

**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR**

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
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
DLF	dynamic load factor

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ACRONYMS AND ABBREVIATIONS (Continued)

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
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
EHGS	turbine electro-hydraulic governor control system
EIF	electrical interface system

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ACRONYMS AND ABBREVIATIONS (Continued)

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
ETSB	effluent treatment system branch
EV	elevator
EX	excitation transformer

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ACRONYMS AND ABBREVIATIONS (Continued)

EZB	exclusion zone boundary
FA	function allocation
FAB	feed and bleed
FAC	flow-accelerated corrosion
FATT	fracture appearance transit temperature
FCV	feedwater control valve
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
FV	Fussell Vesely
FVW	Fussell Vesely worth
FW	feedwater
FWLB	feedwater line break
FWS	feedwater system
g	gravity
GA	general arrangement
Gd2O3	gadolinia
GDC	General Design Criteria

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ACRONYMS AND ABBREVIATIONS (Continued)

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
HHI	high head injection
HHIS	high-head injection system
HI	hydriodic acid
HIS	hydrogen ignition system
HJTC	heated junction thermocouple

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ACRONYMS AND ABBREVIATIONS (Continued)

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 probabilistic risk assessment
IG	implementation guideline
IGA	intergranular attack
IHL	induced hot leg rupture
ILRT	integrated leak rate test
INPO	Institute of Nuclear Power Operations

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ACRONYMS AND ABBREVIATIONS (Continued)

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
LER	licensee event report
LERF	large early release frequency
LHR	linear heat rate
LHSI	low-head safety injection
LiOH	lithium hydride

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ACRONYMS AND ABBREVIATIONS (Continued)

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
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

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ACRONYMS AND ABBREVIATIONS (Continued)

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
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

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ACRONYMS AND ABBREVIATIONS (Continued)

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
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

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ACRONYMS AND ABBREVIATIONS (Continued)

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
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)

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ACRONYMS AND ABBREVIATIONS (Continued)

ORNL	Oak Ridge National Laboratory
OS	operating system
OSD	operational sequence diagram
OT	over temperature
OTΔT	over temperature delta-T
OTPS	over Temperature delta-T protection system
OTS	offsite transmission systems
OVD	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
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

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ACRONYMS AND ABBREVIATIONS (Continued)

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
PWSCC	primary water stress corrosion cracking
QA	quality assurance
QAP	quality assurance program
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

**Comanche Peak Nuclear Power Plant, Units 3 & 4
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ACRONYMS AND ABBREVIATIONS (Continued)

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
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

**Comanche Peak Nuclear Power Plant, Units 3 & 4
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ACRONYMS AND ABBREVIATIONS (Continued)

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
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

**Comanche Peak Nuclear Power Plant, Units 3 & 4
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ACRONYMS AND ABBREVIATIONS (Continued)

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
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

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ACRONYMS AND ABBREVIATIONS (Continued)

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
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

**Comanche Peak Nuclear Power Plant, Units 3 & 4
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ACRONYMS AND ABBREVIATIONS (Continued)

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
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

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ACRONYMS AND ABBREVIATIONS (Continued)

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
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
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 3 as identified in **Section 1.6**. Those portions are identified by solid horizontal lines in this FSAR. Unless otherwise specified, reference to the DCD refers to Tier 2 information and includes the references to the sensitive unclassified non-safeguards information (including proprietary information) and safeguards information, identified in the portions of the US-APWR DCD which are incorporated by reference in the CPNPP FSAR. Such DCD information is included in this combined license application in the same manner as it is included in the US-APWR DCD, i.e., references in the DCD are included as references in the FSAR and material incorporated by reference into the DCD is incorporated by reference into the FSAR. Appropriate agreements are in place to provide for possession (including constructive possession) and rights to use by the licensee of the withheld sensitive unclassified non-safeguards information (including proprietary information) and safeguards information referenced in the US-APWR DCD for the life of the project.

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."

1. 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."

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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, 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.

In accordance with Regulatory Guide 1.206, Luminant will provide the construction and startup schedules after issuance of the COL and when a final decision to construct the plant has been made.

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). This annotation may be used in case of the replacement of the DCD information that contains CDI information when applicable COL item exists.
- 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). This annotation may be used in case of the replacement of the DCD information that contains CDI information when applicable COL item exists.
- 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).
- STD CDI - FSAR information that addresses DCD conceptual design information (CDI) and is common to all COL applicants referencing the generic DCD. When the applicable COL item does not exist, this annotation is used and is not numbered.
- CP CDI - FSAR information that addresses DCD conceptual design information (CDI) and is plant-specific. When the applicable COL item does not exist, this annotation is used and is not numbered.

