the reactor building.

CP COL 1.2(1) Replace the last sentence of the third paragraph in DCD Subsection 1.2.1.6 with the following.

The plant switching station is located approximately half a mile southwest of CPNPP Units 3 and 4, and the switchyard area is located on the south side of each turbine building as depicted in Subsection 8.2.1.2.1.

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1.2.1.7.1 General Plant Arrangement

CP COL 1.8(1) Add the following text at the end of first paragraph in DCD Subsection 1.2.1.7.1.
In addition, the UHS is the major CPNPP Units 3 and 4 site-specific structure.

CP COL 1.2(1) Replace the first sentence of the second paragraph in DCD Subsection 1.2.1.7.1 with the following.
The outline and the arrangement of CPNPP Units 3 and 4 are shown in Figure 1.2-1R.

CP COL 1.8(1) Add the following text after the first sentence of the third paragraph in DCD Subsection 1.2.1.7.1.
The UHS is designed and constructed as a safety-related structure, to the requirements of seismic category I, as defined in RG 1.29.

CP COL 1.8(1) Replace the last sentence in DCD Subsection 1.2.1.7.1 with the following.
The general arrangement drawings for the CPNPP Units 3 and 4 are provided in Figures 1.2-2R through 1.2-51, as well as Figures 1.2-201 through 1.2-210.

CP SUP 1.2(1) The design plant grade in the DCD is 2'-7", whereas the nominal plant grade elevation for CPNPP Units 3 and 4 is National Geodetic Vertical Datum of 1929 (NGVD 29) Elevation 822'-0"; therefore, DCD elevations are to be increased by 819'-5" to be actual site elevations. The nominal plant grade floor elevation for design is NGVD 29 Elevation 822'-0" and corresponds to DCD Elevation 2'-7". The actual plant grade floor elevation varies to accommodate floor slope and layout requirements.

CP COL 1.8(1) Add the following new subsection after DCD Subsection 1.2.1.7.2.7.

1.2.1.7.2.8 Ultimate Heat Sink Related Structures

The ultimate heat sink related structures (UHSRS) are seismic category I structures that connect to the essential service water pipe tunnel (ESWPT).

Each UHSRS consists of a cooling tower enclosure, essential service water (ESW) pump house and a UHS basin.

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Each ESW pump house contains two safety-related ESW pumps and one UHS transfer pump. The UHS ESW pump house ventilation system maintains environmental conditions to UHS ESW pump house that meet the design requirements during normal, transient, and accident operating conditions, for the safe operation and orderly shutdown of the plant.

1.2.2 Combined License Information

Replace the content of DCD Subsection 1.2.2 with the following.

CP COL 1.2(1) **1.2(1)** *Site-specific site plan*

This COL item is addressed in Subsections 1.2.1.6 and 1.2.1.7.1 and Figure 1.2-1R.

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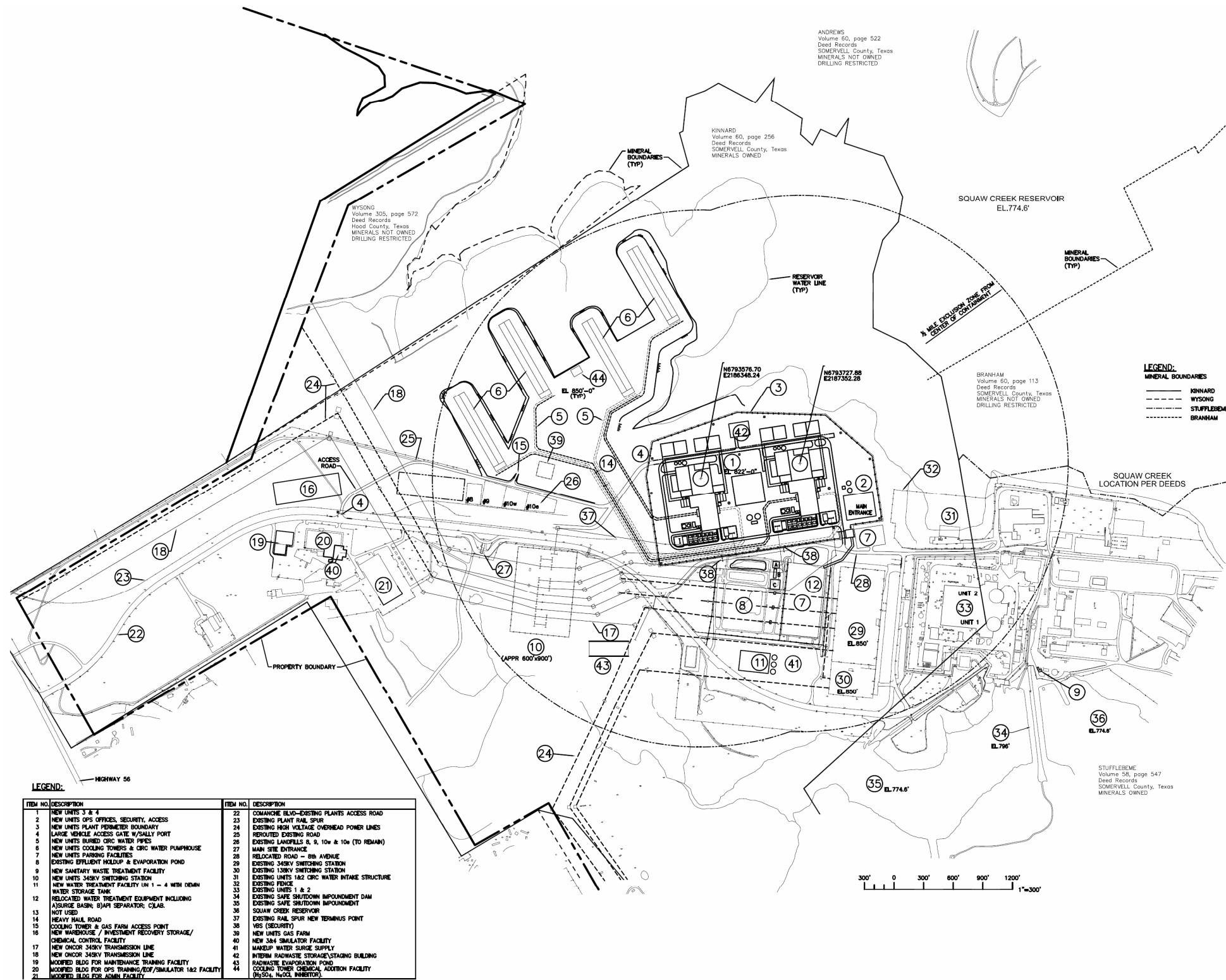


Figure 1.2-1R Comanche Peak Units 3 & 4 Site Plan (Sheet 1 of 2)

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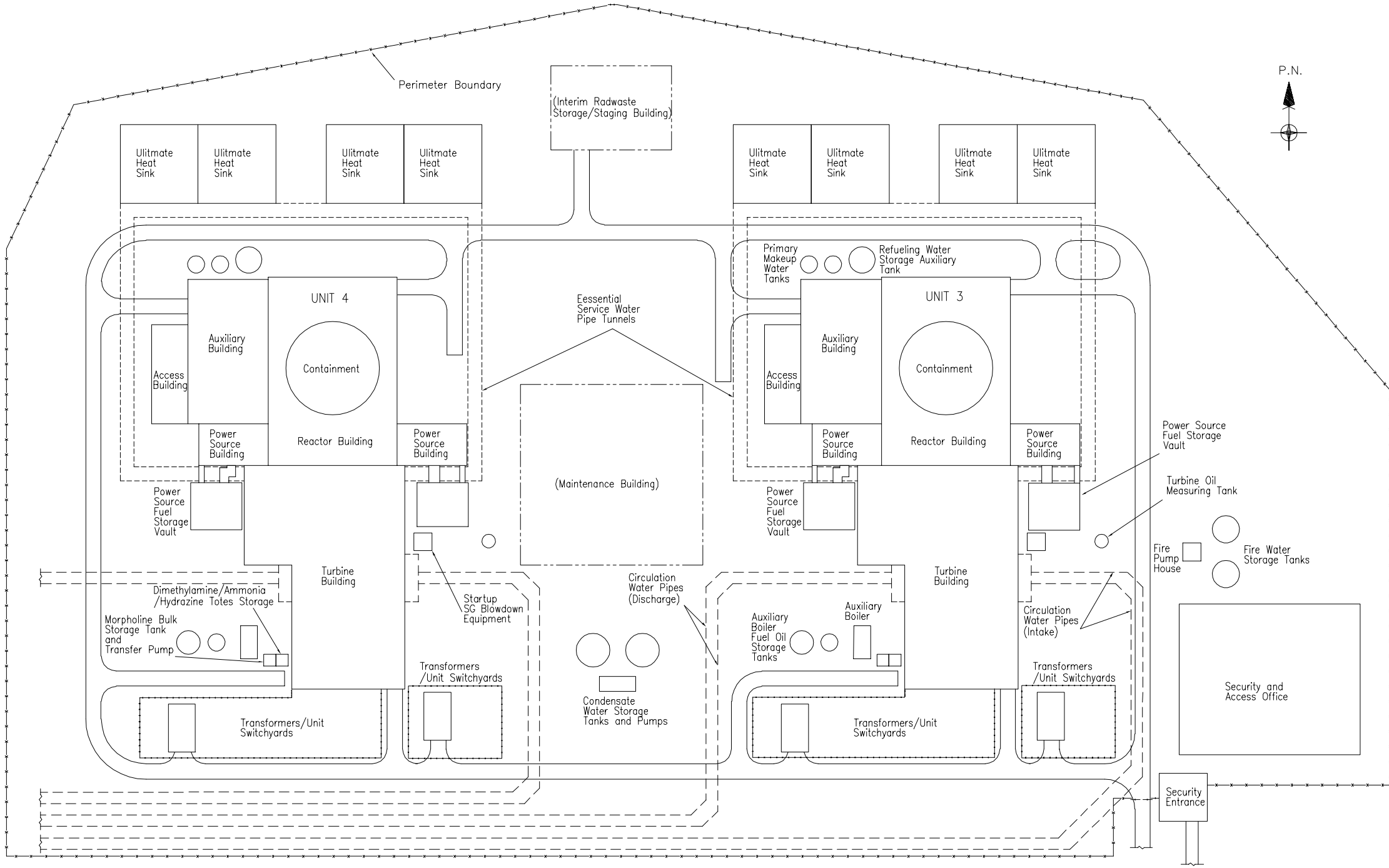
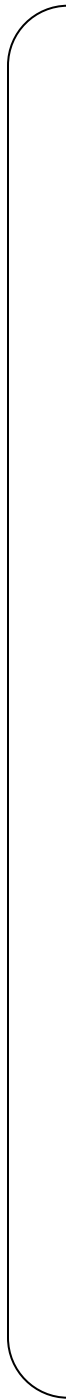


Figure 1.2-1R Comanche Peak Units 3 & 4 Site Plan (Sheet 2 of 2)

Security-Related Information – Withheld Under 10 CFR 2.390(d)(1)

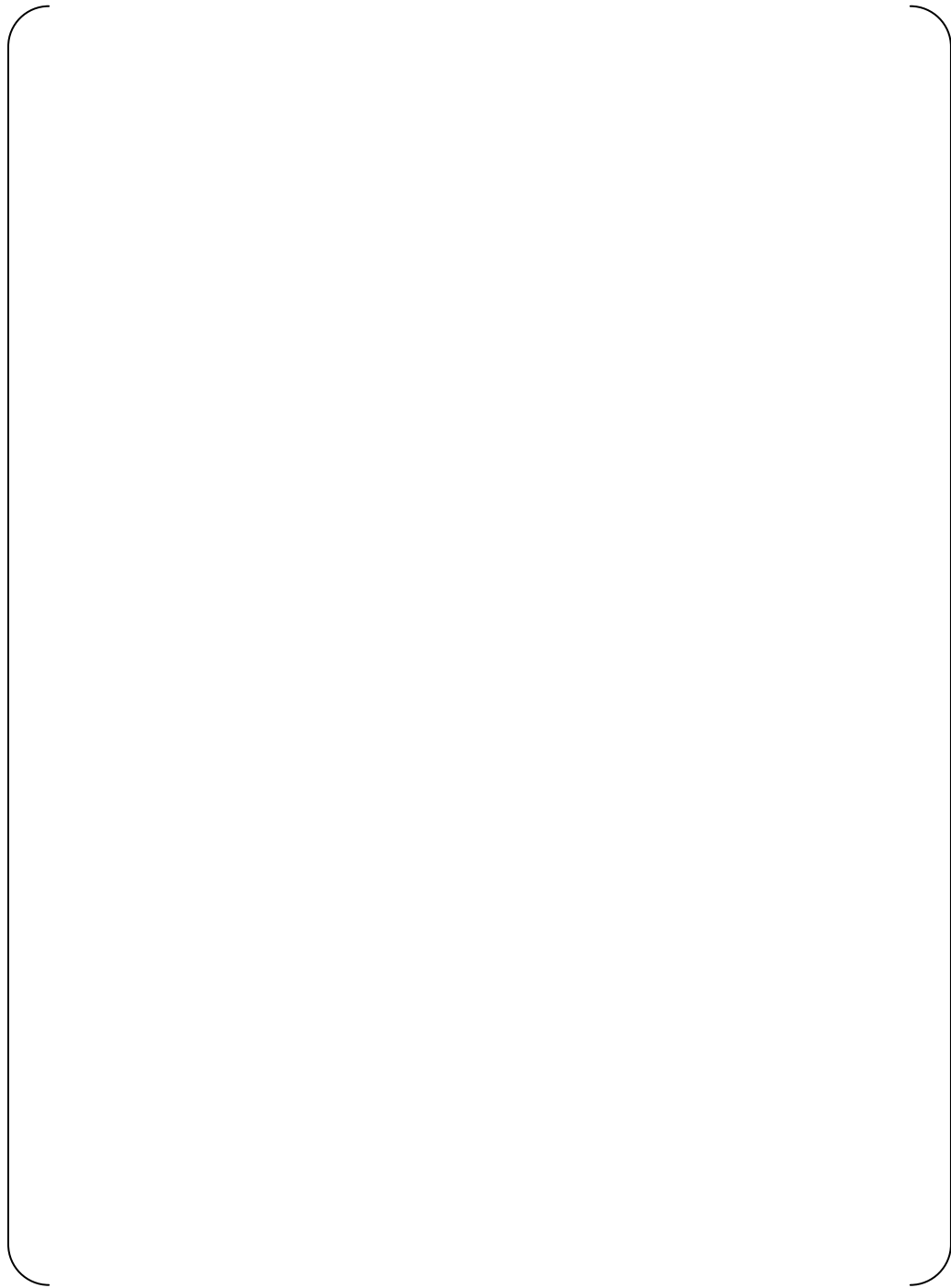
Comanche Peak Nuclear Power Plant, Units 3 & 4
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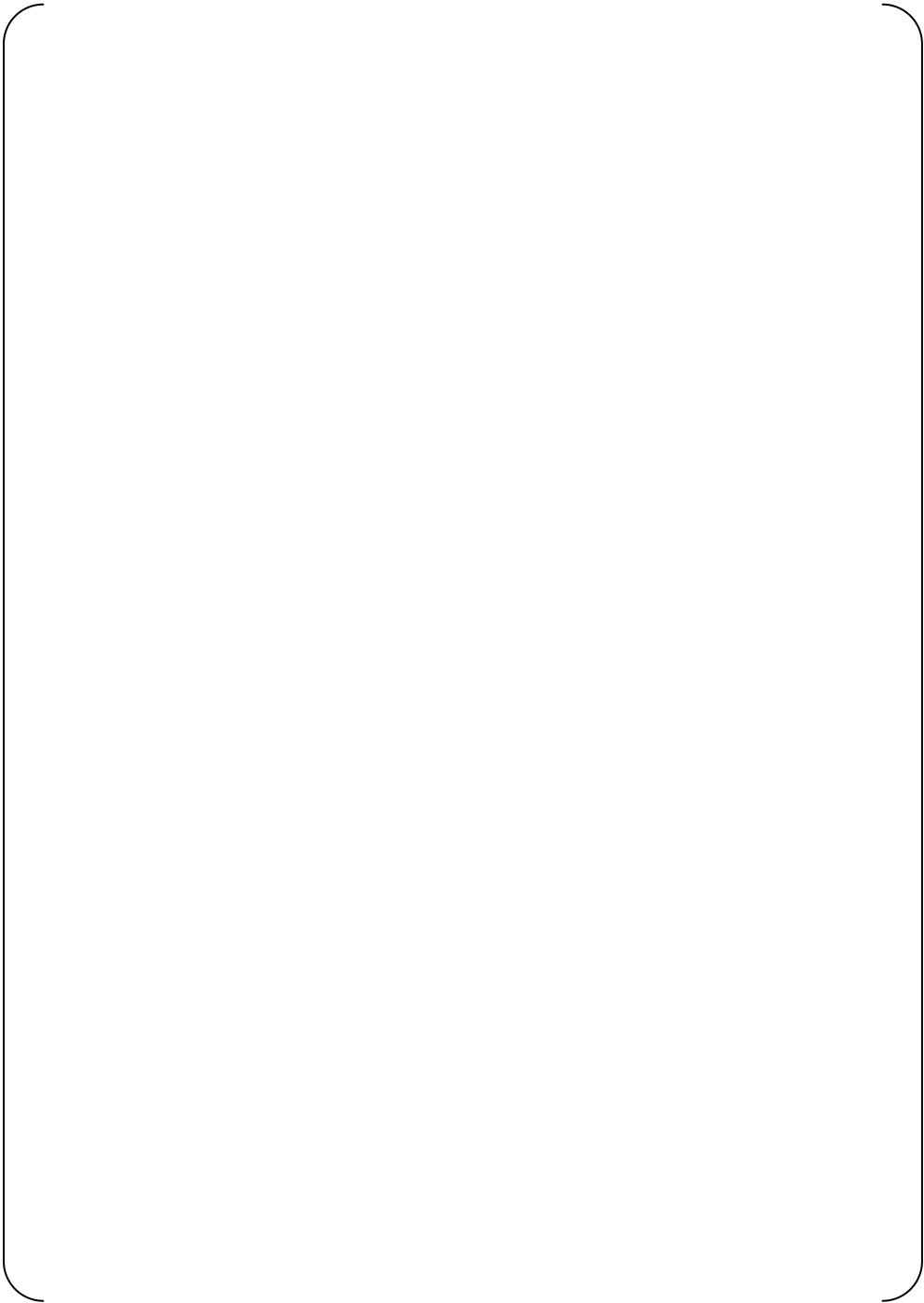
Figure 1.2-2R Comanche Peak Units 3 & 4 Power Block at Elevation 793'-1" – Plan View

**Comanche Peak Nuclear Power Plant, Units 3 & 4
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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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**Comanche Peak Nuclear Power Plant, Units 3 & 4
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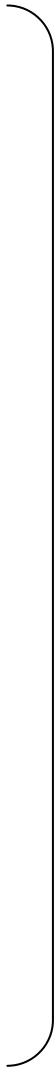
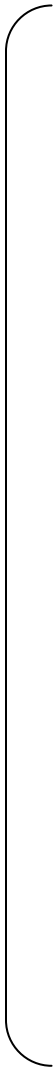


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CP COL 1.8(1)

Figure 1.2-203 Ultimate Heat Sinks A and B at Elevation 791'-0" - Plan View

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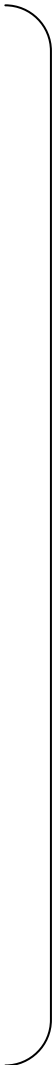
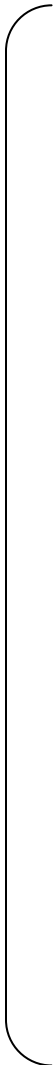


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CP COL 1.8(1)

Figure 1.2-204 Ultimate Heat Sinks A and B at Elevation 828'-0" - Plan View

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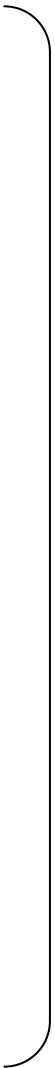
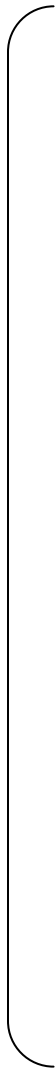


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CP COL 1.8(1)

Figure 1.2-205 Ultimate Heat Sinks A and B at Elevation 846'-0" - Plan View

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CP COL 1.8(1)

Figure 1.2-206 Ultimate Heat Sinks A and B - Sectional Views
1.2-13

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(SRI)

CP COL 1.8(1)

Figure 1.2-207 Ultimate Heat Sinks C and D at Elevation 791'-0" - Plan View

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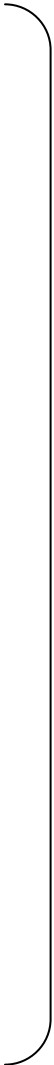
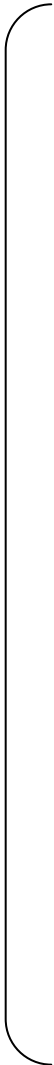


CP COL 1.8(1)

Figure 1.2-208 Ultimate Heat Sinks C and D at Elevation 828'-0" - Plan View

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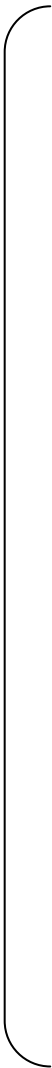


(SRI)

CP COL 1.8(1)

Figure 1.2-209 Ultimate Heat Sinks C and D at Elevation 846'-0" - Plan View

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CP COL 1.8(1)

Figure 1.2-210 Ultimate Heat Sinks C and D - Sectional Views

(SRI)
Revision 0

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1.3 COMPARISON WITH OTHER FACILITIES

This section of the referenced DCD is incorporated by reference with no departures or supplements.

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1.4 IDENTIFICATION OF AGENTS AND CONTRACTORS

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

1.4.1 Applicant/Program Manager

CP COL 1.4(1) Insert the following paragraphs before first paragraph in DCD Subsection 1.4.1.

Luminant Generation Company LLC (Luminant) is a subsidiary of Energy Future Holdings Corp., and is the owner, applicant, and operator for CPNPP Units 3 and 4. Luminant is also the owner and operator of CPNPP Units 1 and 2, and its corporate predecessor was responsible for construction of Units 1 and 2.

EFH (formerly TXU Corp.) conducts the operations principally through Texas Competitive Electric Holdings (TCEH) and Oncor Electric Delivery Company LLC (Oncor) subsidiaries. TCEH is a holding company for subsidiaries engaged in competitive electricity market activities largely in Texas, including Luminant, which is engaged in electricity generation, development and construction of new generation facilities, wholesale energy sales and purchases, and commodity risk management and trading activities, and TXU Energy, which is engaged in retail electricity sales. Oncor is engaged in regulated electricity transmission and distribution operations in Texas.

Mitsubishi Heavy Industries, Ltd. (MHI) is responsible for developing the overall standard plant design for the US-APWR, supporting COL application development and relevant design, and licensing support for the FSAR and related parts of the COL application.

1.4.2.3 Washington Division of URS Corporation

CP COL 1.4(1) Add the following sentence to the end of first sentence in DCD Subsection 1.4.2.3.

The Washington Division of URS Corporation provides consultation and engineering services in support of the design of the CPNPP Units 3 and 4 site and systems. The Washington Division of URS Corporation has entered into a contract with MHI to provide these services.

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CP COL 1.4(1) Add the following subsections after DCD Subsection 1.4.2.3.

1.4.2.4 Mitsubishi Nuclear Energy Systems, Inc.

Mitsubishi Nuclear Energy Systems, Inc. (MNES) is the primary contractor to Luminant for developing the CPNPP Units 3 and 4 COL Application, and provides overall project management and project control functions, as well as regulatory oversight. Various subcontractors support MNES.

MNES, established in July 2006, is a subsidiary of MHI that serves as a comprehensive business base for MHI's nuclear power business in the U.S., taking orders for new plants and handling business to supply large-size replacement components for existing nuclear power plants.

1.4.2.5 Enercon Services Inc.

Enercon Services, Inc. is an engineering, environmental, technical, and management services firm providing a broad range of professional services to private and government sector clients throughout the U.S. The primary roles of Enercon Services, Inc are developing the Environmental Report and related FSAR Chapter 2 for CPNPP Units 3 and 4, and providing services in document development and coordination.

1.4.2.6 Other Participants in the Construction

No construction contractors have been identified in this section because an architect engineer, balance of plant supplier and constructor have not been selected at this time. Each contractor will be selected based on the experience in the nuclear industry or equivalent, the relevant experience with engineering, procurement and construction, and the available resources. The identification and technical qualification of the primary contractor for construction will be made available prior to commencement of construction.

1.4.3 Combined License Information

Replace the content of DCD Subsection 1.4.3 with the following.

CP COL 1.4(1) **1.4(1)** *Identification of major agents, contractors, and participants*

This COL item is addressed in Subsections 1.4.1, and 1.4.2.3 through 1.4.2.6.

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1.5 REQUIREMENTS FOR FURTHER TECHNICAL INFORMATION

This section of the referenced DCD is incorporated by reference with no departures or supplements.

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1.6 MATERIAL REFERENCED

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP SUP 1.6(1) Add the following text after the last paragraph in DCD Subsection 1.6.

A list of topical reports incorporated by reference as part of the FSAR is shown in Table 1.6-201.

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CP SUP 1.6(1)

**Table 1.6-201
Material Referenced**

Report Number	Title	FSAR Section Number
52-021, Docket Number	US-APWR Design Control Document, Rev. 1	All FSAR Chapters
NEI 07-09	Generic FSAR Template Guidance for Offsite Dose Calculation Manual Program Description, Rev.1	11.3, 11.5
NEI 07-10	Generic FSAR Template Guidance for Process Control Program, Rev.2	11.4
NEI 07-08	Generic FSAR Template Guidance for Ensuring That Occupational Radiation Exposures Are As Low As Is Reasonably Achievable (ALARA), Rev. 1	12.1
NEI 07-03	Generic FSAR Template Guidance for Radiation Protection Program Description, Rev. 5	12.1, 12.5
NEI 06-13A	Template for an Industry Training Program Description, Rev. 1	13.2
NEI 06-06	Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites, Rev. 3	13.7
NEI 06-09	Risk-Managed Technical Specifications (RMTS) Guidelines, Rev. 0	16.1, Chapter 19
NEI 04-10	Risk-Informed Method for Control of Surveillance Frequencies, Rev. 1	16.1
NEI 06-14A	Quality Assurance Program Description, Rev. 5	17.5
NEI 07-02A	Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed Under 10 CFR Part 52, Rev. 0	17.6

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1.7 DRAWINGS AND OTHER DETAILED INFORMATION

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP SUP 1.7(1) Add the following text after the last paragraph in DCD Section 1.7.

Table 1.7-201 contains a list of site-specific instrument and control functional diagrams and electrical one-line diagrams. A list of site-specific system drawings is shown in Table 1.7-202.

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CP SUP 1.7(1)

Table 1.7-201

Site-Specific I&C Functional and Electrical One-Line Diagrams

Figure Number^(Note)	Subject
8.1-1R	Simplified One Line Diagram Electric Power System
8.2-202	CPNPP Units 3 & 4 Offsite Power System Key One Line Diagram
8.2-203	Normal PPS Unit Switchyard One Line Diagram
8.2-204	Alternate PPS Unit Switchyard One Line Diagram
8.2-205	Plant Switching Station One Line Diagram
8.2-209	Logic Diagram – 345 kV Reserve Auxiliary Transformer Circuit Breakers
8.2-210	Logic Diagram – 345 kV Main Transformer Circuit Breaker
8.3.1-1R	Onsite AC Electrical Distribution System (Sheet 1 of 7) – Main One Line Diagram
8.3.1-1R	Onsite AC Electrical Distribution System (Sheet 5 of 7) – Class 1E 480V Buses A and B One Line Diagram
8.3.1-1R	Onsite AC Electrical Distribution System (Sheet 6 of 7) - Class 1E 480V Buses C and D One Line Diagram
8.3.1-2R	Logic Diagrams (Sheet 2 of 24) - One Line Diagram
8.3.1-2R	Logic Diagrams (Sheet 3 of 24) – Non-Class 1E 13.8kV Incoming Circuit Breaker Tripping and Closing
8.3.1-2R	Logic Diagrams (Sheet 4 of 24) - Non-Class 1E 6.9kV Incoming Circuit Breaker (N3 and N4 Buses) Tripping and Closing
8.3.1-2R	Logic Diagrams (Sheet 5 of 24) - Non-Class 1E 6.9kV Incoming Circuit Breaker (N5 and N6 Buses) Tripping and Closing
8.3.1-2R	Logic Diagrams (Sheet 18 of 24) – Class 1E Train A LOOP and LOCA Load Sequencing
8.3.1-2R	Logic Diagrams (Sheet 19 of 24) - Class 1E Train B LOOP and LOCA Load Sequencing
8.3.1-2R	Logic Diagrams (Sheet 20 of 24) - Class 1E Train C LOOP and LOCA Load Sequencing
8.3.1-2R	Logic Diagrams (Sheet 21 of 24) - Class 1E Train D LOOP and LOCA Load Sequencing

Note: Figure number with the designation "R" indicates that the figure has been revised and replaced.

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CP SUP 1.7(1)

Table 1.7-202

Site-Specific System Drawings

Figure Number^(Note)	Subject
9.2.1-1R	Essential Service Water System Piping and Instrumentation Diagram
9.2.4-1R	Potable and Sanitary Water System Flow Diagram
9.2.4-201	Sanitary Wastewater Treatment System Flow Diagram
9.2.5-201	Ultimate Heat Sink System Piping and Instrumentation Diagram
9.3.1-201	Hydrogen and Nitrogen Gas Supply Configuration
9.4-201	UHS ESW Pump House Ventilation System Flow Diagram
9.5.1-201	Fire Protection Water Supply System
9.5.1-202	CPNPP Units 3 & 4 Fire Main System
10.4.5-1R	Circulating Water System Piping and Instrumentation Diagram
10.4.5-201	Circulating Water System Piping and Instrumentation Diagram (Site-specific portion)
10.4.8-1R	Steam Generator Blowdown System Piping and Instrumentation Diagram (Sheet 1 of 2)
10.4.8-2R	Steam Generator Blowdown System Piping and Instrumentation Diagram (Sheet 2 of 2)
10.4.8-201	Steam Generator Blowdown System Piping and Instrumentation Diagram (Site-specific portion)
11.2-201	Liquid Waste Management System
11.3-201	Gaseous Waste Management System
11.4-201	Solid Waste Management System

Note: Figure number with the designation "R" indicates that the figure has been revised and replaced.

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1.8 INTERFACES FOR STANDARD DESIGN

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

-
- CP COL 1.8(1) Replace the last sentence of the third paragraph and the first through third sentences of the fourth paragraph in DCD Section 1.8 with the following.
- The CPNPP Units 3 and 4 site plan is shown on Figure 1.2-1R.
- Table 1.8-1R has been revised for the FSAR with a column indicating the summary of the site-specific significant interface description and the location in the FSAR. Items in the "Description" column of Table 1.8-1R are partially or entirely site-specific and are outside the scope of the US-APWR standard plant design. This table also includes a description of each interface and the location of the DCD in which it is discussed.

-
- CP COL 1.8(1) Add the following text after the last paragraph in DCD Section 1.8.
- 10 CFR 52.79 requires demonstration that interface requirements established for the certified standard design have been met. This section identifies the interfaces between the US-APWR standard plant design and the CPNPP Units 3 and 4 site-specific design. As a COL applicant referencing the certified US-APWR design, Luminant has provided design features and characteristics that comply with the interface requirements for the site-specific portion of the CPNPP Units 3 and 4 facility design in the FSAR. The following subsections describe the site-specific interfaces and the location where the design features for each interface are addressed.

1.8.1.1 Consolidated Combined License Items for the Entire Design Control Document

-
- CP COL 1.8(2) Replace the second and third paragraphs in DCD Subsection 1.8.1.1 with the following new subsections.
- CP COL 1.8(3)

1.8.1.2 Resolution of Combined License Information Items

Table 1.8-201 lists the FSAR location where each COL information item from the DCD is resolved. In addition, this table shows which COL information items are resolved in the Combined License Application (COLA), and which items remain

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as COL holder actions, including the summarized rationale for each COL holder item.

Each COL information item is categorized and designated according to the following:

- COL Applicant Item (designation “A”) – Information needed in the COL application to meet the guidelines of RG 1.206, and additional/supplementary information that will be available for NRC staff review. The same commitment made for the inspections, tests, analyses, and acceptance criteria (ITAAC) is also categorized into this classification.
- COL Holder Item (designation “H”) – Information that will be addressed after issuance of the COL, or will be demonstrated under the construction inspection program (except for ITAAC program), with one of the following rationales:
 - a. Detailed design information depending on as-procured/as-built information: Information that will be addressed during procurement, fabrication, construction, testing, and operation stages is classified as a “COL Holder Item.” The FSAR includes commitments and information sufficient for the NRC to conclude its safety evaluation.
 - b. Operational programs/other procedures: Those programs described in the FSAR to the extent that the NRC can conclude with reasonable assurance that the program is “fully described”, and which are not required to be submitted as part of the application by the regulations or RG 1.206, or those procedures and programs which should be submitted in accordance with the requirements of the regulations or RG 1.206, but scheduled to be provided to the NRC after the COL issuance (e.g., prior to fuel loading).
 - c. Development of detailed schedule: A detailed schedule cannot be fixed during the COLA review phase and is subject to change in accordance with the progress of design or construction. Such a schedule is defined as a COL Holder Item.

The column entitled “Rationale” in Table 1.8-201 is for COL holder items, and indicates whether the rationale for a particular COL holder item corresponds to rationale a, b or c as noted above.

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1.8.1.3 Summary of Departures

There are no departures from the US-APWR DCD in the FSAR.

1.8.1.4 Conformance with Site Parameters

The site parameters assumed for the US-APWR design certification are found in Section 2.1 of Tier 1 of the referenced US-APWR DCD, and in Chapter 2.0 of Tier 2 of the referenced US-APWR DCD. Conformance of the CPNPP Units 3 and 4 site with these site parameters is evaluated in Chapter 2.0.

1.8.2 Combined License Information

Replace the content of DCD Subsection 1.8.2 with the following.

CP COL 1.8(1) **1.8(1)** *Interface requirements*

This COL item is addressed in Section 1.8 and Table 1.8-1R.

CP COL 1.8(2) **1.8(2)** *Resolution for COL information items*

This COL item is addressed in Subsection 1.8.1.2 and Table 1.8-201.

CP COL 1.8(3) **1.8(3)** *Summary of departure and conformance with site parameter*

This COL item is addressed in Subsections 1.8.1.3 and 1.8.1.4.

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CP COL 1.8(1)

Table 1.8-1R (Sheet 1 of 6)

Significant Site-Specific Interfaces with the Standard US-APWR Design

Interface Number	Interface	Interface Type	Description of Items Considered to be Outside the Standard Scope of Design	DCD Section	Description of the Interface in the FSAR	FSAR Section
1	Circulating Water System	Site Feature Interface	The site-specific final system configuration and system design parameters. A typical design of the circulating water system (CWS) is presented in the DCD	10.4.5	<p>CWS is cooled by non-safety-related mechanical draft cooling towers.</p> <p>The makeup water and blowdown system is provided to supply water to the cooling tower to compensate losses due to evaporation and wind drift, and control water chemistry of cooling tower basins.</p> <p>The makeup water and blowdown system final configuration and design parameters are determined as follows subject to site-specific.</p> <ul style="list-style-type: none"> • Makeup water system configuration and intake structure are specified and water source is determined as Lake Granbury. • Means for blowdown is determined as gravity drain into Lake Granbury. • A spare makeup pump is common to both units. 	10.4.5

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Table 1.8-1R (Sheet 2 of 6)

Significant Site-Specific Interfaces with the Standard US-APWR Design

Interface Number	Interface	Interface Type	Description of Items Considered to be Outside the Standard Scope of Design	DCD Section	Description of the Interface in the FSAR	FSAR Section
2	Essential Service Water System and Ultimate Heat Sink	System Interface	<p>Portions of the ESWS outside the US-APWR buildings. The UHS, safety-related system is provided to remove the heat transferred from the ESWS during normal operation, design basis event and safe shutdown.</p> <p>The UHS is the safety-related water source to ESWS.</p>	<p>9.2.1 9.2.5</p>	<p>The UHS consists of four 50 percent capacity mechanical draft cooling towers, one for each ESWS train, and four 33-1/3 percent capacity basins and four transfer pumps.</p> <p>ESWPs are respectively located in each basin with adequate submergence of the pumps to assure the NPSH for the pumps.</p> <p>A portion of the basin water is discharged through the blowdown via the ESWS when the makeup water is available to maintain an acceptable water chemistry composition. The blowdown water is discharged to Lake Granbury.</p>	<p>1.2 3.2 9.2.1 9.2.5</p>
3	Deleted from the DCD.					

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Table 1.8-1R (Sheet 3 of 6)

Significant Site-Specific Interfaces with the Standard US-APWR Design

Interface Number	Interface	Interface Type	Description of Items Considered to be Outside the Standard Scope of Design	DCD Section	Description of the Interface in the FSAR	FSAR Section
4	Electric Power	System Interface	<p>Off-site power transmission system outside the low voltage terminals of the main and reserve transformers. Location and design of the main switchyard area and the equipment located therein, as well as design details such as voltage level for the main step-up transformers.</p> <p>A site-specific interface between the certified design and the local electrical grid is addressed in the DCD.</p>	8.1 8.2	<p>Interface to transmission system is the low-voltage terminals of the main and reserve auxiliary transformers in the transformed yard.</p> <p>Generator voltage is stepped up to 345 kV and transmitted through overhead transmission tie lines to the 345 kV plant switching station.</p> <p>Reserve transformer steps down 345 kV to onsite medium voltage bus voltage.</p>	1.2 8.1 8.2
5	Deleted from the DCD.					
6	Potable and Sanitary Water Systems	System Interface	<p>Portions of potable and sanitary water system (PSWS) outside the standard US-APWR buildings. The potable water system provides water supply and distribution fit for human consumption, and the sanitary drain system provides collection of sanitary wastewater.</p>	9.2.4	<p>Potable water supply to CPNPP Units 3 and 4 is from the Somervell County Water District.</p> <p>Sanitary/domestic wastes generated in the plant are transferred to the domestic waste treatment facility. Treated liquid effluent is discharged into Squaw Creek Reservoir and dewatered sludge is bagged for disposal.</p>	9.2.4

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Table 1.8-1R (Sheet 4 of 6)

Significant Site-Specific Interfaces with the Standard US-APWR Design

Interface Number	Interface	Interface Type	Description of Items Considered to be Outside the Standard Scope of Design	DCD Section	Description of the Interface in the FSAR	FSAR Section
7	Communications Systems	System Interface	Communications systems and equipment outside the buildings identified in the standard US-APWR design. The COL Applicant is to provide adequate external communications, including interfaces with the local telecommunications provider, and communication links between the on-site system and other on-site and off-site facilities, such as the Emergency Operations Facility and the training simulator.	9.5.2	Onsite and offsite communications, and general alarm for emergency evacuation of the site, are accomplished by a multi-tiered communications and notification system.	9.5.2
8	Administrative, Emergency Response and Training Facilities	Site Feature Interface	Location and design of the COL Applicant's administrative building, training structures including the training simulator, and the Emergency Response Facility.	7.5.1 9.5.2 13.3	Operations, administration, training, and emergency preparedness functions are conducted in dedicated spaces around the plant site.	1.2 7.5.1.6.2 9.5.2 13.3
9	Security Systems	System Interface	Site security/surveillance systems, such as surveillance cameras, video displays, security detection sensors, communications, access control, etc. Interface is with the standard portion of the site communications system.	13.6	Security systems and procedures are discussed separately in the CPNPP Physical Security Plan and Safeguards Contingency Plan, and Security Training and Qualification Plan.	13.6

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Table 1.8-1R (Sheet 5 of 6)

Significant Site-Specific Interfaces with the Standard US-APWR Design

Interface Number	Interface	Interface Type	Description of Items Considered to be Outside the Standard Scope of Design	DCD Section	Description of the Interface in the FSAR	FSAR Section
10	General Site Improvements	Site Feature Interface	Landscaping features, roadways, walkways, security fences and barricades, and traffic control barriers, etc., that are not part of the standard US-APWR building designs.	1.2 13.6	A site arrangement plan is provided in Figure 1.2-1R, which shows site-specific features and improvements, as well as the standard US-APWR buildings and features.	1.2 13.6
11	Fire Protection	System Interface	Fire protection systems such as facility features for fire protection, fire water supply system, fire suppression system, and fire detection and fire alarm systems. A safety-related water source supplied to the standpipe system located in areas containing equipment required for safe-shutdown following safe-shutdown earthquake (SSE).	9.5.1	Site-specific fire protection systems are provided throughout the plant. Each of the ESW lines in the R/B and in the ESWP house is tapped to supply water to the fire protection system.	9.2.1 9.5.1
12	Effluent Monitoring and Sampling	Site Feature Interface	Effluent monitoring and sampling systems and features required to monitor levels of activity in plant effluent released to the environment.	11.5	The Offsite Dose Calculation Manual is implemented as part of the operational program.	11.5
13	Deleted from the DCD.					

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Table 1.8-1R (Sheet 6 of 6)

Significant Site-Specific Interfaces with the Standard US-APWR Design

Interface Number	Interface	Interface Type	Description of Items Considered to be Outside the Standard Scope of Design	DCD Section	Description of the Interface in the FSAR	FSAR Section
14	Compressed Gases	System Interface	Supply portions of oxygen, hydrogen, nitrogen, and carbon dioxide systems. Supply lines from yard area connect to distribution lines in US-APWR buildings necessary for operation of components.	9.3.1	Bulk and bottled nitrogen are provided to equipment that requires N ₂ . Bulk hydrogen is supplied to equipment that requires H ₂ . Carbon dioxide gas cylinders supply gas to equipment that requires the carbon dioxide. Miscellaneous gases are delivered to gas analyzers that require the gases.	9.3.1

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CP COL 1.8(2)

Table 1.8-201 (Sheet 1 of 68)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 1.1(1)	The COL Applicant is to provide scheduled completion date and estimated commercial operation date of nuclear power plants referencing the US-APWR design certification.	1.1.5	A		
COL 1.1(2)	The Combined License (COL) Applicant is to identify the actual plant location.	1.1.1	A		
COL 1.2(1)	The COL Applicant is to develop a complete and detailed site plan in the site-specific licensing process.	1.2.1.6 1.2.1.7.1 Figure 1.2-1R	A		
COL 1.4(1)	The COL Applicant is to identify major agents, contractors, and participants for the COL application development, construction, and operation.	1.4.1 1.4.2.3 – 1.4.2.6		H	a
COL 1.8(1)	The COL Applicant is to demonstrate that the interface requirements established for the design have been met.	1.8 Table 1.8-1R	A		
COL 1.8(2)	The COL Applicant is to provide the cross-reference identifying specific FSAR sections that address each COL information item from the DCD	1.8.1.2 Table 1.8-201	A		
COL 1.8(3)	The COL Applicant is to provide a summary of plant specific departures from the DCD and conformance with site parameters.	1.8.1.3 1.8.1.4	A		

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Table 1.8-201 (Sheet 2 of 68)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 1.9(1)	The COL Applicant is to address an evaluation of the applicable RG, SRP, Generic Issues including Three Mile Island (TMI) requirements, and operational experience for the site-specific portion and operational aspect of the facility.	1.9 1.9.1-1.9.4 Table 1.9-201 - 220	A		
COL 2.1(1)	The COL Applicant is to describe the site geography and demography including the specified site parameters.	2.0 2.1	A		
COL 2.2(1)	The COL Applicant is to describe nearby industrial, transportation, and military facilities within 5 miles of the site, or at greater distances as appropriate based on their significance. The COL Applicant is to establish the presence of potential hazards, determine whether these accidents are to be considered as DBEs, and the design parameters related to the accidents determined as DBEs.	2.2	A		
COL 2.3(1)	The COL Applicant is to provide site-specific pre-operational and operational programs for meteorological measurements, and is to verify the site-specific regional climatology and local meteorology are bounded by the site parameters for the standard US-APWR design or demonstrate by some other means that the proposed facility and associated site-specific characteristics are acceptable at the proposed site.	2.0 2.3.1 2.3.2	A		

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Table 1.8-201 (Sheet 3 of 68)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 2.3(2)	The COL Applicant is to provide conservative factors as described in SRP 2.3.4 (Reference 2.3-2). If a selected site will cause excess to the bounding χ/Q values, then the COL Applicant is to demonstrate how the dose reference values in 10 CFR 50.34 (Reference 2.3-3) and the control room dose limits in 10 CFR 50, Appendix A, General Design Criteria 19 (Reference 2.3-4) are met using site-specific χ/Q values.	2.0 2.3.4	A		
COL 2.3(3)	The COL Applicant is to characterize the atmospheric transport and diffusion conditions necessary for estimating radiological consequences of the routine release of radioactive materials to the atmosphere, and provide realistic estimates of annual average χ/Q values and D/Q values as described in SRP 2.3.5 (Reference 2.3-5).	2.0 2.3.5	A		
COL 2.4(1)	The COL Applicant is to provide sufficient information to verify that hydrologic related events will not affect the safety-basis for the US-APWR.	2.4	A		
COL 2.5(1)	The COL Applicant is to provide sufficient information regarding the seismic and geologic characteristics of the site and the region surrounding the site.	2.0 2.5	A		