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

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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.

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

STD 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

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

The site characteristics are addressed in Chapter 2. The site plan 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

STD 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 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**.

STD 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 1.2-2** 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, UHS essential service water (ESW) pump house and a UHS basin.

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Each UHS ESW pump house contains one safety-related pump 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)
STD 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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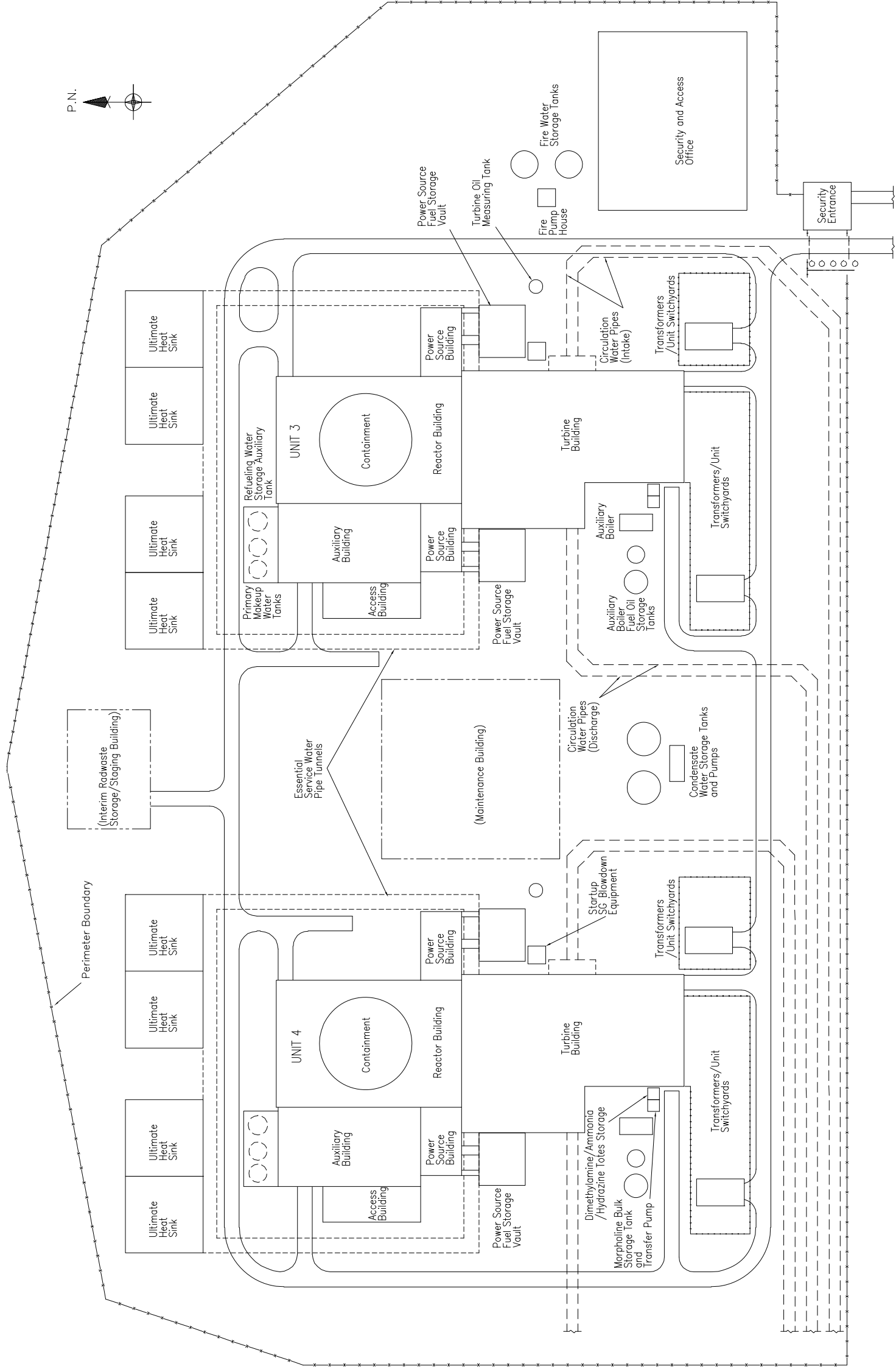


Figure 1.2-1R Comanche Peak Units 3 & 4 Site Plan (Sheet 2 of 2)

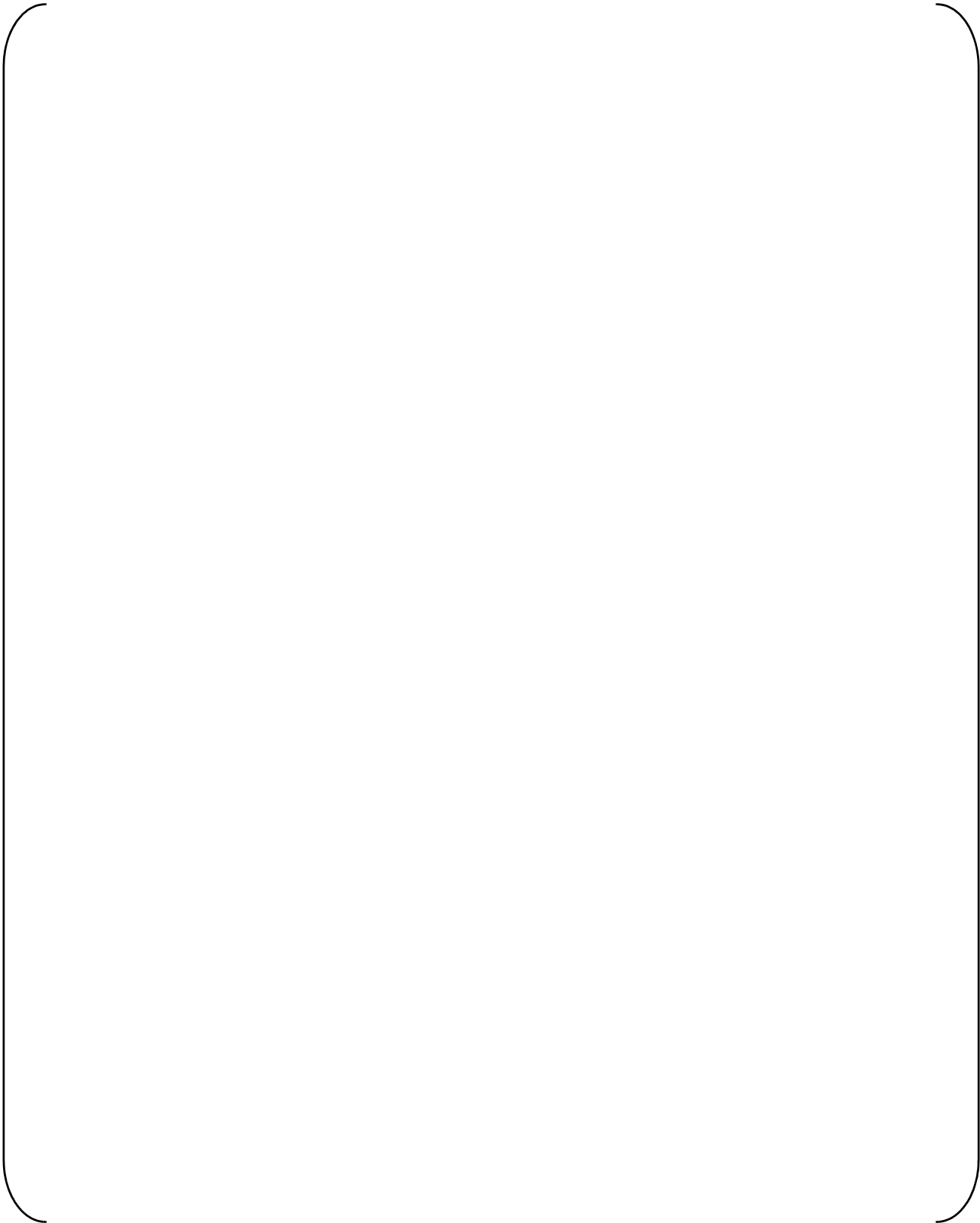
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Figure 1.2-2R Deleted