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Table 1.8-201 (Sheet 4 of 68)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.1(1)	The COL Applicant is to provide a design that allows for the appropriate inspections and layout features of the ESWS.	3.1.4.16.1	A		
COL 3.2(1)	Deleted from the DCD.				
COL 3.2(2)	Deleted from the DCD.				
COL 3.2(3)	Deleted from the DCD.				
COL 3.2(4)	The COL Applicant is to identify the site-specific, safety-related SSCs that are designed to withstand the effects of earthquakes without loss of capability to perform their safety function; and those site-specific, safety-related fluid systems or portions thereof, as well as the applicable industry codes and standards for pressure-retaining components.	3.2.1.2 Table 3.2-201.	A		
COL 3.2(5)	The COL Applicant is to identify the equipment class and seismic category of the site-specific, safety-related fluid systems, components (including pressure retaining), and equipment as well as the applicable industry codes and standards.	3.2.2 Table 3.2-201	A		
COL 3.3(1)	The COL Applicant is responsible for verifying the site-specific basic wind speed is enveloped by the determinations in this section.	3.3.1.1	A		

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Table 1.8-201 (Sheet 5 of 68)

Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.3(2)	These requirements also apply to seismic category I structures provided by the COL Applicant. Similarly, it is the responsibility of the COL Applicant to establish the methods for qualification of tornado effects to preclude damage to safety-related SSCs.	3.3.2.2.4	A		
COL 3.3(3)	It is the responsibility of the COL Applicant to assure that site-specific structures and components not designed for tornado loads will not impact either the function or integrity of adjacent safety-related SSCs, or generate missiles having more severe effects than those discussed in Subsection 3.5.1.4.	3.3.2.3	A		
COL 3.3(4)	The COL Applicant is to provide the wind load design method and importance factor for site-specific category I and category II buildings and structures.	3.3.1.2	A		
COL 3.3(5)	The COL Applicant is to note the vented and unvented requirements of this subsection to the site-specific category I buildings and structures.	3.3.2.2.2	A		
COL 3.4(1)	The COL Applicant is to address the site-specific design of plant grading and drainage.	3.4.1.2	A		
COL 3.4(2)	The COL Applicant is to demonstrate the DBFL bounds their specific site, or is to identify and address applicable site conditions where static flood level exceed the DBFL and/or generate dynamic flooding forces.	3.4.1.4	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.4(3)	Site-specific flooding hazards from engineered features, such as from cooling water system piping, is to be addressed by the COL Applicant.	3.4.1.2	A		
COL 3.4(4)	The COL Applicant is to address any additional measures below grade to protect against exterior flooding and the intrusion of ground water into seismic category I buildings and structures.	3.4.1.2	A		
COL 3.4(5)	The COL Applicant is to identify and design, if necessary, any site-specific flood protection measures such as levees, seawalls, floodwalls, site bulkheads, revetments, or breakwaters per the guidelines of RG 1.102 (Reference 3.4-3), or dewatering system if the plant is not built above the DBFL.	3.4.1.2	A		
COL 3.4(6)	The COL Applicant is to identify any site-specific physical models used to predict prototype performance of hydraulic structures and systems.	3.4.2	A		
COL 3.5(1)	The COL Applicant is to prepare plant procedures that specify equipment required for maintenance or undergoing maintenance is to be removed from containment prior to operation, moved to a location where it is not a potential hazard to SSCs important to safety, or seismically restrained to prevent it from becoming a missile.	3.5.1.1.2.1		H	b

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.5(2)	The COL Applicant is to commit to actions to maintain P1 within this acceptable limit as provided by turbine and rotor design features, material specifications and recommended inspections during preservice and inservice periods.	3.5.1.3.2		H	b
COL 3.5(3)	As described in DCD, Section 2.2, the COL Applicant is to establish the presence of potential hazards, except aircraft, which is reviewed in Subsection 3.5.1.6, and the effects of potential accidents in the vicinity of the site.	3.5.1.5	A		
COL 3.5(4)	It is the responsibility of the COL Applicant to verify the site interface parameters with respect to aircraft crashes and air transportation accidents as described in Section 2.2.	3.5.1.6	A		
COL 3.5(5)	The COL Applicant is responsible to evaluate site-specific hazards for external events that may produce missiles more energetic than tornado missiles, and assure that the design of seismic category I and II structures meet these loads.	3.5.2	A		
COL 3.5(6)	The COL Applicant is responsible to assess the orientation of the T/G of this and other unit(s) at multi-unit site for the probability of missile generation using the evaluation of Subsection 3.5.1.3.2.	3.5.1.3.1	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.6(1)	<p>The COL Applicant is to identify the site-specific systems or components that are safety-related or required for safe shutdown that are located near high-energy or moderate-energy piping systems, and are susceptible to the consequences of these piping failures. The COL Applicant is to provide a list of site-specific high-energy and moderate-energy piping systems, which includes a description of the layout of all piping systems where physical arrangement of the piping systems provides the required protection, the design basis of structures and compartments used to protect nearby essential systems or components, or the arrangements to ensure the operability of safety-related features where neither separation nor protective enclosures are practical. Additionally, the COL Applicant is to provide the failure modes and effect analyses that verifies the consequences of failures in site-specific high-energy and moderate-energy piping does not affect the ability to safely shut down the plant.</p>	3.6.1.3		H	a
COL 3.6(2)	Deleted from the DCD.				
COL 3.6(3)	Deleted from the DCD.				

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.6(4)	The COL Applicant is to implement the criteria of the following subsections for defining break and crack locations and configurations, and the locations and configurations of design basis pipe break and crack locations and configurations for site-specific high-energy and moderate-energy piping systems. The COL Applicant is to identify the postulated rupture orientation of each postulated break location for site-specific high-energy and moderate-energy piping systems. The COL Applicant is to implement the appropriate methods to assure that as-built configuration of site-specific high-energy and moderate-energy piping systems is consistent with the design intent and provide as-built drawings showing component locations and support locations and types that confirms this consistency.	3.6.2.1		H	a
COL 3.6(5)	Deleted from the DCD.				
COL 3.6(6)	The COL Applicant is to discuss the implementation of criteria dealing with special features, if any.	3.6.2.5		H	a
COL 3.6(7)	Deleted from the DCD.				
COL 3.6(8)	Deleted from the DCD.				
COL 3.6(9)	Deleted from the DCD.				
COL 3.7(1)	The COL Applicant is to confirm that the site-specific PGA at the basemat level control point of the CSDRS is less than or equal to 0.3 g.	3.7.1.1	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.7(2)	The COL Applicant is to perform an analysis of the US-APWR standard plant seismic category I design to verify that the site-specific FIRS at the basemat level control point of the CSDRS are enveloped by the site-independent CSDRS.	3.7.1.1	A		
COL 3.7(3)	It is the responsibility of the COL Applicant to develop analytical models appropriate for the seismic analysis of buildings and structures that are designed on a site-specific basis including, but not limited to, the following: <ul style="list-style-type: none"> · PSFSVs (seismic category I) · ESWPT (seismic category I) · UHSRS (seismic category I) 	3.7.2.3.1 Appendix 3KK Appendix 3LL Appendix 3MM	A		
COL 3.7(4)	To prevent non-conservative results, the COL Applicant is to review the resulting level of seismic response and determine appropriate damping values for the site-specific calculations of ISRS that serve as input for the seismic analysis of seismic category I and seismic category II subsystems.	3.7.1.2	A		
COL 3.7(5)	The COL Applicant is to assure that the horizontal FIRS defining the site-specific SSE ground motion at the bottom of seismic category I or II basemats envelope the minimum response spectra required by 10 CFR 50, Appendix S, and the site-specific response spectra obtained from the response analysis.	3.7.1.1 Table 3.7-201 Table 3.7-202 Figure 3.7-201 Figure 3.7-202 Figure 3.7-203	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.7(6)	The COL Applicant is to develop site-specific GMRS and FIRS by an analysis methodology, which accounts for the upward propagation of the GMRS. The FIRS are compared to the CSDRS to assure that the US-APWR standard plant seismic design is valid for a particular site. If the FIRS are not enveloped by the CSDRS, the US-APWR standard plant seismic design is modified as part of the COLA in order to validate the US-APWR for installation at that site.	3.7 Figure 3.7-201	A		
COL 3.7(7)	The COL Applicant is to determine the allowable dynamic bearing capacity based on site conditions, and to evaluate the bearing load to this capacity.	3.7.1.3 Table 3.7-203 Table 3.8-202	A		
COL 3.7(8)	The COL Applicant is to institute dynamic testing to evaluate the strain-dependent variation of the material dynamic properties for site materials with initial shear wave velocities below 3,500 ft/s.	3.7.2.4.1	A		
COL 3.7(9)	The COL Applicant is to assure that the design or location of any site-specific seismic category I SSCs, for example buried yard piping or duct banks, will not expose those SSCs to possible impact due to the failure or collapse of non-seismic category I structures, or with any other SSCs that could potentially impact, such as heavy haul route loads, transmission towers, non safety-related storage tanks, etc.	3.7.2.8		H	a

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.7(10)	It is the responsibility of the COL Applicant to further address structure-to-structure interaction if the specific site conditions can be important for the seismic response of particular US-APWR seismic category I structures, or may result in exceedance of assumed pressure distributions used for the US-APWR standard plant design.	3.7.2.8	A		
COL 3.7(11)	It is the responsibility of the COL Applicant to confirm the masses and frequencies of the PCCV polar crane and fuel handling crane and to determine if coupled site-specific analyses are required.	3.7.2.3.4		H	a
COL 3.7(12)	It is the responsibility of the COL Applicant to design seismic category I below- or above-ground liquid-retaining metal tanks such that they are enclosed by a tornado missile protecting concrete vault or wall, in order to confine the emergency gas turbine fuel supply.	3.7.3.9 Appendix 3MM	A		
COL 3.7(13)	The COL Applicant is to set the value of the OBE that serves as the basis for defining the criteria for shutdown of the plant, according to the site specific conditions.	3.7.1.1	A		
COL 3.7(14)	The COL Applicant is to determine from the site-specific geological and seismological conditions if multiple US-APWR units at a site will have essentially the same seismic response, and based on that determination, choose if more than one unit is provided with seismic instrumentation at a multiple-unit site.	3.7.4.3	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.7(15)	The COL Applicant is to assure that a time-history analyzer/recorder is provided which has the capability to provide pre-event recording time of 3 seconds minimum and post-event recording time of 5 seconds minimum, and to record at least 25 minutes of sensed motion	3.7.4.2		H	a
COL 3.7(16)	The COL Applicant is to verify the site-specific applicability of these monitors, and determine if there is a need for the installation of additional instrumentation for the measurement of the free-field ground motion based on conditions and requirements specific to the site.	3.7.4.1	A		
COL 3.7(17)	Deleted from the DCD.				
COL 3.7(18)	It is the responsibility of the COL Applicant to develop a site-specific instrument surveillance program including calibration and testing that complements the US-APWR seismic instrumentation program, and to develop site-specific maintenance and repair procedures that maximize the number of instruments in service during plant operation and shutdown.	3.7.4.5		H	b
COL 3.7(19)	It is the responsibility of the COL Applicant to provide the site-specific details of the seismic instrumentation implementation plan based on the discussion in Subsections 3.7.4.1 through 3.7.4.5.	3.7.4.6		H	b

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.7(20)	The COL Applicant is to validate the site-independent seismic design of the standard plant for site-specific conditions, including geological, seismological, and geophysical characteristics, and to develop the site-specific GMRS as free-field outcrop motions on the uppermost in-situ competent material.	3.7 Appendix 3NN	A		
COL 3.7(21)	The COL Applicant is responsible for the seismic design of those seismic category I and seismic category II SSCs that are not part of the US-APWR standard plant.	3.7	A		
COL 3.7(22)	The COL Applicant is required to perform site-specific seismic analyses, including SSI analysis which considers seismic wave transmission incoherence and analysis of the CAV of the seismic input motion, in order to determine if high-frequency exceedances of the CSDRS could be transmitted to SSCs in the plant superstructure with potentially damaging effects.	3.7.1.1	A		
COL 3.7(23)	The COL Applicant is to verify that the results of the site-specific SSI analysis for the broadened ISRS and basement walls lateral soil pressures are enveloped by the US-APWR standard design.	3.7.2.4.1 Appendix 3NN	A		
COL 3.7(24)	The COL Applicant is to verify that the site-specific ratios V/A and AD/V^2 (A , V , D , are PGA , ground velocity, and ground displacement, respectively) are consistent with characteristic values for the magnitude and distance of the appropriate controlling events defining the site-specific uniform hazard response spectra.	3.7.1.1	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.7(25)	<p>The COL Applicant referencing the US-APWR standard design is required to perform a site-specific SSI analysis for the R/B-PCCV-containment internal structure utilizing the program ACS-SASSI SSI Version 2.2 (Reference 3.7-17) which contains time history input incoherence function capability. The SSI analysis using SASSI is required in order to confirm that site-specific effects are enveloped by the standard design. After the SASSI analysis is first performed for a specific unit, subsequent COLAs for other units may be able to forego SASSI analyses if the FIRS and GMRS derived for those subsequent units are much smaller than the US-APWR standard plant CSDRS, and if the subsequent unit can also provide justification through comparison of site-specific geological and seismological characteristics.</p>	3.7.2.4.1 Appendix 3NN	A		
COL 3.7(26)	<p>SSI effects are also considered by the COL Applicant in site-specific seismic design of any seismic category I and II structures that are not included in the US-APWR standard plant. Consideration of structure-to-structure interaction is discussed in Subsection 3.7.2.8. The site-specific SSI analysis is performed for buildings and structures including, but not limited to, the following:</p> <ul style="list-style-type: none"> · Seismic category I ESWPT · Seismic category I PSFSV · Seismic category I UHSRS 	3.7.2.4.1 Appendix 3KK Appendix 3LL Appendix 3MM	A		
COL 3.7(27)	<p>It is the responsibility of the COL Applicant to perform any site-specific seismic analysis for dams that may be required.</p>	3.7.2.13 3.7.3.8	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.7(28)	The overall basemat dimensions, basemat embedment depths, and maximum height of the US-APWR R/B, PCCV, and containment internal structure on their common basemat are given in Table 3.7.1-3 and as updated by the COL Applicant to include site-specific seismic category I structures.	3.7.1.3 Table 3.7.1-3R	A		
COL 3.7(29)	Table 3.7.2-1, as updated by the COL Applicant to include site-specific seismic category I structures, presents a summary of dynamic analysis and combination techniques including types of models and computer programs used, seismic analysis methods, and method of combination for the three directional components for the seismic analysis of the US-APWR standard plant seismic category I buildings and structures.	3.7.2.1 Table 3.7.2-1R	A		
COL 3.7(30)	The COL Applicant is to provide site-specific design ground motion time histories and durations of motion.	3.7.1.1 Figures 3.7-204 – 3.7-209	A		
COL 3.8(1)	It is the responsibility of the COL Applicant to perform reconciliation evaluations when the as-built properties become available.	3.8.1.4.1.3		H	a
COL 3.8(2)	It is the responsibility of the COL Applicant to assure that wobble and curvature coefficients used in computing prestressing losses due to friction are consistent with the tendon system corrosion protection coatings present at the time of prestressing.	3.8.1.5.1.2 3.8.1.5.2.2		H	a
COL 3.8(3)	It is the responsibility of the COL Applicant to assure that any material changes based on site-specific material selection for construction of the PCCV meet the requirements specified in ASME Code, Section III, Article CC-2000 of the code and supplementary requirements of RG 1.136 as well as SRP 3.8.1.	3.8.1.6	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.8(4)	It is the responsibility of the COL Applicant to select the site-specific concrete ingredients and to develop a concrete mix design that produces the concrete design strengths specified for the US-APWR PCCV and conform to all applicable material and quality control requirements.	3.8.1.6		H	a
COL 3.8(5)	It is the responsibility of the COL Applicant to verify these concrete creep and shrinkage parameters by testing of the site-specific concrete mix, and the PCCV design analysis is revised if the final test results affect the conclusions of the PCCV calculation.	3.8.1.6		H	a
COL 3.8(6)	It is the responsibility of the COL Applicant to develop a site-specific specification that covers the concrete production and batch plant requirements.	3.8.1.6		H	a
COL 3.8(7)	It is the responsibility of the COL Applicant to determine the site-specific aggressivity of the ground water/soil and accommodate this parameter into the concrete mix design as well as into the site-specific structural surveillance program.	3.8.1.6	A		
COL 3.8(8)	It is the responsibility of the COL Applicant to produce a site-specific liner plate specification to define the material and welding requirements, testing, and quality requirements.	3.8.1.6		H	a

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.8(9)	The COL Applicant is to produce another site-specific specification for the PCCV personnel airlocks and equipment hatch.	3.8.1.6		H	a
COL 3.8(10)	The prestressing system is designed as a strand system, however the system material may be switched to a wire system at the choice of the COL Applicant. If this is done, the COL Applicant is to adjust the US-APWR standard plant tendon system design and details on a site-specific basis.	3.8.1.6	A		
COL 3.8(11)	Deleted from the DCD.				
COL 3.8(12)	It is the responsibility of the COL Applicant to produce a site-specific specification that covers the material requirements for the Prestressing System.	3.8.1.6		H	a
COL 3.8(13)	It is the responsibility of the COL Applicant to produce a site-specific specification to define the material and special material testing requirements for the reinforcing steel system including bars and splices, and all material is to conform to Article CC-2300 of the ASME Code, Section III.	3.8.1.6		H	a
COL 3.8(14)	It is the responsibility of the COL Applicant to establish a site-specific program for testing and ISI of the PCCV, including periodic inservice surveillance and inspection of the PCCV liner and prestressing tendons in accordance with ASME Code Section XI, Subsection IWL	3.8.1.7		H	b

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.8(15)	The COL Applicant is responsible for the seismic design of those seismic category I and seismic category II SSCs not part of the US-APWR standard plant, including the following non-standard seismic category I structures designed to the site-specific SSE: <ul style="list-style-type: none"> · ESWPT · UHSRS · PSFSVs 	3.8.4	A		
COL 3.8(16)	Deleted from the DCD.				
COL 3.8(17)	Deleted from the DCD.				
COL 3.8(18)	Deleted from the DCD.				
COL 3.8(19)	The design and analysis of the ESWPT, UHSRS, and PSFSVs are to be provided by the COL Applicant based on site-specific seismic criteria.	3.8.4.1.3 Figures 3.8-201 – 3.8-214	A		
COL 3.8(20)	The COL Applicant is to identify any applicable externally generated loads. Such site-specific loads include those induced by floods, potential non-terrorism related aircraft crashes, explosive hazards in proximity to the site, and projectiles and missiles generated from activities of nearby military installations.	3.8.4.3	A		
COL 3.8(21)	Deleted from the DCD.				

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.8(22)	The COL Applicant is to address monitoring of seismic category I structures in accordance with the requirements of NUMARC 93-01 (Reference 3.8-28) and 10 CFR 50.65 (Reference 3.8-29) as detailed in RG 1.160 (Reference 3.8-30).	3.8.4.7		H	b
COL 3.8(23)	The COL Applicant is to determine if the site-specific zone of maximum frost penetration extends below the depth of the basemats for the standard plant, and to pour lean concrete under any basemat above the frost line so that the bottom of lean concrete is below the maximum frost penetration level.	3.8.5.1	A		
COL 3.8(24)	Other non-standard seismic category I buildings and structures of the US-APWR are designed by the COL Applicant based on site-specific subgrade conditions.	3.8.5.1.3 Figure 3.8-202 Figure 3.8-213 Figure 3.8-214	A		
COL 3.8(25)	The site-specific COL are to assure the design criteria listed in Chapter 2, Table 2.0-1, is met or exceeded.	3.8.5.5 Table 3.8-202	A		
COL 3.8(26)	Subsidence and differential displacement may therefore be reduced to less than 2 in. if justified by the COL Applicant based on site specific soil properties.	3.8.5.4.4	A		
COL 3.8(27)	The COL Applicant is to specify normal operating thermal loads for site-specific structures, as applicable.	3.8.4.3.7.1 Table 3.8-201	A		
COL 3.8(28)	The COL Applicant is to specify concrete strength utilized in non-standard plant seismic category I structures.	3.8.4.6.1.1	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.8(29)	The COL Applicant is to provide design and analysis procedures for the ESWPT, UHSRS, and PSFSVs.	3.8.4.4.3 Appendix 3KK Appendix 3LL Appendix 3MM	A		
COL 3.9(1)	The COL Applicant is to assure snubber functionality in harsh service conditions, including snubber materials (e.g., lubricants, hydraulic fluids, seals).	3.9.3.4.2.5	A		
COL 3.9(2)	The first COL Applicant, at the time of application, is to provide results of the vibration assessment program consistent with guidance of RG 1.20. Subsequent COL Applicant need only provide information in accordance with the applicable portion of position C.3 of RG 1.20 for Non-Prototype internals.	3.9.2.4.1		H	b
COL 3.9(3)	Deleted from the DCD.				
COL 3.9(4)	Deleted from the DCD.				
COL 3.9(5)	Deleted from the DCD.				
COL 3.9(6)	The COL Applicant is to provide the program plan for IST of dynamic restraints in accordance with ASME OM Code.	3.9.6.4		H	b

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.9(7)	The COL Applicant is to provide alternate method of valve position indicator operation and justification for valves in the IST program plan.	3.9.6.3		H	b
COL 3.9(8)	The COL Applicant is to administratively control the edition and addenda to be used for the IST program plan for pumps, valves, and dynamic restraints.	3.9.6		H	b
COL 3.9(9)	The COL Applicant is to identify MOVs that require non-intrusive diagnostic testing technique.	3.9.6.3.1	A		
COL 3.9(10)	The COL Applicant is to identify the site-specific active pumps.	3.9.3.3.1	A		
COL 3.9(11)	The COL Applicant is to provide site-specific, safety-related pump IST parameters and frequency.	3.9.6.2 Table 3.9-202	A		
COL 3.9(12)	The COL Applicant is to provide type of testing and frequency of site-specific valves subject to IST in accordance with the ASME Code.	3.9.6.3 Table 3.9-203	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.10(1)	The COL Applicant is to document and implement an equipment qualification program for seismic category I equipment and provide milestones and completion dates.	3.10.4.1		H	b
COL 3.10(2)	Deleted from the DCD.				
COL 3.10(3)	The COL Applicant is to develop and maintain an equipment qualification file that contains a list of systems, equipment, and equipment support structures, as defined above, and summary data sheets referred to as an equipment qualification summary data sheet (EQSDS) of the seismic qualification for each piece of safety-related seismic category I equipment (i.e., each mechanical and electrical component of each system), which summarize the component's qualification.	3.10		H	b
COL 3.10(4)	Deleted from the DCD.				
COL 3.10(5)	Components that have been previously tested to IEEE Std 344-1971 prior to submittal of the DCD are reevaluated to justify the appropriateness of the input motion and requalify the equipment, if necessary. The COL Applicant is to requalify the component using biaxial test input motion unless the applicant provides justification for using a single-axis test input motion.	3.10.2		H	b
COL 3.10(6)	Deleted from the DCD.				