1.2-7

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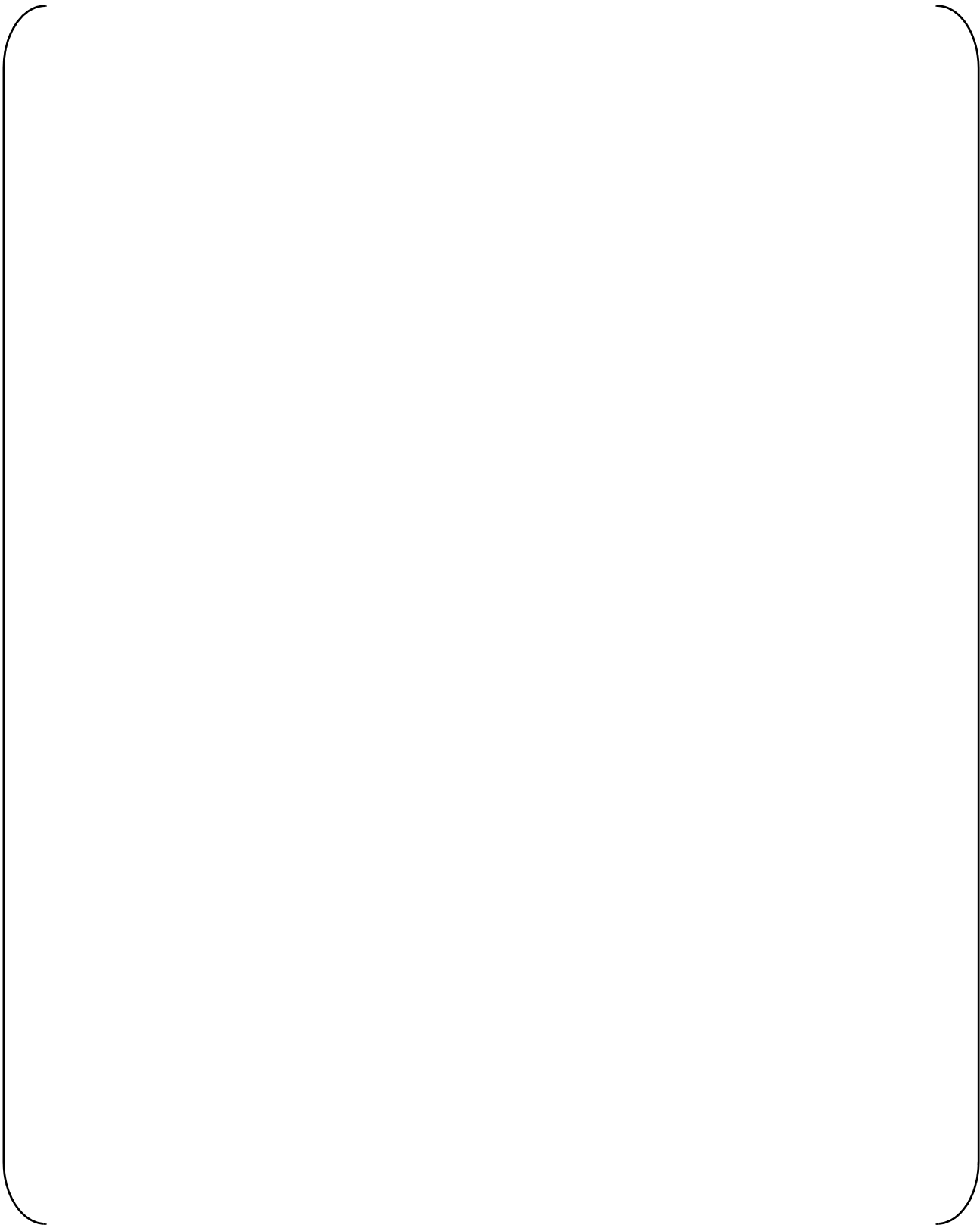


(SRI)

CP COL 1.8(1)

Figure 1.2-201 Ultimate Heat Sink and ESW Pipe Tunnel Plan View

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(SRI)

CP COL 1.8(1)

Figure 1.2-202 ESW Pipe Tunnel Sectional View A-A

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

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(SRI)

CP COL 1.8(1)

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

1.2-10

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(SRI)

CP COL 1.8(1)

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

1.2-11

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(SRI)

CP COL 1.8(1)

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

1.2-12

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(SRI)

CP COL 1.8(1)

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

1.2-13

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

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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

1.2-14

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(SRI)

CP COL 1.8(1)