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.10(7)	Deleted from the DCD.				
COL 3.10(8)	For design of seismic category I and II SSCs that are not part of the standard plant, the COL Applicant can similarly eliminate the OBE, or optionally set the OBE higher than 1/3 SSE, provided the design of the non-standard plant's SSCs are analyzed for the chosen OBE.	3.10.1	A		
COL 3.10(9)	Site-specific in-structure response spectra generated by the COL application may exceed the standard US-APWR design's in-structure response spectra in the high-frequency range. Accordingly, the functional performance of vibration-sensitive components, such as relays and other instrument and control devices whose output could be affected by high frequency excitation, are also considered by the COL Applicant as described above.	3.10.2	A		
COL 3.10(10)	The COL Applicant is to establish an equipment seismic qualification program which addresses all requisite aspects of seismic and dynamic qualification of mechanical and electrical equipment.	3.10		H	b
COL 3.11(1)	The COL Applicant is responsible for assembling and maintaining the environmental qualification document, which summarizes the qualification results for all equipment identified in Appendix 3D, for the life of the plant.	3.11	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.11(2)	The COL Applicant is to describe how the results of the qualification tests are to be recorded in an auditable file in accordance with requirements of 10 CFR 50.49 (j).	3.11.3	A		
COL 3.11(3)	The COL Applicant is to provide a schedule showing the EQ Program proposed implementation milestones.	3.11	A		
COL 3.11(4)	The COL Applicant is to describe periodic tests, calibrations, and inspections to be performed during the life of the plant, which verify the identified equipment remains capable of fulfilling its intended function.	3.11	A		
COL 3.11(5)	The COL Applicant is to identify the site-specific equipment to be addressed in the EQ Program, including locations and environmental conditions.	3.11.1.1 Table 3D-201	A		
COL 3.11(6)	The COL Applicant is to qualify site-specific electrical and mechanical equipment (including instrumentation and control, and certain accident monitoring equipment) using an equivalent qualification process to that delineated for the US-APWR Standard Plant.	3.11.4	A		
COL 3.11(7)	The COL Applicant is to identify chemical and radiation environmental requirements for site-specific qualification of electrical and mechanical equipment (including instrumentation and control, and certain accident monitoring equipment).	3.11.5 Table 3D-201	A		
COL 3.11(8)	The COL Applicant is to provide the site-specific mechanical equipment requirements.	3.11.6 Table 3D-201	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.11(9)	Optionally, the COL Applicant may revise the parameters based on site-specific considerations.	3.11.1.2	A		
COL 3.12(1)	Deleted from the DCD.				
COL 3.12(2)	If any piping is laid out in the yard, the COL Applicant is to generate site-specific seismic response spectra, which may be used for the design of these piping systems or portions of piping system.	3.12.5.1	A		
COL 3.12(3)	If the COL Applicant finds it necessary to lay ASME Code, Section III (Reference 3.12-2), Class 2 or 3 piping exposed to wind or tornado loads, then such piping must be designed to the plant design basis loads.	3.12.5.3.6	A		
COL 3.12(4)	The COL Applicant is to screen piping systems that are sensitive to high frequency modes for further evaluation.	3.12.5.6	A		
COL 3.13(1)	The COL Applicant is to provide information on procedures for effective corrosion protection for the stud bolting following head removal and allow the ISI to be performed on the removed RV stud bolting.	3.13.1.2.3		H	b

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Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 3.13(2)	The COL Applicant is to provide information on procedures for the final selection of lubricants, sealants, and cleaning fluids.	3.13.1.2.5		H	b
COL 3.13(3)	The COL Applicant is to retain quality records including certified material test reports for all property test and analytical work performed on nuclear threaded fasteners in accordance with the requirements of 10 CFR 50.71.	3.13.1.5	A		
COL 3.13(4)	The COL Applicant is to address compliance with ISI requirements as summarized in Subsection 3.13.2.	3.13.2		H	b
COL 3.13(5)	The COL Applicant is to commit to complying with the requirements of ASME Code, Section XI, IWA-5000 (Reference 3.13-14), and the requirements of 10 CFR 50.55a(b)(2)(xxvi) (Reference 3.13-11), Pressure Testing Class 1, 2, and 3 Mechanical Joints, and Paragraph (xxvii) Removal of Insulation.	3.13.2	A		
COL 4.4(1)	The Combined License applicant is to confirm whether the design limits of Min. DNBR described in Section 4.4 are valid based on the relevant plant-specific instrumentation uncertainties, or the safety analysis limit of Min. DNBR value covers the new design limits of Min. DNBR and other DNBR penalties such as rod bow penalty, transition core geometry and/or reserving more core operational flexibilities.	4.4.1.1.2		H	a

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 5.2(1)	ASME Code Cases that are approved in Regulatory Guide 1.84; The COL applicant addresses the addition of ASME Code Cases that are approved in Regulatory Guide 1.84.	5.2.1.2	A		
COL 5.2(2)	ASME Code Cases that are approved in Regulatory Guide 1.147; The COL applicant addresses Code Cases invoked in connection with the inservice inspection program that are in compliance with Regulatory Guide 1.147.	5.2.1.2		H	b
COL 5.2(3)	ASME Code Cases that are approved in Regulatory Guide 1.192; The COL applicant addresses Code cases invoked in connection with the operation and maintenance that are in compliance with Regulatory Guide 1.192.	5.2.1.2		H	b
COL 5.2(4)	Inservice inspection and testing program for the RCPB; The COL applicant addresses and develops the inservice inspection and testing program for the RCPB, in accordance with Section XI of the ASME Code and 10 CFR 50.55a.	5.2.4.1 Table 5.2.4-201 Table 13.4-201		H	b
COL 5.2(5)	Preservice inspection and testing program for the RCPB; The COL applicant addresses and develops the preservice inspection and testing program for the RCPB in accordance with Article NB-5280 of Section III, Division I of the ASME Code.	5.2.4.2		H	b
COL 5.2(6)	Deleted from the DCD.				

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 5.2(7)	Deleted from the DCD.				
COL 5.2(8)	Deleted from the DCD.				
COL 5.2(9)	Deleted from the DCD.				
COL 5.2(10)	Safety and relief valve information; The COL applicant addresses the actual throat area of the pressurizer safety valves and the CS/RHR pump suction relief valves.	5.2.2.4		H	a
COL 5.3(1)	Pressure-Temperature Limit Curves; The COL applicant addresses the use of plant-specific reactor vessel P-T limit curves. Generic P-T limit curves for the US-APWR reactor vessel are shown in Figures 5.3-2 and 5.3-3, which are based on the conditions described in Subsection 5.3.2. However, for a specific US-APWR plant, these limit curves are plotted based on actual material composition requirements and the COL applicant addresses the use of these plant-specific curves.	5.3.2.1 5.3.2.2		H	b
COL 5.3(2)	Reactor Vessel Material Surveillance Program; The COL applicant provides a reactor vessel material surveillance program based on information in Subsection 5.3.1.6.	5.3.1.6		H	b

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 5.3(3)	Surveillance Capsule Orientation and Lead Factors; The COL applicant addresses the orientation and resulting lead factors for the surveillance capsules of a particular US-APWR plant.	5.3.1.6.1	A		
COL 5.3(4)	Reactor Vessel Material Properties Verification; The COL applicant verifies the USE and RT _{NDT} at EOL, including a PTS evaluation based on actual material property requirements of the reactor vessel material and the projected neutron fluence for the design-life objective of 60 years.	5.3.1.1(DCD) 5.3.2.3 5.3.2.4	A		
COL 5.3(5)	Preservice and Inservice Inspection; The COL applicant provides the information for preservice and inservice inspection described in Subsection 5.2.4.	5.3.3.7		H	b
COL 5.4(1)	Deleted from the DCD.				
COL 5.4(2)	Deleted from the DCD.				
COL 5.4(3)	Deleted from the DCD.				
COL 5.4(4)	Deleted from the DCD.				
COL 5.4(5)	Deleted from the DCD.				
COL 5.4(6)	Deleted from the DCD.				
COL 5.4(7)	Deleted from the DCD.				

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 6.1(1)	The COL Applicant complies with the provisions and recommendations provided by ASME NQA-1-1994, Part II when developing programs that support the cleaning of materials and components, cleanness control, and pre-operational flushing for systems that contain austenitic stainless steel components as recommended by RG 1.37. This program includes documentation to verify the compatibility of materials used in manufacturing ESF components with ESF fluids.	6.1.1.2.2		H	b
COL 6.1(2)	The COL Applicant is responsible to develop an augmented ISI program to ensure the structural integrity of pressure-retaining cold-worked austenitic stainless steel components.	6.1.1.1		H	b
COL 6.1(3)	The COL Applicant is responsible to develop a program to maintain an inventory of all acids and bases within the containment to aid in control of pH within a post-LOCA environment.	6.1.1.2.1		H	b
COL 6.1(4)	The COL Applicant is responsible to identify materials within the containment that would yield hydrogen gas by corrosion from the emergency cooling or containment spray solutions, and their use should be limited as much as practicable.	6.1.1.2.1		H	a
COL 6.1(5)	The COL Applicant is responsible to identify and quantify all organic materials that exist in significant amounts in the containment (e.g., wood, plastics, lubricants, paint or coatings, electrical cable insulation, and asphalt). Coatings not intended for 60-year service without overcoating should include total overcoating thicknesses expected to be accumulated over the service life of the substrate surface.	6.1.2		H	a

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 6.1(6)	Deleted from the DCD.				
COL 6.2(1)	The COL applicant is responsible to provide best estimates of these heatsinks in the COL application, update the FSAR based on as-built information and confirm the values are bounded by the values in containment analyses.	6.2.1.1.3.4 6.2.1.5.7		H	a
COL 6.2(2)	Deleted from the DCD.				
COL 6.2(3)	Deleted from the DCD.				
COL 6.2(4)	Deleted from the DCD.				
COL 6.2(5)	Preparation of a cleanliness, housekeeping and foreign materials exclusion program is the responsibility of the COL applicant. This program addresses other debris sources such as latent debris inside containment. This program minimizes foreign materials in the containment.	6.2.2.3 Table 6.2.2-2R		H	b
COL 6.2(6)	As-built pipe run distances from outer containment isolation valve to the containment penetration are provided by the COL applicant.	6.2.4.2		H	a
COL 6.2(7)	The operating principle and accuracy of the combustible gas analyzers are provided by the COL applicant.	6.2.5.2		H	a
COL 6.2(8)	The COL applicant is responsible for the containment leakage rate testing program including, but not limited to, its preparation, exemptions, equipment, methods, procedures, conduct, limits, acceptance criteria, schedule, and reports.	6.2.6.1		H	b

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 6.2(9)	Selection, purchase, and installation of specific insulation products are controlled by administrative programs developed by the COL applicant.	6.2.2.3 Table 6.2.2-2R		H	b
COL 6.2(10)	Deleted from the DCD.				
COL 6.3(1)	Deleted from the DCD.				
COL 6.3(2)	Deleted from the DCD.				
COL 6.3(3)	The COL Applicant prepares normal, abnormal and emergency operating procedures for the ECCS, to include Safety Injection Pumps, Accumulators, and Emergency Letdown, including emergency operating instruction for feed-and-bleed operation.	6.3.2.8		H	b
COL 6.3(4)	The COL Applicant is responsible for developing a program to maintain RWSP water chemistry including surveillance test procedures.	6.3.2.2.4		H	b
COL 6.3(5)	Deleted from the DCD.				
COL 6.3(6)	The COL Applicant is responsible to prepare an as-built list of material used in or on the ECCS by their commercial names, quantities (estimate where necessary), and chemical composition and show that the radiolytic or pyrolytic decomposition products, if any, of each material will not interfere with the safe operation of this or any other ESF.	6.3.2.4		H	a

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 6.4(1)	The COL Applicant is responsible to provide details of specific toxic chemicals of mobile and stationary sources within the requirements of RG 1.78 and evaluate the control room habitability based on the recommendation of RG 1.78.	6.4.4.2	A		
COL 6.4(2)	The COL Applicant is responsible to prepare and implement normal, abnormal, and emergency operating procedures for the MCR HVAC system, to include the main control room emergency filtration system.	6.4.3		H	b
COL 6.4(3)	Deleted from the DCD.				
COL 6.4(4)	The COL Applicant is responsible to determine the charcoal absorber weight, type and distribution.	6.4.2.2.1		H	a
COL 6.4(5)	The number, locations, sensitivity, range, type, design of the toxic gas detectors are COL items. Depending on proximity to nearby industrial, transportation, and military facilities, and the nature of the activities in the surrounding area, as well as specific chemicals onsite, the COL Applicant is responsible to specify the toxic gas detection requirements necessary to protect the CRE.	6.4.6	A		
COL 6.5(1)	Deleted from the DCD.				
COL 6.5(2)	Deleted from the DCD.				
COL 6.5(3)	Deleted from the DCD.				

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 6.5(4)	The COL Applicant is responsible to provide an as-built list of material used in or on the ESF filter systems by their commercial names, quantities (estimate where necessary), and chemical composition and show that the radiolytic or pyrolytic decomposition products, if any, of each material will not interfere with the safe operation of this or any other ESF.	6.5.1.7		H	a
COL 6.6(1)	The COL Applicant is responsible for the preparation of a preservice inspection program (non-destructive baseline examination) and an inservice inspection program for ASME Code Section III Class 2 and 3 systems, components (pumps and valves), piping, and supports in accordance with 10 CFR 50.55a(g), including selection of specific examination techniques and preparing appropriate inspection procedures.	6.6		H	b
COL 6.6(2)	The COL Applicant is responsible for preparing an augmented inservice inspection program for high-energy fluid system piping.	6.6.8		H	b
COL 7.3(1)	Deleted from the DCD.				
COL 7.4(1)	The COL applicant is to provide a description of component controls and indications required for safe shutdown related to the UHS.	7.4.1.6 Table 7.4-201 Table 7.4-202	A		
COL 7.5(1)	The COL applicant is to provide a description of PAM variables related to the UHS.	7.5.1.1 Table 7.5-201	A		
COL 7.5(2)	The COL applicant is to provide a description of the site-specific EOF.	7.5.1.6.2	A		
COL 7.9(1)	Deleted from the DCD.				

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 8.2(1)	The COL applicant is to address transmission system of the utility power grid and its interconnection to other grids.	8.1.2.1 8.2.1.1 8.2.1.2.3 Table 8.2-201 Table 8.2-202 Figure 8.2-201	A		
COL 8.2(2)	Delete from the DCD.				
COL 8.2(3)	The COL applicant is to address plant switchyard includes layout, control system and characteristics of circuit breakers and buses.	8.1.1 8.1.5.3.5 8.2.1.2.1.1 8.2.1.2.1.2 8.2.1.2.2 Figure 8.1-1R Figures 8.2-202 – 8.2-208 Figure 8.3.1-1R Figure 8.3.1-2R	A		
COL 8.2(4)	The COL applicant is to provide detail description of normal preferred power.	8.2.1.2 Figure 8.2-202 Figure 8.2-203 Figure 8.2-207 Figure 8.2-208	A		
COL 8.2(5)	The COL applicant is to provide detail description of alternate preferred power.	8.2.1.2 Figure 8.2-202 Figure 8.2-204 Figure 8.2-207 Figure 8.2-208	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 8.2(6)	Deleted from the DCD.				
COL 8.2(7)	The COL applicant is to address protective relaying for each circuit such as lines and buses.	8.2.1.2.1.1 8.2.1.2.1.2 Figure 8.2-203 Figure 8.2-204 Figure 8.2-209 Figure 8.2-210	A		
COL 8.2(8)	The COL applicant is to address switchyard dc power as part of switchyard design description.	8.2.1.2.1.1 8.2.1.2.1.2	A		
COL 8.2(9)	The COL applicant is to address switchyard ac power as part of switchyard design description.	8.2.1.2.1.1 8.2.1.2.1.2	A		
COL 8.2(10)	The COL applicant is to address transformer protection corresponded to site-specific scheme.	8.2.1.2	A		
COL 8.2(11)	The COL applicant is to address stability and reliability study of the offsite power system. Stability study is to be addressed in accordance with BTP 8-3 (Reference 8.2-17). A failure modes and effects analysis (FMEA) is to be provided.	8.2.1.2.1.1 8.2.2.2 8.2.3 Table 8.2-203	A		
COL 8.2(12)	Deleted from the DCD.				
COL 8.3(1)	The COL applicant is to provide transmission voltages. This includes also MT and RAT voltage ratings.	8.3.1.1 Table 8.3.1-1R	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 8.3(2)	The COL applicant is to provide ground grid and lightning protection.	8.3.1.1.11		H	a
COL 8.3(3)	The COL applicant is to provide short circuit analysis for ac power system, since the system contribution is site specific.	8.3.1.1.9 8.3.1.3	A		
COL 8.3(4)	Deleted from the DCD.				
COL 8.3(5)	Deleted from the DCD.				
COL 8.3(6)	Deleted from the DCD.				
COL 8.3(7)	Deleted from the DCD.				
COL 8.3(8)	The COL applicant is to provide short circuit analysis for dc power system.	8.3.2.1.1 8.3.2.1.2 8.3.2.3	A		
COL 8.3(9)	Deleted from the DCD.				
COL 9.1(1)	The COL Applicant is to provide a program for monitoring the effectiveness of neutron poison present in the neutron absorbing panel.	9.1.2.2.2		H	a
COL 9.1(2)	Deleted from the DCD.				
COL 9.1(3)	Deleted from the DCD.				
COL 9.1(4)	Deleted from the DCD.				

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 9.1(5)	Deleted from the DCD.				
COL 9.1(6)	Deleted from the DCD.				
COL 9.1(7)	Deleted from the DCD.				
COL 9.1(8)	Deleted from the DCD.				
COL 9.2(1)	The COL Applicant is to provide the evaluation of ESWP at the lowest probable water level of the UHS.	9.2.1.3		A	
COL 9.2(2)	The COL Applicant is to provide the protection against adverse environmental, operating, and accident conditions that can occur, such as freezing, thermal overpressurization.	9.2.1.3		A	
COL 9.2(3)	The COL Applicant is to determine source and location of the UHS.	9.2.5.2		A	
COL 9.2(4)	The COL Applicant is to determine location and design of the ESW intake structure.	9.2.5.2		A	
COL 9.2(5)	The COL Applicant is to determine location and design of the ESW discharge structure.	9.2.5.2		A	
COL 9.2(6)	The COL Applicant is to provide ESWP design details – required total dynamic head, NPSH available etc.	9.2.1.2.2 9.2.1.2.2.1 Table 9.2.1-1R		A	

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 9.2(7)	The COL Applicant is to provide the piping, valves and other design of the ESWS related to the site specific condition, including the safety evaluation.	9.2.1.2.1 9.2.1.3 9.2.1.5.4 Figure 9.2.1-1R	A		
COL 9.2(8)	The COL Applicant is to specify ESW chemistry requirements.	9.2.1.2.1	A		
COL 9.2(9)	COL Applicant is to confirm the storage capacity and usage of the potable water.	9.2.4.1 9.2.4.2.2	A		
COL 9.2(10)	COL Applicant is to confirm that all State and Local Department of Health of Natural Resources Environmental Protection Standards are applied and followed.	9.2.4.1	A		
COL 9.2(11)	The COL Applicant is to confirm the source of potable water to the site and the necessary required treatment.	9.2.4.1 9.2.4.2.1 Figure 9.2.4-1R	A		
COL 9.2(12)	COL Applicant is to confirm that the sanitary waste is sent to the onsite plant treatment area or they will use the city sewage system.	9.2.4.1 9.2.4.2.1	A		
COL 9.2(13)	COL Applicant is to identify the potable water supply and describe the system operation.	9.2.4.2.3 9.2.4.4 9.2.4.5	A		
COL 9.2(14)	COL Applicant is to confirm Table 9.2.4-1 for required components and their values.	9.2.4.2.1 Table 9.2.4-1R	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 9.2(15)	The COL Applicant is to determine the total number of people at the site and identify the usage capacity. Based on these numbers the COL Applicant is to size the potable water tank and associated pumps.	9.2.4.1 9.2.4.2.2	A		
COL 9.2(16)	The COL Applicant is to provide values to the component Table 9.4.2-1 based on the calculations performed for COL 9.2.4.2.1.	Table 9.2.4-1R	A		
COL 9.2(17)	The COL Applicant is to determine the total number of sanitary lift stations and is to size the appropriate interfaces.	9.2.4.1 9.2.4.2.3	A		
COL 9.2(18)	The COL Applicant is to determine the type of the UHS based on specific site conditions and meteorological data.	9.2.5.1 9.2.5.2	A		
COL 9.2(19)	The COL Applicant is to design the UHS to receive its electrical power supply, if required by the UHS design, from safety busses so that the safety functions are maintained during LOOP. The UHS also receives its standby electrical power from the onsite emergency power supplies during a LOOP.	9.2.5.2	A		
COL 9.2(20)	The COL Applicant is to provide a detailed description and drawings of the UHS, including water inventory, temperature limits, heat rejection capabilities, instrumentation, and alarms.	9.2.5.2 Table 9.2.5-201 Figure 9.2.5-201	A		
COL 9.2(21)	The COL Applicant is to determine the source of make-up water to the UHS inventory and the blowdown discharge location based on specific site conditions.	9.2.5.2	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 9.2(22)	The COL Applicant is to provide results of UHS capability and safety evaluation of the UHS based on specific site conditions and meteorological data. The COL Applicant is to use at least 30 years site specific meteorological data and heat loads data for UHS performance analysis.	9.2.5.3 Table 9.2.5-202	A		
COL 9.2(23)	The COL Applicant is to provide test and inspection requirements of the UHS. These is to include inspection and testing requirements necessary to demonstrate that fouling and degradation mechanisms are adequately managed to maintain acceptable UHS performance and integrity.	9.2.5.4	A		
COL 9.2(24)	The COL Applicant is to provide the required alarms, instrumentation and controls details based on the type of UHS to be provided.	9.2.5.5	A		
COL 9.3(1)	The COL Applicant is to provide the high pressure nitrogen gas, low pressure nitrogen gas, the hydrogen gas, carbon dioxide, and oxygen supply systems.	9.3.1.2.1.3 9.3.1.2.2.3 Figure 9.3.1-201	A		
COL 9.3(2)	Deleted from the DCD.				
COL 9.3(3)	Deleted from the DCD.				
COL 9.3(4)	Deleted from the DCD.				
COL 9.3(5)	Deleted from the DCD.				
COL 9.3(6)	Deleted from the DCD.				