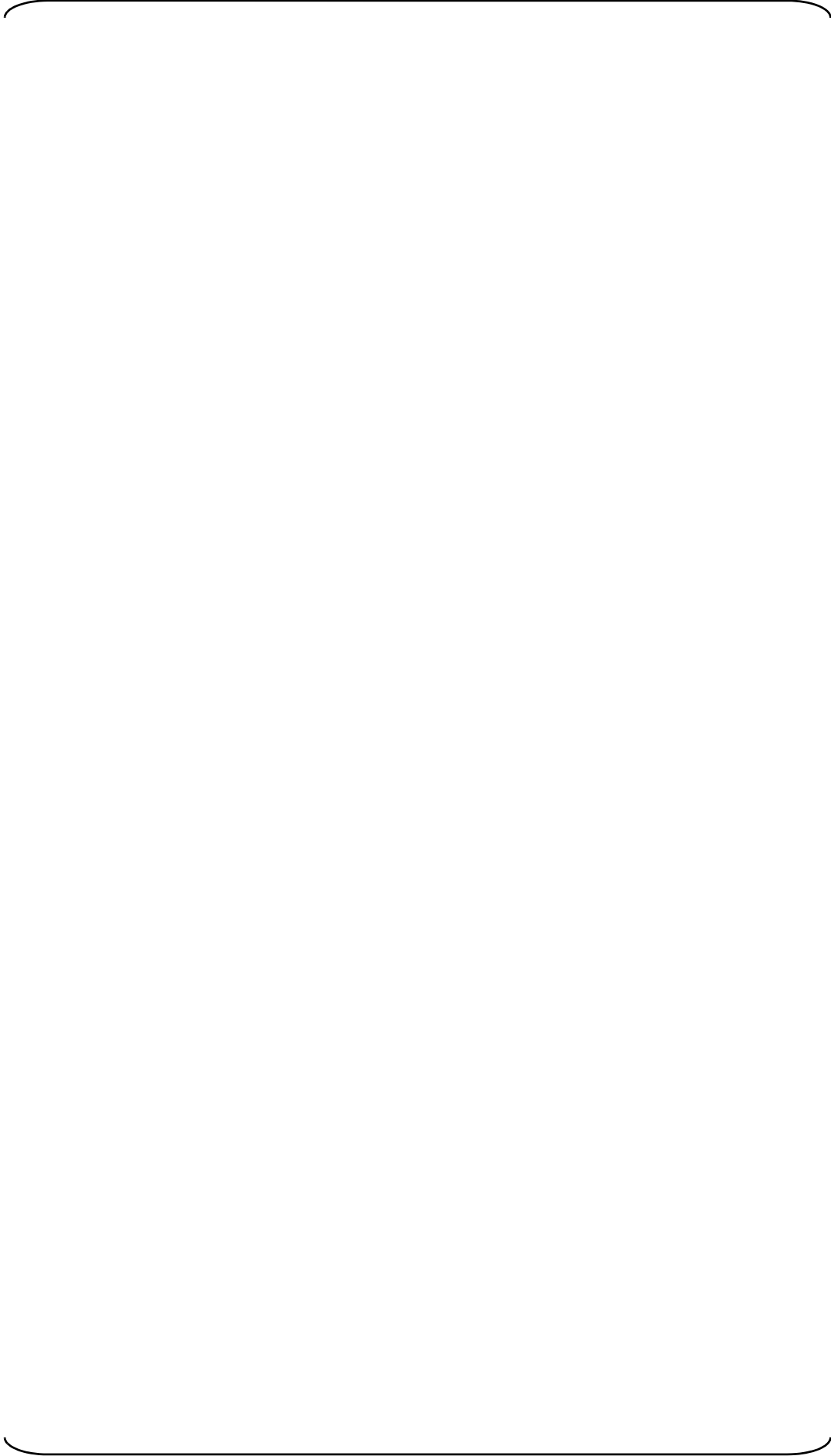
Figure 1.2-208 Ultimate Heat Sinks C and D at Elevation 828'-0" - Plan View

1.2-15

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

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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

1.2-16

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(SRI)

CP COL 1.8(1)

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

1.2-17

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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 applicant for the design, engineering, construction, licensing, operation, quality assurance (QA), and fuel management 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.

CP COL 1.4(1) Add the following subsection after **DCD Subsection 1.4.1**.

1.4.1.1 Owner of Units 3 and 4

Luminant has established a project company, Comanche Peak Nuclear Power Company LLC (CPNPC), which is the applicant as the owner of CPNPP Units 3 and 4. Luminant is the majority and controlling owner of CPNPC with a minority interest held by Mitsubishi Heavy Industries – Nuclear North America (MHI-NNA), which is a wholly owned subsidiary of Mitsubishi Heavy Industries (MHI).

Luminant has established the CPNPP Unit 3 and 4 Negotiation Action Plan (see COLA Part 11) to ensure that any foreign ownership of CPNPC does not control or have dominion over decisions regarding safety or security relating to Units 3 and 4.

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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.

CP COL 1.4(1) Add the following subsections after **DCD Subsection 1.4.2.4**.

1.4.2.5 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.

1.4.2.6 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.

1.4.2.7 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.

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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, 1.4.2.3, and 1.4.2.5 through 1.4.2.7.***

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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.