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 9.3(7)	Deleted from the DCD.				
COL 9.4(1)	Deleted from the DCD.				
COL 9.4(2)	Deleted from the DCD.				
COL 9.4(3)	Deleted from the DCD.				
COL 9.4(4)	The COL Applicant is to determine the capacity of cooling and heating coils that are affected by site specific conditions.	9.4.1.2 9.4.3.2.1 9.4.3.2.2 9.4.3.2.3 9.4.3.2.4 9.4.5.2.2 9.4.5.2.3 9.4.5.2.4 9.4.5.2.5 9.4.6.2.4.1 9.4.6.2.4.2 Table 9.4-201	A		
COL 9.4(5)	Deleted from the DCD.				
COL 9.4(6)	The COL Applicant is to provide a system information and flow diagram of ESW pump area ventilation system if the ESW pump area requires the heating, ventilating and air conditioning.	9.4.5 9.4.5.1.1.6 9.4.5.2.6 9.4.5.3.6 9.4.5.4.6 9.4.5.5.6 Table 9.4-202 Figure 9.4-201	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 9.5(1)	The COL applicant establishes a fire protection program, including organization, training and qualification of personnel, administrative controls of combustibles and ignition sources, firefighting procedures, and quality assurance.	9.5.1 9.5.1.6 Table 9.5.1-1R Table 9.5.1-2R		H	b
COL 9.5(2)	The COL Applicant addresses the design and fire protection aspects of the facilities, buildings and equipments, such as cooling towers and a fire protection water supply system, which are site specific and/or are not a standard feature of the US-APWR.	9.2.1.2.1 9.5.1.2.1 9.5.1.2.2 9.5.1.2.3 9.5.1.2.4 Table 9.5.1-1R Table 9.5.1-2R Figure 9.5-201 Figure 9.5-202 Appendix 9A	A		
COL 9.5(3)	The COL Applicant provides apparatus for plant personnel and fire brigades such as portable fire extinguishers and self contained breathing apparatus.	9.5.1.6.1.8 Table 9.5.1-2R	A		
COL 9.5(4)	The COL Applicant addresses all communication system interfaces external to the plant (offsite locations). These include interfaces to utility private networks, commercial carriers and the federal telephone system. The configuration of these connections will include consideration of the concerns raised in IE Bulletin 80-15.	9.5.2 9.5.2.2.2 9.5.2.2.2.2 9.5.2.2.5.1	A		
COL 9.5(5)	The COL Applicant addresses the emergency offsite communications including the crisis management radio system.	9.5.2.2.2 9.5.2.2.2.2 9.5.2.2.5.2	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 9.5(6)	The COL Applicant addresses connections to the Technical Support Center from where communications networks are provided to transmit information pursuant to the requirements delineated in 10 CFR 50 Appendix E, Part IV.E.9.	9.5.2.2.5.2	A		
COL 9.5(7)	The COL Applicant addresses a continuously manned alarm station required by 10 CFR 73.46(e)(5) and the communications requirements delineated in 10 CFR 73.45(g)(4)(i) and (ii). The COL Applicant addresses notification of an attempted unauthorized or unconfirmed removal of strategic special nuclear material in accordance with 10 CFR 73.45(e)(2)(iii).	9.5.2.2.5.2 9.5.2.3	A		
COL 9.5(8)	The COL Applicant addresses offsite communications for the onsite operations support center.	9.5.2.2.5.2	A		
COL 9.5(9)	The COL Applicant addresses the emergency communication system requirements delineate in 10 CFR 73.55(f) such that a single act cannot remove onsite capability of calling for assistance and also as redundant system during onsite emergency crisis.	9.5.2.2.5.2	A		
COL 9.5(10)	Deleted from the DCD.				
COL 10.2(1)	Inservice Inspection; The Combined License Applicant is to develop turbine maintenance and inspection procedure and then to implement prior to fuel load. Plant startup procedure including warm-up time will be completed therein.	10.2.3.5		H	b

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 10.3(1)	FAC monitoring program; The Combined License Applicant is to address preparation of an FAC monitoring program for carbon steel portions of the steam and power conversion systems that contain water or wet steam.	10.3.6.3	A		
COL 10.3(2)	Safety and relief valve information: The Combined License Applicant is to address the actual throat area of the MSSV.	10.3.2.3.2		H	a
COL 10.4(1)	Circulating Water System; The Combined License Applicant is to determine the site specific final system configuration and system design parameters for the CWS including makeup water and blowdown.	10.4.5	A		
COL 10.4(2)	Steam Generator Blowdown System; The Combined License applicant is to address the discharge to Waste Water System including site specific requirements.	10.4.8.1 10.4.8.2 10.4.8.5	A		
COL 10.4(3)	Deleted from the DCD.				
COL 10.4(4)	Deleted from the DCD.				
COL 10.4(5)	System Design for Steam Generator Drain; The Combined License applicant is to address the nitrogen or equivalent system design for Steam Generator Drain Mode. (This is dependent on Waste water system design)	10.4.8.2.2.4	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 11.2(1)	The COL applicant is responsible for ensuring that mobile and temporary liquid radwaste processing equipment and its interconnection to plant systems conforms to regulatory requirements and guidance such as 10 CFR 50.34a (Ref. 11.2-5), 10 CFR 20.1406 (Ref. 11.2-7) and RG 1.143 (Ref. 11.2-3), respectively.	11.2.1.6	A		
COL 11.2(2)	Site-specific information of the LWMS, e.g., radioactive release points, effluent temperature, shape of flow orifices, etc., is provided in the COLA.	11.2.2 11.2.3.1	A		
COL 11.2(3)	The COL applicant is responsible for providing site-specific hydrogeological data (such as contaminant migration time), and analysis to demonstrate that the potential groundwater contamination resulting from radioactive release due to liquid containing tank failure is bounded by the analysis discussed in Subsection 11.2.3.2.	11.2.3.2	A		
COL 11.2(4)	The COL applicant is to calculate doses to members of the public following the guidance of RG 1.109 (Ref 11.2-15) and RG 1.113 using site-specific parameters, and compares the doses due to the liquid effluents with the numerical design objectives of Appendix I to 10 CFR 50 (Ref 11.2-10) and compliance with requirements of 10 CFR 20.1302, 40 CFR 190.	11.2.3.1 Table 11.2-10R Table 11.2-11R Table 11.2-12R Table 11.2-13R Table 11.2-14R Table 11.2-15R	A		
COL 11.2(5)	The COL applicant is to perform a site-specific cost benefit analysis to demonstrate compliance with the regulatory requirements.	11.2.1.5	A		
COL 11.2(6)	The COL applicant is to provide piping and instrumentation diagrams (P&IDs).	11.2.2 Figure 11.2-201	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 11.3(1)	Deleted from the DCD.				
COL 11.3(2)	Deleted from the DCD.				
COL 11.3(3)	The COL applicant is to provide a discussion of the onsite vent stack design parameters and release point specific characteristics.	11.3.2	A		
COL 11.3(4)	Deleted from the DCD				
COL 11.3(5)	The COL applicant is to prepare a plan for offsite dose calculation manual in accordance with the guidance of NUREG-1301(Ref. 11.3-20), NUREG- 0133(Ref. 11.3-21), and Regulatory Guides 1.109(Ref. 11.3-19), 1.111(Ref. 11.3-22), or 1.113(Ref. 11.3-23), containing site-specific requirements.	11.3.3.3		H	b
COL 11.3(6)	The COL applicant is to calculate doses to members of the public following the guidance of RG 1.109(Ref. 11.3-19) and RG 1.111(Ref. 11.3-22), and compare the doses due to the gaseous effluents with the numerical design objectives of 10 CFR 50, Appendix I (Ref. 11.3-3) and compliance with requirements of 10 CFR 20.1302(Ref. 11.3-24), 40 CFR 190(Ref. 11.3-25).	11.3.3.1 Table 11.3-8R Table 11.3-9R Table 11.3-201 Table 11.3-202 Table 11.3-203 Table 11.3-204 Table 11.3-205	A		
COL 11.3(7)	Deleted from the DCD.				
COL 11.3(8)	The COL applicant is to perform a site-specific cost benefit analysis to demonstrate compliance with the regulatory requirements.	11.3.1.5	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 11.3(9)	The COL applicant is to provide piping and instrumentation diagrams (P&IDs).	11.3.2 Figure 11.3-201	A		
COL 11.4(1)	The current design meets the waste storage requirements in accordance with ANSI/ANS-55.1. When the COL applicant desires additional storage capability beyond that which is discussed in this Tier 2 document, the COL applicant will identify plant-specific needs for on-site waste storage and provide a discussion of on-site storage of low-level waste.	11.4.2.1.1 11.4.2.3	A		
COL 11.4(2)	Deleted from the DCD.				
COL 11.4(3)	The COL applicant is to prepare a plan for the process control program describing the process and effluent monitoring and sampling program. The plan should include the proposed implementation milestones.	11.4.3.2		H	b
COL 11.4(4)	The COL applicant is responsible for the identification of mobile/portable SWMS connections that are considered non-radioactive but later may become radioactive through contact or contamination with radioactive systems (i.e., a non-radioactive system becomes contaminated due to leakage, valving errors, or other operating conditions in the radioactive systems). The COL applicant is to prepare a plan to develop and use operating procedures so that the guidance and information in Inspection and Enforcement (IE) Bulletin 80-10 (Ref. 11.4-29) is followed.	11.4.4.5		H	b

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 11.4(5)	The current design provides collection and packaging of dry active wastes for offsite shipment and/or disposal. Depending on site-specific requirements, the COL applicant can send the wastes for offsite laundry facility processing and/or bring in a mobile compaction unit for volume reduction. The temporary mobile compaction subsystem is a COL item.	11.4.1.3 11.4.1.6	A		
COL 11.4(6)	The COL applicant is required to perform a site-specific cost benefit analysis to demonstrate compliance with the regulatory requirements.	11.4.1.5	A		
COL 11.4(7)	The COL applicant can adopt solid waste processing facility (e.g. dewatering system, compactor for reducing waste volume) depending on site-specific requirements. These facilities are COL item.	11.4.1.6 11.4.4.5	A		
COL 11.4(8)	The COL applicant is to provide piping and instrumentation diagrams (P&IDs).	11.4.2.2.1 Figure 11.4-201	A		
COL 11.5 (1)	The COL applicant is responsible for the additional site-specific aspects of the process and effluent monitoring and sampling system beyond the standard design, in accordance with RGs 1.21, 1.33 and 4.15 (Ref. 11.5-12, 11.5-17, 11.5-14). Furthermore, the COL applicant is responsible for assuring the fulfillment of the guidelines issued in 10 CFR 50, Appendix I (Ref. 11.5-3) regarding the offsite doses released through gaseous and liquid effluent streams.	11.5.2.9	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 11.5(2)	The COL applicant is to prepare an offsite dose calculation manual to provide specific administrative controls and liquid and gaseous effluent source terms to limit the releases to site-specific requirements containing a description of the methods and parameters that drive to arrive radiation instrumentation alarm setpoint. The COL applicant is to commit to follow the NEI generic template 07-09 (Ref. 11.5-30) as an alternative to providing the offsite dose calculation manual at the time of application.	11.5.2.7 11.5.2.9		H	b
COL 11.5(3)	The COL applicant is to develop a radiological and environmental monitoring program taking into consideration local land use and census data in identifying all potential radiation exposure pathways. The program shall take into account associated radioactive materials present in liquid and gaseous effluents and direct external radiation from SSCs. The COL applicant is to follow the guidance outlined in NUREG-1301(Ref. 11.5-21), and NUREG-0133 (Ref. 11.5-18) when developing the radiological effluent monitoring program. The COL applicant is to commit to follow the NEI generic template 07-09 (Ref. 11.5-30) as an alternative to providing the radiological effluent monitoring program at the time of application.	11.5.2.10		H	b
COL 11.5(4)	The COL applicant is to develop procedures which are of inspection, decontamination, and replacement related to radiation monitoring instruments.	11.5.2.6 11.5.2.8	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 11.5(5)	The COL applicant is to provide analytical procedures and sensitivity for selected radioanalytical methods and type of sampling media for site-specific matter.	11.5.2.6 11.5.2.8		H	a
COL 11.5(6)	The COL applicant is to perform a site-specific cost benefit analysis to demonstrate compliance with the regulatory requirements.	11.5.2.11	A		
COL 12.1(1)	The COL Applicant is to demonstrate that the policy considerations regarding plant operations are compliance with RG 1.8, 8.8, and 8.10.	12.1.1.3.1 12.1.1.3.2 12.1.1.3.3	A		
COL 12.1(2)	Deleted from the DCD.				
COL 12.1(3)	The COL Applicant is to describe how the plant follows the guidance of RG 8.2, 8.4, 8.6, 8.7, 8.9, 8.13, 8.15, 8.20, 8.25, 8.26, 8.27, 8.28, 8.29, 8.32, 8.34, 8.35, 8.36, and 8.38.	12.1.3	A		
COL 12.1(4)	Deleted from the DCD.				
COL 12.1(5)	The COL Applicant is to provide the operational radiation protection program for ensuring that occupational radiation exposures are ALARA.	12.5		H	b
COL 12.2(1)	The COL Applicant is responsible for the use of any additional contained radiation sources that are not identified in subsection 12.2.1, including radiation sources used for instrument calibration or radiography.	12.2.1.1.10		H	a

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 12.2(2)	The COL Applicant is to provide the detailed design of additional storage space for radwaste and/or additional radwaste facilities for dry active waste.	12.2.1.1.10 12.5	A		
COL 12.3(1)	The COL Applicant is responsible for the use of portable instruments, and the associated training and procedures, to accurately determine the airborne iodine concentration in areas within the facility where plant personnel may be present during an accident, in accordance with the requirements of 10 CFR 50.34(f)(2)(xxvii) and the criteria in Item III.D.3.3 of NUREG-0737.	12.3.4 12.5	A		
COL 12.3(2)	Deleted from the DCD.				
COL 12.3(3)	Deleted from the DCD.				
COL 12.3(4)	The COL Applicant is to provide the site radiation zones that is shown on the site-specific plant arrangement plan.	12.3.1.2.1.1 Figure 12.3-1R	A		
COL 12.3(5)	The COL Applicant is to discuss the administrative control of the fuel transfer tube inspection and the access control of the area near the seismic gap below the fuel transfer tube.	12.3.2.2.8 12.5	A		
COL 12.4(1)	For multiunit plants, the COL Applicant is to provide estimated annual doses to construction workers in a new unit construction area, as a result of radiation from onsite radiation sources from the existing operating plant(s).	12.4.1.9 Table 12.4-201	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 13.1(1)	The COL Applicant is to provide a description of the corporate or home office organization, its functions and responsibilities, and the number and qualifications of personnel. The COL Applicant directs attention to activities that include facility design, design review, design approval, construction management, testing, and operation of the plant.	13.1-13.1.1.2.5 Figures 13.1-201 – 204 Appendix 13AA	A		
COL 13.1(2)	The COL Applicant is to develop a description of past experience in the design, construction, and operation of nuclear power plants and past experience in activities of similar scope and complexity.	13.1.1.1	A		
COL 13.1(3)	The COL Applicant is to describe its management, engineering, and technical support organizations. The description includes organizational charts for the current headquarters and engineering structure and any planned modifications and additions to those organizations that reflect the added functional responsibilities with the nuclear power plant.	13.1.1.2.2	A		
COL 13.1(4)	The COL Applicant is to develop a description of the organizational arrangement is designated as the responsibility of the COL Applicant. This description shows how the added functional responsibilities associated with the addition of the nuclear power plant to the Applicant's power generation capacity are delegated and assigned (or expected to be assigned to each of the working or performance-level organizational units to implement these responsibilities). The description includes organizational charts reflecting the current corporate structure and the specific working- or performance-level organizational units that provide technical support for the operation.	13.1-13.1.1.2.5 Figures 13.1-201 - 204	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 13.1(5)	The COL Applicant is to develop the description of the general qualification requirements in terms of educational background and experience COL requirements for positions or classes of positions depicted in the organizational arrangement.	13.1.3	A		
COL 13.1(6)	The COL Applicant is to develop the organizational structure for the plant organization, its personnel responsibilities and authorities, and operating shift crews.	13.1.2 - 13.1.2.6 Table 13.1-203 Figures 13.1-202 - 204	A		
COL 13.1(7)	The COL Applicant is to develop the description of education, training, and experience requirements established for management, operating, technical, and maintenance positions for the operating organization.	13.1.3	A		
COL 13.2(1)	The COL Applicant is to develop the training program description.	13.2	A		
COL 13.2(2)	The COL Applicant is to in accordance with NUREG-0800, Section 13.2.1.1.3 (Ref. 13.2-4), develop training programs for reactor operators.	13.2	A		
COL 13.2(3)	The COL Applicant is to In accordance with NUREG-0800, Section 13.2.2.1.3 (Ref. 13.2-4), develop training programs for non-licensed plant staff.	13.2	A		
COL 13.2(4)	The COL Applicant is to develop training programs. These programs include a chart, which shows the schedule of each part of the training program for each functional group of employees in the organization in relation to the schedule for preoperational testing, expected fuel loading, and expected time for examinations prior to plant criticality for licensed operators.	13.2	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 13.2(5)	The COL Applicant is to determine the extent to which portions of applicable NRC guidance is used in the facility training program or the justification of exceptions.	13.2	A		
COL 13.3(1)	The COL Applicant is to develop interfaces of design features with site specific designs and site parameters.	13.3	A		
COL 13.3(2)	The COL Applicant is to develop a comprehensive emergency plan as a physically separate document.	13.3.1	A		
COL 13.3(3)	The COL Applicant is to develop an emergency classification and action level scheme.	13.3.1	A		
COL 13.3(4)	The COL Applicant is to develop the security-related aspects of emergency planning.	13.3.1	A		
COL 13.3(5)	The COL Applicant is to develop a multi-unit site interface plan depending on the location of the new reactor on, or near, an operating reactor site with an existing emergency plan.	13.3.2	A		
COL 13.3(6)	The COL Applicant is to develop an emergency planning inspections, tests, analyses, and acceptance criteria.	13.3.3	A		
COL 13.3(7)	The COL Applicant is to develop the description of the operation support center.	13.3	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 13.4(1)	The COL Applicant is to develop a description and schedule for the implementation of operational programs. The COL Applicant is to “fully describe” the operational programs as defined in SECY-05-0197 (Ref. 13.4-1) and provide commitments for the implementation of operational programs required by regulation. In some instances, programs may be implemented in phases. The COL Applicant is to include the phased implementation milestones in their submittal.	13.4 Table 13.4-201 FSAR sections referenced therein		H	b
COL 13.5(1)	The COL Applicant is to develop administrative procedures describing administrative controls over activities that are important to safety for the operation of a facility.	13.5-13.5.1.2		H	b
COL 13.5(2)	Deleted from the DCD.				
COL 13.5(3)	The COL Applicant is to develop procedures performed by licensed operators in the main control room. Operating procedures that are used by the operating organization to ensure routine operating, off-normal, and emergency activities are conducted in a safe manner are described. The plan includes the implementation of these procedures (Ref. 13.5-3).	13.5.2		H	b
COL 13.5(4)	The COL Applicant is to describe the different classifications of procedures the operators will use in the main control room and locally in the plant for operations, the operating organization responsible for maintaining the procedures, and the general format and content of the different classifications.	13.5.2	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 13.5(5)	The COL Applicant is to describe the program for developing operating procedures.	13.5.2	A		
COL 13.5(6)	The COL Applicant is to describe the program for developing and implementing emergency operating procedures.	13.5.2	A		
COL 13.5(7)	The COL Applicant is to describe the classifications of maintenance and other operating procedures, the operating organization group or groups responsible for following each class of procedure, and the general objectives and character of each class and subclass.	13.5.2.2	A		
COL 13.6(1)	The COL Applicant is to develop the security assessment, plant overall security plan, an implementation schedule for the security programs, and proposed inspection, test, analysis, and acceptance criteria for physical security hardware.	13.6 Table 13.4-201	A		
COL 13.7(1)	The COL Applicant is to develop the description of the operating and construction (upon approval of revised 10 CFR 26) plant fitness-for-duty programs.	13.7	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 14.2(1)	The COL applicant is responsible for describing the program for the testing of other components and systems that are site-specific. Testing of these items demonstrates that they meet requirements as defined in the Final Safety Analysis Report (FSAR). [14.2.1]	14.2.1 Appendix 14AA	A		
COL 14.2(2)	The COL applicant provides a description of the organization(s) responsible for all phases of the ITP, and provides a description of the administrative controls that assure that experienced and qualified supervisory personnel and other principal participants are responsible for managing, developing, and conducting the ITP. [14.2.2]	14.2.2 Appendix 14AA	A		
COL 14.2(3)	The COL applicant provides the process used to develop test specifications and test procedures. [14.2.3]	14.2.3 Appendix 14AA	A	H	b
COL 14.2(4)	The COL applicant develops a description of the administrative controls that govern the conduct of test program. These controls include requirements that govern the activities of the startup organization and their interface with other organizations. [14.2.4]	14.2.4 Appendix 14AA	A		
COL 14.2(5)	The COL applicant develops a description of the specific controls for the review, evaluation, and approval of test results of the program by appropriate personnel and/or organizations, including the methods and schedules for approval of test data for each major phase. [14.2.5]	14.2.5 Appendix 14AA	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 14.2(6)	The COL applicant develops a description of the specific controls for the preparation and retention of test records. [14.2.6]	14.2.6 Appendix 14AA	A		
COL 14.2(7)	The COL applicant provides a schedule for the development of plant procedures that assures required procedures are available for use during the preparation, review and performance of preoperational and startup testing. [14.2.9]	14.2.9		H	c
COL 14.2(8)	The COL applicant provides an event-based schedule, relative to fuel loading, for conducting each major phase of the test program. For multiunit sites, the COL applicant discusses the effects of overlapping initial test program schedules on organizations and personnel participating in each ITP. [14.2.11]	14.2.11		H	c
COL 14.2(9)	The COL applicant identifies and cross-references each test or portion of a test required to be completed prior to fuel load which satisfies ITAAC requirements. [14.2.11]	14.2.11 Table 14.2-202	A		
COL 14.2(10)	The COL applicant is responsible for the testing outside scope of the certified design in accordance with the test criteria described in subsection 14.2.1. And testing of the following is required. [14.2.12] · Personnel monitors and radiation survey instruments	14.2.12.1.112 14.2.12.1.113 14.2.12.1.114 Table 14.2-201 Appendix 14A	A		
COL 14.3(1)	The COL applicant provides the ITAAC for the site specific portion of the plant systems specified in Subsection 14.3.5, Interface Requirements. [14.3.4.7]	14.3.4.7	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 14.3(2)	The COL applicant provides proposed ITAAC for the facility's emergency planning not addressed in the DCD in accordance with RG 1.206 (Reference 14.3-1) as appropriate. [14.3.4.10]	14.3.4.10	A		
COL 14.3(3)	Deleted from the DCD.				
COL 15.0(1)	In the COLA, if the site-specific χ/Q values exceed DCD χ/Q values, then the COL Applicant is to demonstrate how the dose reference values in 10 CFR 50.34 and the control room dose limits in 10 CFR 50, Appendix A, General Design Criteria 19 are met for affected events using site-specific χ/Q values.	15.0.3.3	A		
COL 16.1(1)	Adoption of RMTS is to be confirmed and the relevant descriptions are to be fixed.	16.1.1.2 COLA Part 4, Section A	A		
COL 16.1(2)	Adoption of SFCP is to be confirmed and the relevant descriptions are to be fixed.	16.1.1.2 COLA Part 4, Section A	A		
COL 16.1_3(1)	Deleted from the DCD.				
COL 16.1_3.3.1(1)	The trip setpoints and allowable values in Table 3.3.1-1 are to be confirmed after completion of a plant specific setpoint study following selection of the plant specific instrumentation.	COLA Part 4, Section A		H	a