STD 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. 3	All FSAR Chapters
NEI 07-09A	Generic FSAR Template Guidance for Offsite Dose Calculation Manual Program Description, Rev.0	11.5
NEI 07-10A	Generic FSAR Template Guidance for Process Control Program, Rev.0	11.4
NEI 07-08A	Generic FSAR Template Guidance for Ensuring That Occupational Radiation Exposures Are As Low As Is Reasonably Achievable (ALARA), Rev. 0	12.1
NEI 07-03A	Generic FSAR Template Guidance for Radiation Protection Program Description, Rev. 0	12.1, 12.5
NEI 08-08A	Generic FSAR Template Guidance for Life-Cycle Minimization of Contamination, Rev. 0	12.5
NEI 06-13A	Template for an Industry Training Program Description, Rev. 2	13.2
NEI 06-06	Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites, Rev. 5	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, Chapter 19
NEI 06-14A	Quality Assurance Program Description, Rev. 7	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.

STD 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 Water System Flow Diagram
9.2.5-1R	Ultimate Heat Sink System Piping and Instrumentation Diagram
9.3.1-201	Hydrogen and Nitrogen Gas Supply Configuration
9.4-201	Non-Class 1E Electrical Room HVAC System Flow Diagram
9.4-202	Class 1E Electrical Room HVAC System Flow Diagram
9.4-203	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.

- STD COL 1.8(1) Replace the first sentence of the fourth paragraph in **DCD Section 1.8** with the following.

The site plan is shown on **Figure 1.2-1R**.

- STD COL 1.8(1) Replace the fifth paragraph in **DCD Section 1.8** with the following.

This site plan includes site-specific structures such as the essential service water pipe tunnel, power source fuel storage vaults, and ultimate heat sink-related structures designated as CDI in the DCD. Section 1.2 provides the descriptions and figures for these SSCs. When IBR portion of this application includes CDI designators such as double brackets "[[]]" in text and tables and "cloud shape borders" around SSCs and notes in figures, it means that the CDI in DCD is adopted as actual design and the CDI designators are deleted.

Replace the first sentence of the six paragraph in **DCD Section 1.8** with the following.

FSAR **Table 1.8-1R** has columns summarizing the site-specific interface description and providing its location in the FSAR.

- STD COL 1.8(1) Add the following bullets to the end of the last bullet of the sixth paragraph.

Column 5, Description of the Interface in the FSAR: This column summarizes how the interface is met in the FSAR.

Column 6, FSAR Section: This column identifies the FSAR location of the interface description.

- STD COL 1.8(1) Replace the last paragraph in **DCD Section 1.8** with the following.

10 CFR 52 clarifies that Tier 2 information in a standard design certification rule does not include CDI and Section C.III.6 of RG 1.206 states that Tier 2 information in a standard design certification application does not include CDI. Therefore, replacement or revision of CDI identified in **Table 1.8-1R** does not constitute a departure. Additionally, information addressing COL information items identified in **Table 1.8-201** and supplemental information (see **Subsection 1.1.6.1**) that does not change the intent or meaning of the DCD text is not a departure from the DCD.

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STD 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 site-specific design. This COLA, which references the certified US-APWR design, provides design features and characteristics that comply with the interface requirements for the site-specific portion of the 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

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

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 as regulatory commitments, license conditions, and ITAAC.

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

1. Operational programs: Operational programs are specific programs that are required by regulations. These programs are described in the FSAR to the extent that the NRC can conclude with reasonable assurance that the program is “fully described” and the implementation milestones of these programs are described in the FSAR in accordance with RG 1.206.
 - 1a. Implementation requirements of other operational programs that the regulations do not address are proposed as “license conditions” associated with the implementation milestones.
 - 1b. Implementation milestones for several of these operational programs addressed in the regulations are proposed as “regulatory commitments” of COL Applicant.
2. Plant procedures: Brief description of the nature and content of these procedures and the schedule for the preparations of these procedures are described in the FSAR. Implementation schedules

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of these procedures are proposed as “regulatory commitments” of COL Applicant.

3. Design information:
 - 3a. Information needed in the COL application to meet the guidelines of RG 1.206, and additional/supplementary information that is available for NRC staff review.
 - 3b. Sufficient design information necessary to the COL application that will be provided in the FSAR updates before the Issuance of the COL is proposed as “regulatory commitments” of COL Applicant.
 - 3c. Design information depending on as-procured/as-built information that will be addressed in the FSAR updates after issuance of the COL, or will be demonstrated under the construction inspection program (except for ITAAC program). The FSAR in the COL application includes commitments and information sufficient for the NRC to conclude its safety evaluation.
4. Detailed schedule information: Detailed schedule information cannot be fixed during the COLA review phase and is subject to change in accordance with the progress of design or construction. Such detailed schedule information is proposed as “regulatory commitments” of COL Applicant.
5. The inspections, tests, analyses, and acceptance criteria (ITAAC): Information that will be verified in the ITAAC.