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 16.1_3.3.2(1)	The trip setpoints and allowable values and time delay value in Table 3.3.2-1 are to be confirmed after completion of a plant specific setpoint study following selection of the plant specific instrumentation.	COLA Part 4, Section A	A	H	a
COL 16.1_3.3.5(1)	The trip setpoints and time delay values in SR 3.3.5.3 are to be confirmed after completion of a plant specific setpoint study following selection of the plant specific instrumentation.	COLA Part 4, Section A	A	H	a
COL 16.1_3.3.6(1)	The trip setpoints and allowable values in Table 3.3.6-1 are to be confirmed after completion of a plant specific setpoint study following selection of the plant specific instrumentation.	COLA Part 4, Section A		H	a
COL 16.1_3.4.17(1)	The site specific information for tube repair is to be provided.	COLA Part 4, Section A	A		
COL 16.1_3.7.9(1)	LCO 3.7.9 and associated Bases for the Ultimate Heat Sink based on plant specific design are to be developed.	COLA Part 4, Section A	A		
COL 16.1_3.7.10(1)	LCO 3.7.10 and associated Bases for hazardous chemical are to be confirmed by the evaluation with site-specific condition.	COLA Part 4, Section A	A		
COL 16.1_3.8.4(1)	The battery float current values in required action A.2 is to be confirmed after selection of the plant batteries.	COLA Part 4, Section A	A		
COL 16.1_3.8.5(1)	The battery float current values in required action A.2 is to be confirmed after selection of the plant batteries.	COLA Part 4, Section A	A		

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 16.1_3.8.6(1)	The battery float current values in condition B, required action B.2, and SR 3.8.6.1 are to be confirmed after selection of the plant batteries.	COLA Part 4, Section A	A		
COL 16.1_4.1(1)	The site specific information for site location is to be provided.	COLA Part 4, Section A	A		
COL 16.1_4.3.1(1)	The site specific boron concentration is to be provided.	COLA Part 4, Section A	A		
COL 16.1_5.1.1(1)	The titles for members of the unit staff are to be specified.	COLA Part 4, Section A	A		
COL 16.1_5.1.2(1)	The titles for members of the unit staff are to be specified.	COLA Part 4, Section A	A		
COL 16.1_5.2.1(1)	The titles for members of the unit staff are to be specified.	COLA Part 4, Section A	A		
COL 16.1_5.2.2(1)	The titles and number for members of the unit staff are to be specified.	COLA Part 4, Section A	A		
COL 16.1_5.3.1(1)	Minimum qualification for unit staff is to be specified.	COLA Part 4, Section A	A		
COL 16.1_5.5.1(1)	The titles for members of the unit staff that approve the Offsite Dose Calculation Manual are to be specified.	COLA Part 4, Section A	A		

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Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 16.1_5.5.9(1)	The site specific information for tube repair is to be provided.	COLA Part 4, Section A	A		
COL 16.1_5.5.20(1)	Control Room Envelope Habitability Program for hazardous chemical are to be confirmed by the evaluation with site-specific condition.	COLA Part 4, Section A	A		
COL 16.1_5.6.1(1)	In case of multiple unit site, the additional information for submittal of report is to be added.	COLA Part 4, Section A	A		
COL 16.1_5.6.1(2)	The format of the Annual Radiological Environmental Operating Report is to be specified based on "the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979" or another format.	COLA Part 4, Section A	A		
COL 16.1_5.6.2(1)	In case of multiple unit site, the additional information for submittal of report is to be added.	COLA Part 4, Section A	A		
COL 16.1_5.6.7(1)	The site specific information for tube repair is to be provided.	COLA Part 4, Section A	A		
COL 16.1_5.7(1)	The site specific information about High Radiation Area is to be provided.	COLA Part 4, Section A	A		

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Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 17.4(1)	The COL Applicant shall be responsible for the development and implementation of the Phases II and III of the D-RAP. In the Phase II, the plant's site-specific information should be introduced to the D-RAP process and the site-specific SSCs should be combined with the US-APWR design SSCs into a list for the specific plant. In the Phase III, procurement, fabrication, construction, and test specifications for the SSCs within the scope of the RAP should ensure that significant assumptions, such as equipment reliability, are realistic and achievable. The QA requirements should be implemented during the procurement, fabrication, construction, and pre-operation testing of the SSCs within the scope of the RAP.	17.4.3 17.4.4 17.4.7 17.4.8 Table 17.4-201	A	H	b
COL 17.4(2)	The COL Applicant shall be responsible for the development and implementation of the O-RAP, in which the RAP activities should be integrated into the existing operational program (i.e., Maintenance Rule, surveillance testing, in-service inspection, in-service testing, and QA). The O-RAP should also include the process for providing corrective actions for design and operational errors that degrade nonsafety- related SSCs within the scope of the RAP.	17.4.3 17.4.4 17.4.5 17.4.7		H	b
COL 17.5(1)	The COL applicant shall develop and implement the Design other than the Design Certification, construction and operational QAP that also covers the activities described in Section 17.5.	17.0 17.1 17.2 17.3 17.5	A		
COL 17.6(1)	The COL applicant develops and implements the program for implementation of 10 CFR 50.65, the Maintenance Rule.	17.6		H	b

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COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 18.1(1)	Deleted from the DCD.				
COL 18.1(2)	Deleted from the DCD.				
COL 18.3(1)	Deleted from the DCD.				
COL 18.3(2)	Deleted from the DCD.				
COL 18.4(1)	Deleted from the DCD.				
COL 18.4(2)	Deleted from the DCD.				
COL 18.4(3)	Deleted from the DCD.				
COL 18.5(1)	Deleted from the DCD.				
COL 18.5(2)	Deleted from the DCD.				
COL 18.6(1)	Deleted from the DCD.				
COL 18.6(2)	Deleted from the DCD.				
COL 18.7(1)	Deleted from the DCD.				

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Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 18.8(1)	Deleted from the DCD.				
COL 18.9(1)	Deleted from the DCD.				
COL 18.10(1)	Deleted from the DCD.				
COL 18.10(2)	Deleted from the DCD.				
COL 18.11(1)	Deleted from the DCD.				
COL 18.11(2)	Deleted from the DCD.				
COL 18.12(1)	Deleted from the DCD.				
COL 19.3(1)	The COL Applicant who intends to implement risk-managed technical specifications continues to update Probabilistic Risk Assessment and Severe Accident Evaluation to provide PRA input for risk-managed technical specifications.	19.1.7.6		H	a, b
COL 19.3(2)	Deleted from the DCD.				
COL 19.3(3)	To provide PRA input to the reactor oversight process is a responsibility of the COL Applicant.	19.1.7.3	A		

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Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale
COL 19.3(4)	The Probabilistic Risk Assessment and Severe Accident Evaluation is updated as necessary to assess specific site information and associated site-specific external events (high winds and tornadoes, external floods, transportation, and nearby facility accidents).	19.1.1.2.1 19.1.4.1.2 19.1.4.2.2 19.1.5 19.1.5.2.2 19.1.5.3.2 19.1.6.2 19.2.6.1 19.2.6.1.1 19.2.6.2 19.2.6.4 19.2.6.5 19.2.6.6 Table 19.1-201 Table 19.1-202 Table 19.1-203 Table 19.2-9R Figure 19.1-201	A		
COL 19.3(5)	When the design activity progresses and specific design data becomes available, SSC fragilities are updated during the COLA phase to reflect specific design data.	19.1.5.1.1		H	a
COL 19.3(6)	The COL applicant develops an accident management program based on the U.S. industry initiated and coordinated program in this area and related information from efforts on an international front.	19.2.5		H	b

Note:

The designation of the rationale indicates that this COL item includes the following information and can not be resolved prior to the COL issuance:

- a: Detailed design information
 - b: Operational programs/other procedures
 - c: Development of detailed schedule
- (See Subsection 1.8.1.2 for further discussion.)

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1.9 CONFORMANCE WITH REGULATORY CRITERIA

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP COL 1.9(1) Replace the last paragraph of DCD Section 1.9 with the following.

Subsection 1.9.1 discusses the conformance with regulatory guides for the operational aspect and portions of the facility design that are not included in the DCD.

Subsections 1.9.2 and 1.9.3 address an evaluation for the Standard Review Plan (SRP) revision and generic issues which are identified in the revision of NUREG-0933 in effect six months before the docketing date of the application. This evaluation contains the operational aspect and portions of the facility design that are not included in the DCD. The additional status for the Three Miles Island (TMI) requirements is also included in Subsection 1.9.3.

Subsection 1.9.4 provides the evaluation for the generic communications (i.e., generic letters and bulletins) and Japanese pressurized-water reactors (PWRs) operating experience. These experiences are evaluated up to six months before the submittal date of the COLA.

1.9.1 Conformance with Regulatory Guides

CP COL 1.9(1) Add the following paragraphs at the end of DCD Subsection 1.9.1.

For the portions of the CPNPP Units 3 and 4 design that are not included in the referenced certified design, Tables 1.9-201 through 1.9-203 address conformance with regulatory guides in effect in March 2008, i.e., six months before COLA submittal. Each table provides an evaluation of conformance with a group of regulatory guides, as applicable for the required RG divisions. The tables show the RG numbers, titles, status, revision: chapter, section and subsection of the FSAR that corresponds to the particular RGs.

The status of each item is reported as "Conformance", "Conformance with exceptions", or "Not applicable".

Division 4 of the RGs applies to the Environmental Report, and those topics are addressed in the COLA Part 3. Table 1.9-202 provides an additional evaluation of conformance with Division 4 of the RGs as applicable to the content of this FSAR. Division 5 of the RGs applies to the Physical Security Plan, and those topics are addressed in the COLA Part 8.

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1.9.2 Conformance with Standard Review Plan

CP COL 1.9(1) Add the following paragraph after the last paragraph in DCD Subsection 1.9.2.

Conformance with the SRP in effect in May 2008 for the portions of the CPNPP Units 3 and 4 design and programs not included in the referenced certified design is addressed in Tables 1.9-204 through 1.9-218. The tables show the evaluation of conformance with the standard review plan for this FSAR. When additional evaluation is provided to the DCD status, the status is reported in the column "COLA FSAR Status" and the column "Appears in FSAR Chapter/Section" shows appropriate reference FSAR sections.

1.9.3 Generic Issues

CP COL 1.9(1) Add the following paragraphs after the last paragraph in DCD Subsection 1.9.3.

In the US-APWR DCD, the most recent revision of NUREG-0933 (September 2007) was consulted for generic communications, and those issues were addressed in a way that is also appropriate for purposes of this COLA FSAR. The most current revision of NUREG-0933 is still September 2007. Therefore, there is no additional evaluation of generic safety issues in the FSAR. Subsection 1.9.4 provides the review for the recent generic communications (i.e., bulletins and generic letters) issued by the NRC in order to incorporate current operational experience.

The five TMI related requirements annotated in DCD Table 1.9.3-2 as being completely or partially the COL applicant's responsibility are addressed in Table 1.9-219.

1.9.4 Operational Experience (Generic Communications)

CP COL 1.9(1) Add the following text after the first paragraph in DCD Subsection 1.9.4.

Luminant has reviewed those generic communications issued between March 2007 and March 2008 that are applicable to the portions of the CPNPP Units 3 and 4 design not included in the design certification. Evaluations of those items are presented in Table 1.9-220. Information from these documents is taken from NRC Bulletins and NRC Generic Letters as of December 12, 2007. The table

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contains columns for the generic issue document (including number, title, and date), language excerpted from the document that communicates the substance of the issue, CPNPP Units 3 and 4 Comments on applicability, and references to the relevant subject matter in the CPNPP Units 3 and 4 FSAR.

1.9.6 Combined License Information

Replace the content of DCD Subsection 1.9.6 with the following.

CP COL 1.9(1) **1.9(1)** *Conformance with regulatory guidance*

This COL item is addressed in Section 1.9, Subsections 1.9.1 through 1.9.4, and Tables 1.9-201 through 1.9-220.

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CP COL 1.9(1)

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.8	Qualification and Training of Personnel for Nuclear Power Plants	Revision 3 May 2000	Conformance with exceptions (Criterion 2: The minimum qualification requirement of the plant staff conforms to CPNPP Units 3 and 4 technical specification and Chapter 13. And QA conforms to quality assurance program description [QAPD].)	12.1.1.3.1 13.1 13.2 14.2 Appendix 14AA COLA Part 4
1.12	Nuclear Power Plant Instrumentation for Earthquakes	Revision 2 March 1997	Conformance	3.7.4 13.4
1.16	Reporting of Operating Information – Appendix A Technical Specifications	Revision 4 August 1975	Conformance with exceptions (CPNPP Units 3 and 4 conform to 10 CFR 50.72 and 50.73 and technical specification requirement.)	14.2.6 14.2.7 COLA Part 4
1.21	Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants	Revision 1 June 1974	Conformance with exceptions (ANSI N13.1-1999 is applied in C.6.)	3.1.6 11.5.1 11.5.2 12.3.4
1.23	Meteorological Monitoring Programs for Nuclear Power Plants	Revision 1 March 2007	Conformance	2.3.3 2.3.4
1.24	Assumptions Used for Evaluating the Potential Radiological Consequences of a Pressurized Water Reactor Radioactive Gas Storage Tank Failure	Revision 0 March 1972	Conformance	11.3.3

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Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 1 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.27	Ultimate Heat Sink for Nuclear Power Plants	Revision 2 January 1976	Conformance	2.4.2 - 2.4.4 2.4.11 9.2.1.3 9.2.5 COLA Part 4
1.28	Quality Assurance Program Requirements (Design and Construction)	Revision 3 August 1985	Conformance with exception (QAPD conforms with SRP 17.5 and NQA-1 1994 Edition.)	14.2.7 17.2 17.5
1.29	Seismic Design Classification	Revision 4 March 2007	Conformance	2.4.2 - 2.4.4 3.2
1.30	Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment	Revision 0 August 1972	Conformance with exception (QAPD conforms with SRP 17.5 and NQA-1 1994 Edition.)	14.2.7 17.5
1.33	Quality Assurance Program Requirements (Operation)	Revision 2 February 1978	Conformance with exception (QAPD conforms with SRP 17.5 and NQA-1 1994 Edition.)	11.5.2 13.1 13.5 17.2 17.5 COLA Part 4
1.35	In-Service Inspection (ISI) of UngROUTED Tendons in Prestressed Concrete Containments	Revision 3 July 1990	Conformance (Note: limited to design considerations; implementation of ISI physical inspection will be by COL holder)	3.8.1.2 3.8.1.7
1.37	Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants	Revision 1 March 2007	Conformance (Note: QAPD commits to RG 1.37, in accordance with SRP 17.5.)	14.2.7 Appendix 14AA 17.2 17.5

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.38	Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants	Revision 2 May 1977	Conformance with exception (QAPD conforms with SRP 17.5 and Subpart 2.2 of NQA-1 1994 Edition.)	17.2 17.5
1.39	Housekeeping Requirements for Water-Cooled Nuclear Power Plants	Revision 2 September 1977	Conformance with exception (QAPD conforms with SRP 17.5 and NQA-1 1994 Edition.)	17.2 17.5
1.54	Service Level I, II, and III Protective Coatings Applied to Nuclear Power Plants	Revision 1 July 2000	Conformance	6.1.2
1.59	Design Basis Floods for Nuclear Power Plants	Revision 2 August 1977	Conformance with exceptions (RG 1.59 Appendix A indicates use of ANSI N170-1976. In place of this standard, ANSI/ANS-2.8-1992 was used. ANSI/ANS-2.8-1992 was issued as a superseding document to ANSI N170-1976. ANSI/ANS-2.8-1992 was withdrawn on July 26, 2002. However, a replacement standard has not been issued. NUREG-0800 2.4.4 Revision 3, March 2007 includes ANSI/ANS-2.8-1992 as a reference.)	2.4.2 - 2.4.5 2.4.10 3.4
1.60	Design Response Spectra for Seismic Design of Nuclear Power Plants	Revision 1 December 1973	Conformance	2.5.2
1.61	Damping Values for Seismic Design of Nuclear Power Plants	Revision 1 March 2007	Conformance	3.7.1.2 Appendix 3KK Appendix 3LL Appendix 3MM Appendix 3NN

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.68	Initial Test Programs for Water-Cooled Nuclear Power Plants	Revision 3 March 2007	Conformance	14.2 Appendix 14A Appendix 14AA
1.76	Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants	Revision 1 March 2007	Conformance	2.3.1.2.3 3.3.2 3.5.1
1.78	Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release	Revision 1 December 2001	Conformance	2.2.3 6.4.4
1.82	Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident	Revision 3 November 2003	Conformance	6.2.2
1.83	In-service Inspection of Pressurized Water Reactor Steam Generator Tubes	Revision 1 July 1975	Not applicable (This RG is considered for withdrawal by NRC.)	N/A
1.84	Design, Fabrication, and Materials Code Case Acceptability, ASME Section III	Revision 34 October 2007	Conformance	3.12.2 4.5.1.1 4.5.2.1 5.2.1.2
1.86	Termination of Operating Licenses for Nuclear Reactors	Revision 0 June 1974	Not applicable (This RG is outside the scope of the FSAR.)	N/A
1.91	Evaluations of Explosions Postulated To Occur on Transportation Routes Near Nuclear Power Plants	Revision 1 February 1978	Conformance	2.2

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.92	Combining Modal Responses and Spatial Components in Seismic Response Analysis	Revision 2 July 2006	Conformance	Appendix 3KK Appendix 3LL Appendix 3MM Appendix 3NN
1.94	Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants	Revision 1 April 1976	Conformance with exception (QAPD conforms with SRP 17.5 and Subpart 2.5 of NQA-1 1994 Edition.)	17.2 17.5
1.100	Seismic Qualification of Electric and Mechanical Equipment for Nuclear Power Plants	Revision 2 June 1988	Conformance	3.10
1.101	Emergency Planning and Preparedness for Nuclear Power Reactors	Revision 5 June 2005	Not applicable (This RG is outside the scope of the FSAR. COLA Part 5 addresses the emergency planning.)	N/A
1.102	Flood Protection for Nuclear Power Plants	Revision 1 September 1976	Conformance	2.4.2 - 2.4.4 2.4.10 3.4
1.109	Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I	Revision 1 October 1977	Conformance	11.2.3 11.3.3 11.4.3 11.5.2
1.110	Cost-Benefit Analysis for Radwaste Systems for Light-Water-Cooled Nuclear Power Reactors	Revision 0 March 1976	Conformance	11.2.1 11.3.1 11.4.1 11.5.2

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.111	Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors	Revision 1 July 1977	Conformance	2.3.5 11.4.3
1.113	Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I	Revision 1 April 1977	Conformance	11.2.3 11.4.3 11.5.2
1.114	Guidance to Operators at the Controls and to Senior Operators in the Control Room of a Nuclear Power Unit	Revision 2 May 1989	Conformance	13.5
1.115	Protection Against Low-Trajectory Turbine Missiles	Revision 1 July 1977	Conformance	3.5.1.3
1.116	Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems	Revision 0-R May 1977	Conformance with exception (QAPD conforms with SRP 17.5 and Subpart 2.8 of NQA-1 1994 Edition.)	14.2.7 17.5
1.122	Development of Floor Design Response Spectra for Seismic Design of Floor-Supported Equipment or Components	Revision 1 February 1978	Conformance	Appendix 3KK Appendix 3LL Appendix 3MM
1.127	Inspection of Water-Control Structures Associated with Nuclear Power Plants	Revision 1 March 1978	Conformance	2.4 2.5 3.8.4.7
1.129	Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants	Revision 2 February 2007	Conformance	8.1.5.3 8.3.2
1.132	Site Investigations for Foundations of Nuclear Power Plants	Revision 2 October 2003	Conformance	2.5.1 2.5.4

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.133	Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors	Revision 1 May 1981	Conformance with exceptions (C.3.a and C.6 are not applicable.)	4.4.6.3
1.134	Medical Evaluation of Licensed Personnel at Nuclear Power Plants	Revision 3 March 1998	Conformance	N/A
1.135	Normal Water Level and Discharge at Nuclear Power Plants	Revision 0 September 1977	Conformance	2.4.2 - 2.4.7
1.136	Design Limits, Loading Combinations, Materials, Construction, and Testing of Concrete Containments	Revision 3 March 2007	Conformance	3.8.1.6
1.138	Laboratory Investigations of Soils and Rocks for Engineering Analysis and Design of Nuclear Power Plants	Revision 2 December 2003	Conformance	2.5.1 2.5.4
1.139	Guidance for Residual Heat Removal (for Comment)	Revision 0 May 1978	Not applicable (This RG has been withdrawn by NRC.)	N/A
1.145	Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants	Revision 1 November 1982	Conformance	2.3.4
1.147	In-service Inspection Code Case Acceptability, ASME Section XI, Division 1	Revision 15 October 2007	Conformance	3.8.1.7 5.2.1.2 5.2.4.8 6.6.1 6.6.3