The column entitled “Resolution Category” in Table 1.8-201 indicates the resolution status of each COL item categorized to 1a, 1b, 2, 3a, 3b, 3c, 4, or 5 as noted above.

CP COL 1.8(3) **1.8.1.3 Summary of Departures**

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

STD COL 1.8(3) **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 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.

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

*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**
STD COL 1.8(2)

*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**
STD COL 1.8(3)

*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 7)
Significant Site-Specific Interfaces with the Standard US-APWR Design

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
Circulating Water System	CDI	The system design of the circulating water system (CWS) is CDI. A typical "reference plant" physical layout, configuration and the associated design basis information for the CWS are presented in the DCD. The final system configuration for the CWS is site-specific.	1.2 8.3.1 10.1 10.4.5 10.4.13 11.2.3.1 14.2.12.1.33	CWS is cooled by non-safety-related mechanical draft cooling towers. 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. The makeup water and blowdown system final configuration and design parameters are determined as follows subject to site-specific.	10.4.5 1.2
				<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. 	

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Table 1.8-1R (Sheet 2 of 7)

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

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
Essential Service CDI Water System and Ultimate Heat Sink		<p>Certain functional aspects of the ESWS and the UHS must meet interface requirements to be consistent with the standard plant design. The UHS is a safety-related system required to remove the heat transferred from the ESWS during normal operation, design basis events and safe shutdown. Decisions regarding the UHS design are to be based on available water sources and how the cooling water can be supplied to the ESWS. A typical configuration for the ESWS and UHS is presented in this DCD as CDI. The final configuration of the ESWS will be comprised of the ESWPT (see below) and UHS related structures (including piping and piping support layout) and is site-specific.</p>	<p style="color: red;">1.2</p> <p style="color: red;">9.2.1</p> <p style="color: red;">9.2.5</p> <p style="color: red;">12.3</p> <p style="color: red;">Ch 16, 3.7.9</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 style="color: red;">1.2</p> <p style="color: red;">3.2</p> <p style="color: red;">9.2.1</p> <p style="color: red;">9.2.5</p>

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Table 1.8-1R (Sheet 3 of 7)

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

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
Essential Service Water Pipe Tunnel	CDI	The portions of the essential service water pipe tunnel (ESWPT) is outside the standard US-APWR buildings and is CDI. The termination points of the ESWPT are under the T/B and at the UHS related structures. A typical design for the ESWPT is presented in figures in this DCD and is CDI. The final configuration, including physical layout of the ESWPT, is site-specific.	1.2 8.3.1 App. 9A 11.5 12.3	The ESWPT is an underground reinforced concrete structure. The tunnel layout is a rectangular configuration forming a closed looped structure starting at the UHS Basins and terminating at the T/B. The tunnel is divided into two sections by an interior concrete wall to provide separation of piping trains. Each section contains both ESWS supply and return lines. End walls are also provided where required to maintain train separation.	3.8.4.1.3.1 1.2
Offsite Power System	CDI	The offsite power system, transmission circuits, and components that are located outside the high voltage terminals of the main and reserve transformers are CDI. The interface requirements between the standard plant design and the local electrical grid are addressed in this DCD. A typical configuration of the transformers is presented in the DCD, and is CDI. The final configuration of the offsite power transmission system including location and design of the main switchyard area physical layout of the equipment; as well as design details such as transmission tie line voltage level, is site-specific.	8.1 8.2	Interface to transmission system is the low-voltage terminals of the main and reserve auxiliary transformers in the transformed yard. Generator voltage is stepped up to 345 kV and transmitted through overhead transmission tie lines to the 345 kV plant switching station. Reserve transformer steps down 345 kV to onsite medium voltage bus voltage.	1.2 8.1 8.2

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Table 1.8-1R (Sheet 4 of 7)

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

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
Power Source Fuel Storage Vault	CDI	The typical design of the power source fuel storage vaults (PSFSVs) as presented in figures in this DCD is CDI. The final configuration of the PSFSVs including physical location in relation to the standard US-APWR buildings is site-specific.	1.2 App. 9A 12.3	The PSFSVs are underground reinforced concrete structures required to house the safety-related and non safety-related fuel oil tanks. There is one vault for each PS/B. The vault contains two safety-related and one non safety-related oil tanks. Each tank is contained in a separate compartment. Compartments are separated by reinforced concrete walls.	3.8.4.1.3.3 1.2
Potable and Sanitary Water System	CDI	The design and configuration of the potable and sanitary water systems (PSWS) is CDI. The potable water system provides water supply and distribution fit for human consumption, and the sanitary water system provides collection of sanitary wastewater, with standard plant design features to prevent the potential for contamination from radioactive sources.	9.2.4	Potable water supply to CPNPP Units 3 and 4 is from the Somervell County Water District. 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.	9.2.4