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.149	Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations	Revision 3 October 2001	Conformance	13.2
1.150	Ultrasonic Testing of Reactor Vessel Welds During Preservice and In-service Examinations	Revision 1 February 1983	Not applicable (This RG has been withdrawn by NRC.)	N/A
1.159	Assuring the Availability of Funds for Decommissioning Nuclear Reactors	Revision 1 October 2003	Not applicable (This RG is outside the scope of the FSAR. COLA Part 1 addresses this information.)	N/A
1.160	Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	Revision 2 March 1997	Conformance	3.8.4.7 17.6
1.161	Evaluation of Reactor Pressure Vessels with Charpy Upper-Shelf Energy Less Than 50 Ft-Lb	Revision 0 June 1995	Not applicable (Materials for new units are procured with specifications so that the expected USE will be greater than 50 ft-lb throughout the reactor pressure vessel life.)	N/A
1.162	Format and Content of Report for Thermal Annealing of Reactor Pressure Vessel	Revision 0 February 1996	Not applicable (RG applies to units in operation that require recovery of reactor pressure vessel material toughness properties by thermal annealing.)	N/A
1.165	Identification and Characterization of Seismic Sources and Determination of Safe Shutdown Earthquake Ground Motion	Revision 0 March 1997	Not applicable (CPNPP Units 3 and 4 conform to RG 1.208.)	NA
1.166	Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Post earthquake Actions	Revision 0 March 1997	Conformance	3.7.4

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.167	Restart of a Nuclear Power Plant Shut Down by a Seismic Event	Revision 0 March 1997	Conformance	N/A
1.174	An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis	Revision 1 November 2002	Not applicable (This RG is considered during preparation of risk managed technical specification as a license condition.)	N/A
1.175	An Approach for Plant-Specific, Risk-Informed Decision-making: In-service Testing	Revision 0 August 1998	Not applicable (CPNPP Units 3 and 4 approach is to address the deterministic requirements of 10 CFR 50 and 10 CFR 52, not a risk-based approach.)	N/A
1.176	An Approach for Plant-Specific, Risk-Informed Decision-making: Graded Quality Assurance	Revision 0 August 1998	Not applicable (This RG has been withdrawn by NRC.)	N/A
1.177	An Approach for Plant-Specific, Risk-Informed Decision-making: Technical Specifications	Revision 0 August 1998	Not applicable. (This regulatory guide is considered during preparation of risk managed technical specification as a license condition.)	N/A
1.178	An Approach for Plant-Specific Risk-Informed Decision-making for In-service Inspection of Piping	Revision 1 September 2003	Not applicable (CPNPP Units 3 and 4 approach is to address the deterministic requirements of 10 CFR 50 and 10 CFR 52, not a risk-based approach.)	N/A
1.179	Standard Format and Content of License Termination Plans for Nuclear Power Reactors	Revision 0 January 1999	Not applicable (CPNPP Units 3 and 4 are new units. RG applies to license termination for an existing unit.)	N/A

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.181	Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)	Revision 0 September 1999	Conformance (Note: This FSAR style meets the guidance of RG 1.206.)	N/A
1.182	Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants	Revision 0 May 2000	Conformance	17.6 COLA Part 4
1.183	Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors	Revision 0 July 2000	Conformance	12.2.1.3 12.3.1.2.2 12.3.2.2.7 12.4.1.8 12.4.1.9.4.2 15.0.3 15.1.5.5 15.3.3.5 15.4.8.5 15.6.2 15.6.3.5 15.6.5.5 15.7.4 Appendix 15A
1.184	Decommissioning of Nuclear Power Reactors	Revision 0 July 2000	Not applicable (CPNPP Units 3 and 4 COLA is an application for new units. RG refers to decommissioning of an existing plant.)	N/A
1.185	Standard Format and Content for Post-Shutdown Decommissioning Activities Report	Revision 0 July 2000	Not applicable (CPNPP Units 3 and 4 COLA is an application for new units. RG refers to decommissioning activities for an existing plant.)	N/A

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.187	Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments	Revision 0 November 2000	Conformance	N/A
1.188	Standard Format and Content for Applications To Renew Nuclear Power Plant Operating Licenses	Revision 1 September 2005	Not applicable (CPNPP Units 3 and 4 COLA is an application for new units. RG refers to license renewal activities for an existing plant.)	N/A
1.189	Fire Protection for Nuclear Power Plants	Revision 1 March 2007	Conformance (Note: Conformance for design features is addressed in the DCD. For details of operational aspects, see FSAR Subsection 9.5.1.)	9.2.1 9.5.1 13.1
1.190	Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence	Revision 0 March 2001	Conformance	5.3.1.6
1.191	Fire Protection Program for Nuclear Power Plants During Decommissioning and Permanent Shutdown	Revision 0 May 2001	Not applicable (CPNPP Units 3 and 4 COLA is an application for new units.)	N/A
1.192	Operation and Maintenance Code Case Acceptability, ASME OM Code	Revision 0 June 2003	Conformance	5.2.1.2
1.193	ASME Code Cases Not Approved for Use	Revision 1 August 2005	Not applicable (CPNPP Units 3 and 4 design does not incorporate any of the identified ASME code cases.)	N/A
1.194	Atmospheric Relative Concentrations for Control Room Radiological Habitability Assessments at Nuclear Power Plants	Revision 0 June 2003	Conformance	2.3.4

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.196	Control Room Habitability at Light-Water Nuclear Power Reactors	Revision 1 January 2007	Conformance	2.3.4 6.4 9.4.1 15.0.3 COLA Part 4
1.197	Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors	Revision 0 May 2003	Conformance	6.4 COLA Part 4
1.198	Procedures and Criteria for Assessing Seismic Soil Liquefaction at Nuclear Power Plant Sites	Revision 0 November 2003	Conformance	2.5.4
1.202	Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors	Revision 0 February 2005	Not applicable (Application for CPNPP Units 3 and 4 is for new units. RG applies to activities that occur during decommissioning.)	N/A
1.205	Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants	Revision 0 May 2006	Not applicable (Risk informed performance based fire protection is not used.)	N/A
1.206	Combined License Applications for Nuclear Power Plants (LWR Edition)	Revision 0 June 2007	Conformance with exceptions (The guidance for referencing an early site permit and passive advanced light-water reactor [ALWR] plant is not applicable.)	All chapters and appendices
1.208	A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion	Revision 0 March 2007	Conformance	2.5.2 3.7

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Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 4 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA/FSAR Status	Corresponding Chapter/Section
4.7	General Site Suitability Criteria for Nuclear Power Stations	Revision 2 April 1998	Conformance	2.1 2.4.12 2.4.13 2.5.5
4.15	Quality Assurance for Radiological Monitoring Programs (Inception through Normal Operations to License Termination) – Effluent Streams and the Environment	Revision 2 July 2007	Conformance	11.3 11.5

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Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Division 8 Regulatory Guides

RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
8.1	Radiation Symbol	Revision 0 February 1973	Conformance with exception (Color requirements for radiation symbol are in accordance with 10 CFR 20.1901.)	N/A
8.2	Guide for Administrative Practices in Radiation Monitoring	Revision 0 February 1973	Conformance	12.1.3 12.3.4
8.4	Direct-Reading and Indirect-Reading Pocket Dosimeters	Revision 0 February 1973	Conformance	12.1.3
8.5	Criticality and Other Interior Evacuation Signals	Revision 1 March 1981	Conformance	12.1
8.6	Standard Test Procedure for Geiger-Muller Counters	Revision 0 May 1973	Conformance	12.1.3
8.7	Instructions for Recording and Reporting Occupational Radiation Exposure Data	Revision 2 November 2005	Conformance	12.1.3
8.8	Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations Will Be as Low as Is Reasonably Achievable	Revision 3 June 1978	Conformance	3.7.4.2 11.3.1 11.4.1 11.4.2 12.1.1.3 12.1.2 12.2.1.1.10 12.3.1 12.3.2.1 12.3.2.2 12.3.3.3 12.3.4

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
8.9	Acceptable Concepts, Models, Equations, and Assumptions for a Bioassay Program	Revision 1 July 1993	Conformance	12.1.3
8.10	Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as Is Reasonably Achievable	Revision 1-R May 1977	Conformance	12.1.1.3 12.2.1.1.10
8.13	Instruction Concerning Prenatal Radiation Exposure	Revision 3 June 1999	Conformance	12.1.3
8.15	Acceptable Programs for Respiratory Protection	Revision 1 October 1999	Conformance	12.1.3
8.20	Applications of Bioassay for I-125 and I-131	Revision 1 September 1979	Conformance	12.1.3
8.25	Air Sampling in the Workplace	Revision 1 June 1992	Conformance	12.1.3
8.26	Applications of Bioassay for Fission and Activation Products	Revision 0 September 1980	Conformance	12.1.3
8.27	Radiation Protection Training for Personnel at Light-Water-Cooled Nuclear Power Plants	Revision 0 March 1981	Conformance	12.1.3
8.28	Audible-Alarm Dosimeters	Revision 0 August 1981	Conformance	12.1.3
8.29	Instruction Concerning Risks from Occupational Radiation Exposure	Revision 1 February 1996	Conformance	12.1.3

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
8.32	Criteria for Establishing a Tritium Bioassay Program	Revision 0 July 1988	Conformance	12.1.3
8.34	Monitoring Criteria and Methods To Calculate Occupational Radiation Doses	Revision 0 July 1992	Conformance	12.1.3
8.35	Planned Special Exposures	Revision 0 June 1992	Conformance	12.1.3
8.36	Radiation Dose to the Embryo/Fetus	Revision 0 July 1992	Conformance	12.1.3
8.38	Control of Access to High and Very High Radiation Areas of Nuclear Plants	Revision 1 May 2006	Conformance	12.1.3 12.3.1.2.1.2

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Chapter 1 Introduction and General Description of Plant**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
1.0	Introduction and Interfaces	Revision 1 November 2007	Conformance (There are no specific SRP acceptance criteria associated with the general requirements.)	Chapter 1

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Chapter 2 Site Characteristics**

SRP Section	SRP Title	Revision/Date	COLA/FSAR Status	Appears in FSAR Chapter/Section
2.0	Site Characteristics and Site Parameters	Initial Issuance March 2007	Conformance	2.0
2.1.1	Site Location and Description	Revision 3 March 2007	Conformance	2.1.1
2.1.2	Exclusion Area Authority and Control	Revision 3 March 2007	Conformance	2.1.2
2.1.3	Population Distribution	Revision 3 March 2007	Conformance	2.1.3
2.2.1-2.2.2	Identification of Potential Hazards in Site Vicinity	Revision 3 March 2007	Conformance	2.2.1 2.2.2
2.2.3	Evaluation of Potential Accidents	Revision 3 March 2007	Conformance	2.2.3
2.3.1	Regional Climatology	Revision 3 March 2007	Conformance	2.3.1
2.3.2	Local Meteorology	Revision 3 March 2007	Conformance	2.3.2
2.3.3	Onsite Meteorological Measurements Programs	Revision 3 March 2007	Conformance	2.3.3
2.3.4	Short Term Atmospheric Dispersion Estimates for Accident Releases	Revision 3 March 2007	Conformance	2.3.4
2.3.5	Long-Term Atmospheric Dispersion Estimates for Routine Releases	Revision 3 March 2007	Conformance	2.3.5
2.4.1	Hydrologic Description	Revision 3 March 2007	Conformance	2.4.1
2.4.2	Floods	Revision 4 March 2007	Conformance	2.4.2

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Chapter 2 Site Characteristics**

SRP Section	SRP Title	Revision/Date	COLA/FSAR Status	Appears in FSAR Chapter/Section
2.4.3	Probable Maximum Flood (PMF) on Streams and Rivers	Revision 4 March 2007	Conformance	2.4.3
2.4.4	Potential Dam Failures	Revision 3 March 2007	Conformance	2.4.4
2.4.5	Probable Maximum Surge and Seiche Flooding	Revision 3 March 2007	Conformance with exceptions (Subsection 2.4.5 discusses region of occurrence and relates U.S. Corps of Engineers guidance document to site characteristics. As described in Subsection 2.4.5, the site is precluded based on site characteristics.)	2.4.5
2.4.6	Probable Maximum Tsunami Hazards	Revision 3 March 2007	Conformance with exceptions (Subsection 2.4.6 discusses coastal historical information and relates U.S. Corps of Engineers guidance document to site characteristics. As described in Subsection 2.4.6, the site is precluded based on site characteristics.)	2.4.6
2.4.7	Ice Effects	Revision 3 March 2007	Conformance	2.4.7
2.4.8	Cooling Water Canals and Reservoirs	Revision 3 March 2007	Conformance	2.4.8
2.4.9	Channel Diversions	Revision 3 March 2007	Conformance	2.4.9
2.4.10	Flooding Protection Requirements	Revision 3 March 2007	Conformance	2.4.10

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SRP Section	SRP Title	Revision/Date	COLA/FSAR Status	Appears in FSAR Chapter/Section
2.4.11	Low Water Considerations	Revision 3 March 2007	Conformance	2.4.11
2.4.12	Groundwater	Revision 3 March 2007	Conformance	2.4.12
2.4.13	Accidental Releases of Radioactive Liquid Effluents in Ground and Surface Waters	Revision 3 March 2007	Conformance	2.4.13
2.4.14	Technical Specifications and Emergency Operation Requirements	Revision 3 March 2007	Conformance	2.4.14
2.5.1	Basic Geologic and Seismic Information	Revision 4 March 2007	Conformance	2.5.1
2.5.2	Vibratory Ground Motion	Revision 4 March 2007	Conformance	2.5.2
2.5.3	Surface Faulting	Revision 4 March 2007	Conformance	2.5.3
2.5.4	Stability of Subsurface Materials and Foundations	Revision 3 March 2007	Conformance	2.5.4
2.5.5	Stability of Slopes	Revision 3 March 2007	Conformance	2.5.5

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Chapter 3 Design of Structures, Systems, Components & Equipment**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
3.2.1	Seismic Classification	Revision 2 March 2007	Conformance	3.2.2 3.7-3.12
3.3.1	Wind Loading	Revision 3 March 2007	Conformance	3.3.1
3.3.2	Tornado Loads	Revision 3 March 2007	Conformance	3.3.2
3.4.2	Analysis Procedures	Revision 3 March 2007	Conformance	3.4.2
3.5.1.3	Turbine Missiles	Revision 3 March 2007	Conformance	3.5.1.3
3.5.1.4	Missiles Generated by Tornadoes and Extreme Winds	Revision 3 March 2007	Conformance	3.5.2
3.5.1.5	Site Proximity Missiles (Except Aircraft)	Revision 4 March 2007	Conformance	3.5.1.5
3.5.1.6	Aircraft Hazards	Revision 3 March 2007	Conformance	3.5.1.6
3.5.2	SSCs to Be Protected From Externally- Generated Missiles	Revision 3 March 2007	Conformance	3.5.2
3.7.1	Seismic Design Parameters	Revision 3 March 2007	Conformance	3.7.1 3.8
3.7.2	Seismic System Analysis	Revision 3 March 2007	Conformance	3.7.2 3.8
3.7.3	Seismic Subsystem Analysis	Revision 3 March 2007	Conformance	3.7.3 3.9 3.12

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Chapter 3 Design of Structures, Systems, Components & Equipment**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
3.7.4	Seismic Instrumentation	Revision 2 March 2007	Conformance	3.7.4
3.9.2	Dynamic Testing and Analysis of Systems, Structures, and Components	Revision 3 March 2007	Conformance	3.9.2.4
3.9.3	ASME Code Class 1, 2, and 3 Components and Component Supports, and Core Support Structures	Revision 2 March 2007	Conformance	3.9.3
3.9.5	Reactor Pressure Vessel Internals	Revision 3 March 2007	Conformance	3.9.5
3.9.6	Functional Design, Qualification, and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints	Revision 3 March 2007	Conformance	3.9.6
3.11	Environmental Qualification of Mechanical and Electrical Equipment	Revision 3 March 2007	Conformance	3.11 13.4
3.12	ASME Code Class 1, 2, and 3 Piping Systems, Piping Components and Their Associated Supports	Initial Issuance March 2007	Conformance	3.12
3.13	Threaded Fasteners – ASME Code Class 1, 2, and 3	Initial Issuance March 2007	Conformance	3.13

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Chapter 5 Reactor Coolant and Connecting Systems**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
5.2.4	Reactor Coolant Pressure Boundary Inservice Inspection and Testing	Revision 2 March 2007	Conformance	5.2.1 5.2.4

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Chapter 6 Engineered Safety Features**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
6.2.5	Combustible Gas Control in Containment	Revision 3 March 2007	Conformance	6.1.1 6.2.5
6.4	Control Room Habitability System	Revision 3 March 2007	Conformance	2.2.3 6.4 9.4.1 COLA Part 4
6.5.1	ESF Atmosphere Cleanup Systems	Revision 3 March 2007	Conformance	6.5.1
6.6	Inservice Inspection and Testing of Class 2 and 3 Components	Revision 2 March 2007	Conformance	6.5.2

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Chapter 8 Electric Power**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
8.2	Off-site Power System	Revision 4 March 2007	Conformance	8.2
Branch Technical Position 8- 3	Stability of Off-site Power Systems	Revision 3 March 2007	Conformance	8.2

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Chapter 9 Auxiliary Systems**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
9.2.4	Potable and Sanitary Water Systems	Revision 3 March 2007	Conformance	9.2.4
9.2.5	Ultimate Heat Sink	Revision 3 March 2007	Conformance	9.2.5
9.3.1	Compressed Air System	Revision 2 March 2007	Conformance with exceptions (Criterion 3 is not applicable. The instrument air system of the US-APWR is not shared. Criterion 4 is not applicable. US-APWR can cope with a station blackout [SBO] without air supply from the instrument air system.)	9.3.1
9.4.1	Control Room Area Ventilation System	Revision 3 March 2007	Conformance	9.4.1
9.5.1	Fire Protection Program	Revision 5 March 2007	Conformance	9.5.1
9.5.2	Communications Systems	Revision 3 March 2007	Conformance	9.5.2

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Chapter 10 Steam and Power Conversion Systems**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
10.2.3	Turbine Rotor Integrity	Revision 2 March 2007	Conformance	10.2.3.5 10.2.5
10.3	Main Steam Supply System	Revision 4 March 2007	Conformance	10.3.2.2
10.3.6	Steam and Feedwater System Materials	Revision 3 March 2007	Conformance	10.3.6.3
10.4.5	Circulating Water System	Revision 3 March 2007	Conformance	10.4.5.2 10.4.5.6
10.4.7	Condensate and Feedwater System	Revision 4 March 2007	Conformance with exceptions (Criterion 8 applies only to boiling water reactors [BWRs].)	10.3.6.3
10.4.8	Steam Generator Blowdown System	Revision 3 March 2007	Conformance	10.4.8.1 10.4.8.2 10.4.8.5

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Chapter 11 Radioactive Waste Management**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
11.1	Source Terms	Revision 3 March 2007	Conformance	11.1
11.2	Liquid Waste Management System	Revision 3 March 2007	Conformance with exceptions (Criteria 5 and 6A are not applicable. This is not a design feature of the US-APWR. Criterion 6 applies to an early site permit [ESP] application.)	11.2
11.3	Gaseous Waste Management System	Revision 3 March 2007	Conformance with exceptions (Criterion 8 applies to an ESP application.)	11.3
11.4	Solid Waste Management System	Revision 3 March 2007	Conformance	11.4
11.5	Process and Effluent Radiological Monitoring Instrumentation and Sampling Systems	Revision 4 March 2007	Conformance	11.5
Branch Technical Position 11-3	Design Guidance for Solid Radioactive Waste Management Systems Installed in Light-Water-Cooled Nuclear Power Reactor Plants	Revision 3 March 2007	Conformance	11.4
Branch Technical Position 11-6	Postulated Radioactive Releases Due to Liquid-Containing Tank Failures	Revision 3 March 2007	Conformance	11.2.3

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Chapter 12 Radiation Protection**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
12.1	Assuring that Occupational Radiation Exposures Are As Low as is Reasonably Achievable	Revision 3 March 2007	Conformance	12.1
12.3-12.4	Radiation Protection Design Features	Revision 3 March 2007	Conformance	12.3 12.4
12.5	Operational Radiation Protection Program	Revision 3 March 2007	Conformance	12.5

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Chapter 13 Conduct of Operations**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
13.1.1	Management and Technical Support Organization	Revision 5 March 2007	Conformance with exceptions (Criterion 1.C: The experience requirements of corporate staff are set by corporate policy and not provided in detail. However, the experience level of the corporate staff in the area of nuclear plant development, construction, and management establishes that CPNPP Units 3 and 4 has the necessary capability and staff to ensure that design and construction of the facility are performed in an acceptable manner.)	13.1.1
13.1.2- 13.1.3	Operating Organization	Revision 6 March 2007	Conformance with exceptions (Criteria 1.A and 1.B: CPNPP conforms to the applicable QAPD and NQA-1 1994 Edition.)	13.1.2
13.2.1	Reactor Operator Requalification Program; Reactor Operator Training	Revision 3 March 2007	Conformance with exceptions (This FSAR conforms to NEI 06-13 which is approved industry template by NRC.)	13.2
13.2.2	Non-Licensed Plant Staff Training	Revision 3 March 2007	Conformance with exceptions (This FSAR conforms to NEI 06-13 which is approved industry template by NRC.)	13.2

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**Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
Chapter 13 Conduct of Operations**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
13.3	Emergency Planning	Revision 3 March 2007	Conformance with exceptions (Criteria 15, 16, 19, 20 and 21 apply to ESP applications and are not applicable to the CPNPP Units 3 and 4 COLA FSAR. Criterion 22 applies to design certification applications and is not applicable to the CPNPP Units 3 and 4 COLA FSAR.)	13.3
13.4	Operational Programs	Revision 3 March 2007	Conformance	13.4
13.5.1.1	Administrative Procedures – General	Initial Issuance March 2007	Conformance	13.5
13.5.2.1	Operating and Emergency Operating Procedures	Revision 2 March 2007	Conformance	13.5
13.6.1	Physical Security – Combined License	Initial Issuance March 2007	Conformance	13.6

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Table 1.9-215

**Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
Chapter 14 Verification Programs**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
14.2	Initial Plant Test Program – Design Certification and New License Applicants	Revision 3 March 2007	Conformance	14.2
14.3	Inspections, Tests, Analyses, and Acceptance Criteria	Initial Issuance March 2007	Conformance	14.3 COLA Part 10
14.3.7	Plant Systems – Inspections, Tests, Analyses, and Acceptance Criteria	Initial Issuance March 2007	Conformance	14.3.4.7 COLA Part 10
14.3.10	Emergency Planning – Inspections, Tests, Analyses, and Acceptance Criteria	Initial Issuance March 2007	Conformance	14.3.4.10 COLA Part 10

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Table 1.9-216

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Chapter 15 Transient and Accident Analysis**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
15.0.3	Design Basis Accidents Radiological Consequence Analyses for Advanced Light Water Reactors	Initial Issuance March 2007	Conformance	15.0.3

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Table 1.9-217

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Chapter 16 Technical Specifications**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/Section
16.0	Technical Specifications	Revision 2 March 2007	Conformance (Note: The CPNPP Units 3 and 4 Technical Specifications are based on the generic US-APWR Technical Specifications, which were developed consistent with NUREG-1431. The CPNPP Units 3 and 4 version of the Technical Specifications have been revised to reflect site-specific information.)	Chapter 16 COLA Part 4
16.1	Risk-Informed Decision Making: Technical Specifications	Revision 1 March 2007	Not applicable (This SRP is considered during preparation of Risk-Managed Technical Specification [Risk-Informed Technical Specification Initiative 4b] planned before fuel load as a license condition.)	N/A

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Table 1.9-218

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Chapter 17 Quality Assurance and Reliability Assurance**

SRP Section	SRP Title	Revision/Date	COLA FSAR Status	Appears in FSAR Chapter/ Section
17.1	Quality Assurance During the Design and Construction Phases	Revision 2 July 1981	Conformance	17.1 17.5
17.2	Quality Assurance During the Operations Phase	Revision 2 July 1981	Conformance	17.2
17.3	Quality Assurance Program Description	Revision 0 August 1990	Conformance	17.3
17.4	Reliability Assurance Program (RAP)	Initial Issuance March 2007	Conformance	17.4
17.5	Quality Assurance Program Description – Design Certification, Early Site Permit and New License Applicants	Initial Issuance March 2007	Conformance	17.5
17.6	Maintenance Rule	Revision 1 August 2007	Conformance	17.6

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Table 1.9-219

Location of Descriptions for Additional TMI-Related Requirements in the FSAR

50.34(f) Item	Action Plan Item	Requirement	Location in FSAR
(2)(i)	I.A.4.2	Provide a simulator capability that correctly models the control room and includes the capability to simulate small break loss-of-coolant accidents (LOCAs). (Applicable to construction permit applicants only)	13.2.1
(2)(ii)	I.C.9	Establish a program, to begin during construction and follow into operation, for integrating and expanding current efforts to improve plant procedures. The scope of the program shall include emergency procedures, reliability analyses, human factors engineering, crisis management, operator training, and coordination with [the Institute of Nuclear Power Operations (INPO)] and other industry efforts. (Applicable to construction permit applicants only)	13.5.2
(2)(xxv)	III.A.1.2	Provide an onsite Technical Support Center, an onsite Operational Support Center, and, for construction permit applications only, a near-site Emergency Operations Facility.	7.5.1.6.2 9.5.2 13.3
(3)(i)	I.C.5	Provide administrative procedures for evaluating operating, design, and construction experience and for ensuring that applicable important industry experiences will be provided in a timely manner to those designing and constructing the plant.	13.2 13.5.1 Appendix 13AA
(3)(vii)	II.J.3.1	Provide a description of the management plan for design and construction activities, to include: (A) the organizational and management structure singularly responsible for direction of design and construction of the proposed plant; (B) technical resources director by the applicant; (C) details of the interaction of design and construction within the applicant's organization and the manner by which the applicant will ensure close integration of the architect engineer and the nuclear steam supply vendor; (D) proposed procedures for handling the transition to operation; (E) the degree of top-level management oversight and technical control to be exercised by the applicant during design and construction, including the preparation and implementation of procedures necessary to guide the effort.	1.4 13.1 13.5 17.5

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Table 1.9-220

Evaluations of NRC Generic Communications Issued Since March 2007 Revision of NUREG-0800

Document	Excerpts from Document	CPNPP Units 3 and 4 Comment	CPNPP Units 3 and 4 FSAR References
<p>NRC Bulletin 2007-01: Security Officer Attentiveness December 12, 2007</p>	<p>Requested Action:</p> <ol style="list-style-type: none"> 1. How do you identify, report, and document human performance issues involving inattentiveness, especially complicity among licensee security personnel including security contractors and subcontractors. 2. How do you ensure that all employees and contractors report security concerns and any perceived security conditions that reduce the safety or security of a licensee facility? How do you ensure that staff is aware that there is no retaliation for self-reporting of inattentiveness or complicity or for reporting others? 3. How do you ensure that managers and supervisors provide oversight of BOP adherence to ensure there is no complicity to circumvent the program or failure to report wrongdoing or careless disregard of the regulations? 4. What are the results of any self-assessments performed within the last 2 years associated with the items above? Specifically, what do you do to assess the effectiveness of your employee access authorization program? 5. How do you assess the effectiveness of your oversight of contractors and subcontractors? 	<p>This Bulletin is addressed to operating license holders and as such is not immediately applicable to the proposed CPNPP Units 3 and 4. CPNPP Units 3 and 4, however, does address the issue of security officer attentiveness in the Security Plan and related security training plans.</p>	<p>Not applicable for FSAR, but related material is found in the Security Plan and related security training plans.</p>

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CP SUP 1.10(1) Add the following new section after DCD Section 1.9.

1.10 HAZARDS POSED BY CONSTRUCTION TO OPERATING UNITS

Consistent with 10 CFR 52.79(a)(31), the purpose of this section is to address managerial and administrative controls that will be in place to ensure that the new construction effort (CPNPP Units 3 and 4 together) does not adversely affect existing CPNPP Units 1 and 2.

The overall Comanche Peak site that encompasses all four units is a peninsula that extends into Squaw Creek Reservoir. The locations of the existing CPNPP Units 1 and 2 and the new CPNPP Units 3 and 4 can be seen on the Site Plan, Figure 1.2-1R. The site plan shows that a sufficient distance of approximately 1000 ft. is allowed between the centerlines of the two new units to ensure that they can be constructed safely and without posing a hazard to each other. Also, tower cranes will be located and their movements controlled during construction so that the loads being transported are not hazardous to personnel working in either portion of the construction site, nor will they pose a hazard to the safety-related systems and components being erected and installed. Furthermore, the fenced perimeter of the existing CPNPP Units 1 and 2 plant site is separated from the fenced perimeter of the CPNPP Units 3 and 4 construction site. The centers of the two sites are separated by approximately 2500 ft. The physical separation and distance between the two areas provide a significant buffer between the new and existing plant sites and a significant level of assurance that the new construction will be relatively isolated from the existing operation.

Managerial and administrative controls are considered to provide assurance that the CPNPP Units 1 and 2 systems and components are protected from construction hazards, and that any associated limiting condition for operations (LCOs) specified in the applicable CPNPP Units 1 and 2 Technical Specifications are not exceeded as a result of construction activities. The majority of the systems and components that are safety-related are contained and protected within safety-related structures. The managerial and administrative controls established will protect these internal systems and components from postulated construction hazards by maintaining the integrity and design basis of the safety-related structures and foundations. These controls also prevent or mitigate challenges to systems and components that are not enclosed in safety-related structures, such as disruption of transmission lines or other existing site features that could be exposed to construction hazards more directly. On-site construction activities with potential safety significance to the operating units are also addressed as required, in accordance with established safety evaluation procedures in force for CPNPP Units 1 and 2.

Since a fundamental objective of the CPNPP Units 3 and 4 construction effort is to avoid disrupting the operation of CPNPP Units 1 and 2 in any way, the administrative and managerial controls are applied to the protection of all CPNPP Units 1 and 2 features. Therefore, this hazards evaluation is general in that it does not single out application of the protections to the safety-related systems

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and components, to the exclusion of systems and components that are nonsafety-related or simply important to continued plant operation. Some of the systems considered during the evaluation included the onsite and offsite power systems, fire protection system (FPS), service water (SW) system, control room emergency heating, ventilation, and air conditioning (HVAC) systems, and seismic monitoring system. Some of the safety-related structures and foundations evaluated include, for example, the containment structure, safeguards building, fuel building, and auxiliary building (A/B), and related systems in those buildings such as the reactor coolant system (RCS), chemical and volume control system (CVCS), containment spray (CS) System, and CCWS. "Yard" structures and related components include the refueling water storage tank, reactor makeup water storage tanks, condensate storage tanks, and their related piping and components, while existing UHS structures include the intake structure, safe shutdown impoundment dam, and related tunnels and underground piping.

Table 1.10-201 contains a summary of the analysis that was performed to evaluate hazards posed by construction of CPNPP Units 3 and 4 to existing CPNPP Units 1 and 2. The table presents the hazards and impacts that were considered and the controls that either prevent or mitigate the potential consequences.

In the table, the left-hand column is a description of the postulated CPNPP Units 3 and 4 construction activities. The middle column describes the types of hazardous consequences posed by the CPNPP Units 3 and 4 construction activities to the CPNPP Units 1 and 2 systems and components, and by association to any related Technical Specification LCOs. The right-hand column describes managerial and administrative controls that would either prevent the consequences from occurring or mitigate the consequences if they occur.

Each of the construction activities is given an alphabetic designator beginning with "A." The consequences and controls are given numeric designators starting with "1" and are coordinated so that the number assigned to the control corresponds to the number assigned to the consequence. If a control addresses more than one consequence, it is so noted. If multiple controls address a single consequence, they are alpha-numeric (e.g., 1a, 1b, 1c, etc.).

The management and administrative controls provided during construction of CPNPP Units 3 and 4, combined with the large distance separating the new construction from the existing operation, provide defense-in-depth. Together, they provide assurance that construction activities at CPNPP Units 3 and 4 will not damage safety-related equipment or disturb safe and continued operation at existing CPNPP Units 1 and 2.

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Table 1.10-201 (Sheet 1 of 7)

Hazards Posed by Construction of Units 3 & 4 to Operating Units 1 & 2

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Unit 1 & 2 Systems and Components	Preventive and Mitigative Managerial & Administrative Controls
<p>A. Site improvement activities such as clearing, grading, excavation, and installation of buried piping and conduit</p>	<ol style="list-style-type: none"> 1. Damage to overhead power lines or transmission towers. 2. Damage to underground features such as electrical conduits, process piping, water supply piping or tunnels, drainage piping, or tunnels. 3. Disruption of site access and egress. 4. Encroachment on existing plant security control perimeter. 5. Adverse effects on existing topography, such as destabilization of earthen slopes, soil erosion and local flooding. 6. Undermining of foundations of transmission towers or existing buildings. 7. Adverse effect on groundwater quality, groundwater level, or on groundwater monitoring equipment. 8. Disruption of utility service to existing site operating facilities. 	<ol style="list-style-type: none"> 1a. Safe horizontal standoff and vertical clearance distances are established for work to be conducted in the vicinity of power lines. When large equipment is to be transported beneath power lines, horizontal and vertical distances are verified to ensure clearance requirements are satisfied. 1b. Warning and/or caution signs and barriers are installed along roads to ensure trucks, mobile cranes, and other vehicles are aware of power lines and support towers as they approach them. 2 & 6. Construction activities associated with grading and excavation require location and identification of existing equipment and underground structures that must be protected or removed, prior to start of the work activity. 3. Signs are erected on plant roads to identify construction worker access and egress routes and direct construction deliveries. To the maximum extent possible, roads providing access to the construction site are separated from roads providing access to the existing operating units. 4. Administrative controls are in place to coordinate construction activities with CPNPP Units 1 and 2 physical protection personnel and procedures, so that security perimeter required for protection of operating units is not compromised. 5. With regard to construction activities that may alter site drainage characteristics, controls are implemented to assure that the site flooding design basis is maintained for the operating units. This includes measures to ensure that soil erosion does not adversely impact site drainage. 7. Controls are implemented to maintain groundwater elevation within limits, to protect safety-related structures and foundations.

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Hazards Posed by Construction of Units 3 & 4 to Operating Units 1 & 2

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Unit 1 & 2 Systems and Components	Preventive and Mitigative Managerial & Administrative Controls
<p>B. Demolition or relocation of existing systems and components</p>	<ol style="list-style-type: none"> 1. Damage to overhead power lines or transmission towers. 2. Damage to underground features such as electrical conduits, process piping, water supply piping or tunnels, drainage piping, or tunnels. 3. Adverse effects on existing topography, such as destabilization of earthen slopes, soil erosion, and local flooding. 4. Encroachment on existing plant security control perimeter. 5. Disruption of utility service to existing site operating facilities. 	<p>8. Administrative controls are in place to coordinate construction and testing activities with CPNPP Units 1 and 2, so that activities affecting utility services are cleared through the operating unit control rooms and do not compromise services needed by the operating units.</p> <ol style="list-style-type: none"> 1a. Safe horizontal standoff and vertical clearance distances are established for work to be conducted in the vicinity of power lines. When large equipment is to be transported beneath power lines, horizontal and vertical distances are verified to ensure clearance requirements are satisfied. 1b. Warning and/or caution signs and barriers are installed along roads to ensure trucks, mobile cranes, and other vehicles are aware of power lines and support towers as they approach them. 2. Administrative controls require that existing systems and components related to the operating units and located within the construction area be identified and protected. If it is not practical to protect such equipment, it is temporarily removed from service, relocated to a safe place, and restored to service. 3. With regard to construction activities that may alter site drainage characteristics, controls are implemented to assure that the site flooding design basis is maintained for the operating units. This includes measures to ensure that soil erosion does not adversely impact site drainage. 4. Administrative controls are in place to coordinate construction activities with CPNPP Units 1 and 2 physical protection personnel and procedures, so that security perimeter required for protection of operating units is not compromised.

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Table 1.10-201 (Sheet 3 of 7)

Hazards Posed by Construction of Units 3 & 4 to Operating Units 1 & 2

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Unit 1 & 2 Systems and Components	Preventive and Mitigative Managerial & Administrative Controls
C. Blasting of rock to establish grade for building foundations.	<ol style="list-style-type: none"> 1. Damage to above ground features such as tanks, buildings, exposed outdoor mechanical, electrical, and instrumentation equipment. 2. Undermining of foundations of transmission towers or existing buildings. 3. Damage to underground features such as electrical conduits, process piping, water supply piping or tunnels, drainage piping, or tunnels. 4. Adverse effects on existing topography, such as destabilization of earthen slopes, soil erosion, and local flooding. 5. Adverse effect on air quality from dust. 6. Disruption of normal traffic flow into and around the site. 	<p>5. Administrative controls are in place to coordinate construction and testing activities with CPNPP Units 1 and 2, so that activities affecting utility services are cleared through the operating unit control rooms and do not compromise services needed by the operating units.</p> <p>1 & 5. Administrative procedures are established and construction methods and controls are implemented to avoid generation of missiles and excessive dust due to blasting.</p> <p>2, 3, & 4. Administrative procedures are established and construction methods and controls are implemented to avoid excessive ground vibration due to blasting in the vicinity of the existing plant units.</p> <p>6. For a number of reasons, blasting activities are coordinated by managerial control so that they occur at times of low activity and traffic in the vicinity of the blast site. Also, extreme precautions are taken to isolate the blast area and traffic is re-routed if necessary, preventing exposure of personnel to potential injury.</p>
D. Vertical site exploration such as boring, drilling, and pile driving.	<ol style="list-style-type: none"> 1. Adverse effect on groundwater quality, groundwater level, or groundwater monitoring equipment. 2. Damage to underground features such as electrical conduits, process piping, water supply piping or tunnels, drainage piping, or tunnels. 	<p>1a. Controls are implemented to maintain groundwater elevation within limits, to protect safety-related structures and foundations.</p> <p>1b & 2. Construction activities associated with boring, drilling, and pile driving require location and identification of existing equipment and underground structures that must be protected or removed, prior to the work activity.</p>

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Table 1.10-201 (Sheet 4 of 7)

Hazards Posed by Construction of Units 3 & 4 to Operating Units 1 & 2

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Unit 1 & 2 Systems and Components	Preventive and Mitigative Managerial & Administrative Controls
E. Water-related changes to the site such as dredging and dewatering.	<p>1. Adverse effect on surface water quality such as through increased turbidity, chemical contamination, etc.</p> <p>2. Adverse effects on existing topography, such as destabilization of earthen slopes, soil erosion, and local flooding.</p>	<p>1. With regard to construction activities that may adversely impact water quality characteristics, controls will be implemented to assure that applicable design basis water chemistry requirements are maintained for the operating units, where the water supply in question has a plant use. Quantities, types and disposal of hazardous/toxic chemicals are limited by environmental, safety and health controls.</p> <p>2. With regard to construction activities that may alter site drainage characteristics, controls are implemented to assure that the site flooding design basis is maintained for the operating units. This will include measures to ensure that soil erosion does not adversely impact site drainage characteristics that are important for flood control.</p>
F. Vertical lifting, movement, and placement of material and equipment by crane.	<p>1. Damage to overhead power lines or transmission towers.</p> <p>2. Damage to above ground features such as tanks, buildings, exposed outdoor mechanical, electrical, and instrumentation equipment.</p> <p>3. Damage to underground features such as electrical conduits, process piping, water supply piping or tunnels, or drainage piping or tunnels.</p>	<p>1a. Safe horizontal standoff and vertical clearance distances are established for work to be conducted in the vicinity of power lines. When large equipment is to be transported beneath power lines, horizontal and vertical distances are verified to ensure clearance requirements are satisfied.</p> <p>1b. Warning and/or caution signs and barriers are installed along roads to ensure trucks, mobile cranes, and other vehicles are aware of power lines and support towers as they approach them.</p> <p>2 & 3. General controls and limitations are established for safe movement of heavy equipment and materials around the construction site, by crane or by truck. Conservative standoff distances and load controls prevent direct impacts on existing structures, or excessive ground vibration impacts on existing structure foundations, due to construction crane boom failures and load drops.</p>

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Hazards Posed by Construction of Units 3 & 4 to Operating Units 1 & 2

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Unit 1 & 2 Systems and Components	Preventive and Mitigative Managerial & Administrative Controls
<p>G. Movement and placement of material by wheeled conveyance such as train, truck, fork lift, front end loader, etc.</p>	<ol style="list-style-type: none"> 1. Damage to overhead power lines or transmission towers. 2. Damage to above ground features such as tanks, buildings, exposed outdoor mechanical, electrical, and instrumentation equipment. 3. Damage to underground features such as electrical conduits, process piping, water supply piping or tunnels, or drainage piping or tunnels. 4. Disruption of normal traffic or development of emergency condition due to rail car derailment. 5. Adverse effect on air quality from dust and equipment exhausts. 	<ol style="list-style-type: none"> 1a. Safe horizontal standoff and vertical clearance distances are established for work to be conducted in the vicinity of power lines. When large equipment is to be transported beneath power lines, horizontal and vertical distances are verified to ensure clearance requirements are satisfied. 1b. Warning and/or caution signs and barriers are installed along roads to ensure trucks, mobile cranes, and other vehicles are aware of power lines and support towers as they approach them. 2. Conservative standoff distances and load controls prevent direct impacts on existing structures, or excessive ground vibration impacts on existing structure foundations, due to construction crane boom failures and load drops. 3. General controls and limitations are established for safe movement of heavy equipment and materials around the construction site, by crane or by truck. Transport of heavy load equipment over existing underground circulating water piping is controlled and prohibited if loads pose a risk of damage to the underground lines. 4a. Safe speed limits and maximum loading weights are established for trains using the on-site rail spur, to prevent derailments. 4b. Administrative controls are in place to respond to site accidents and emergencies, such as emergency medical response, fire brigade and hazardous materials response team. 5. Vehicular dust generation is controlled by routing of traffic, wetting of gravel roads, and paving of surfaces when practicable. Existing air intakes for HVAC systems that are potentially affected by dust and exhausts are subjected to periodic monitoring for replacement of filters.

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Hazards Posed by Construction of Units 3 & 4 to Operating Units 1 & 2

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Unit 1 & 2 Systems and Components	Preventive and Mitigative Managerial & Administrative Controls
H. High volume of light vehicular traffic such as by car or pickup truck.	<ol style="list-style-type: none"> 1. Damage to overhead power lines or transmission towers. 2. Adverse effect on air quality from dust and equipment exhausts. 3. Disruption of normal traffic and/or development of an emergency condition due to vehicle accidents on access roads or within site. 	<ol style="list-style-type: none"> 1. Warning and/or caution signs and barriers are installed along roads to ensure trucks, mobile cranes, and other vehicles are aware of power lines and support towers as they approach them. 2. Vehicular dust generation is controlled by routing of traffic, wetting of gravel roads, and paving of surfaces when practicable. Existing air intakes for HVAC systems that are potentially affected by dust and exhausts are subjected to periodic monitoring for replacement of filters. 3a. Administrative controls, such as emergency medical response, fire brigade and hazardous materials response team, are in place to respond to site accidents and emergencies. 3b. Signs are erected on plant roads to identify construction worker access and egress routes and direct construction deliveries. To the maximum extent possible, roads providing access to the construction site are separated from roads providing access to the existing operating units. 3c. Safe speed limits for vehicles using site roads are established and posted.
I. Manual construction activities such as fabrication and installation performed by craft workers.	<ol style="list-style-type: none"> 1. Direct impact on existing plant outdoor features due to windblown debris or missiles (i.e., as a result of materials not being properly stored and secured). 2. Encroachment on existing plant security control perimeter (i.e., for manual work tasks conducted at or near the site boundary). 	<ol style="list-style-type: none"> 1. Administrative controls relating to severe weather conditions such as high winds and high wind warnings address the movement and storage of materials and equipment under these conditions. Plant procedures that may call for special restrictions of activity during severe weather conditions are also followed. 2. Administrative controls are in place to coordinate construction activities with CPNPP Units 1 and 2 physical protection personnel and procedures, so that security perimeter required for protection of operating units is not compromised.

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Hazards Posed by Construction of Units 3 & 4 to Operating Units 1 & 2

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Unit 1 & 2 Systems and Components	Preventive and Mitigative Managerial & Administrative Controls
J. Indoor and outdoor storage of construction materials and equipment.	<p>1. Development of emergency condition due to release of flammable gas or hazardous/toxic chemical from outdoor tank storage or from warehouse storage.</p> <p>2. Damage to existing plant features caused by windblown materials stored in laydown areas.</p>	<p>1a. Quantities and types of flammable gases and hazardous/toxic chemicals are limited by environmental, safety, and health controls, as are the safe transportation and storage of these materials.</p> <p>1b. Administrative controls, such as emergency medical response, fire brigade, and hazardous materials response team, are in place to respond to site accidents and emergencies.</p> <p>2. Administrative controls relating to severe weather conditions such as high winds and high wind warnings address the movement and storage of materials and equipment under these conditions. Plant procedures that may call for special restrictions of activity during severe weather conditions are also followed.</p>
K. Tying-in of construction site to utility functions such as power, water and communications.	<p>1. Disruption of utility service to existing site operating facilities.</p>	<p>1. Administrative controls are in place to coordinate construction and testing activities with CPNPP Units 1 and 2, so that activities affecting utility services are cleared through the operating unit control rooms and do not compromise services needed by the operating units.</p>
L. Testing of individual components, systems, and integrated systems.	<p>1. Disruption of utility service to existing site operating facilities.</p>	<p>1. Administrative controls are in place to coordinate construction and testing activities with CPNPP Units 1 and 2, so that activities affecting utility services are cleared through the operating unit control rooms and do not compromise services needed by the operating units.</p>