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Table 1.8-1R (Sheet 5 of 7)

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

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
Steam Generator Blowdown System	CDI	The portions of steam generator blowdown system (SGBDS) that are downstream of the processing equipment for steam generator blowdown are CDI; including the flow path to the waste water system that is outside of the US-APWR standard plant design.	9.3.2 10.4.8 14.2.12.1.83	The blowdown line from each steam generator is provided with two flow paths, a line for purifying blowdown water used during normal plant operation and a line for discharging the blowdown water to the existing waste water management Pond C or the condenser used during startup and abnormal water chemistry conditions.	9.3.2.2.5 10.4.8 14.2.12.1
Equipment and Floor Drainage Systems	CDI	The portions of equipment and floor drainage systems that are outside the US-APWR standard plant design buildings are CDI and addressed by the COL Applicant; this includes the discharge path to the waste water system. The waste water system used for processing effluent from the systems is a site-specific design and is not part of the standard design.	9.3.2 9.3.3 10.4.8 14.2.12.1.83	The T/B drain sump collects drainage from all equipment and floor drains in the T/B and non-radioactive drain sump. This sump normally discharges to the existing waste water management Pond C. The SGBDS is used to drain the steam generators. In this mode, the blowdown drain water is directed to the condenser or to the existing waste water management Pond C.	9.3.2.2.5 9.3.3 10.4.8 14.2.12.1

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Table 1.8-1R (Sheet 6 of 7)

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

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
Communications Systems	COL Item	The communications systems and equipment which are outside the standard US-APWR buildings are addressed by the COL Applicant. The COL Applicant shall provide adequate external communications, including interfaces with the local telecommunications provider, and communication links between the on-site system and other on-site and offsite 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
Administrative, Emergency Response and Training Facilities	COL Item	The location and design of the administrative building, training structures (including the training simulator), and the Emergency Response Facility are site-specific and are addressed by the COL Applicant.	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
Security Systems	COL Item	The site security/surveillance systems, which includes surveillance cameras, video displays, security detection sensors, communications, security fences and barricades, access control, etc., that are not located within the standard US-APWR building designs, are site-specific and are addressed by the COL Applicant.	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
General Site Improvements	CDI	The landscaping features, roadways, walkways, traffic control barriers, etc., that are located outside the US-APWR standard plant buildings, are site-specific and are addressed by the COL Applicant. These features as presented in the DCD are CDI.	1.2 App. 9A 12.3	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

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Table 1.8-1R (Sheet 7 of 7)

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

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
Fire Protection	COL Item	The fire protection features (such as fire water supply facilities, sprinkler systems, smoke and fire detection devices, and fire alarm systems) that are located outside the US-APWR standard plant buildings, are site-specific and are addressed by the COL Applicant. This includes a seismic category I water source supplied to the seismic standpipe system.	1.2 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
Effluent Monitoring and Sampling	COL Item	The effluent monitoring and sampling systems and features required to monitor levels of activity in plant effluent released to the environment that are not part of the standard US-APWR buildings, are addressed by the COL Applicant.	11.5	The Offsite Dose Calculation Manual is implemented as part of the operational program.	11.5
Compressed Gas Systems	COL Item	The supply portions of oxygen, hydrogen, nitrogen and carbon dioxide systems that are outside the US-APWR standard buildings are addressed by the COL Applicant. Supply lines from yard area connect to distribution lines within US-APWR standard buildings and are necessary for operation of standard plant design 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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Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
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 standard design.	1.1.5	3a
COL 1.1(2)	The COL Applicant is to identify the actual plant location.	1.1.1	3a
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	3a
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	4
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	3a
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	3a
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	3a
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	3a
COL 2.1(1)	The COL Applicant is to describe the site geography and demography including the specified site characteristics.	2.1	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
COL 2.3(1)	The COL Applicant, whether the plant is to be sited inside or outside the continental US, 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	3a
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 52.79(a)(1)(vi) (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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 2.4(1)	The COL Applicant is to provide sufficient site-specific information to verify that hydrologic events will not affect the safety-basis for the US-APWR.	2.0 2.4	3a
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	3a
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	3a
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 systems and components 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 Table 3.2-202	3a
COL 3.2(5)	The COL Applicant is to identify the equipment class and seismic category of the site-specific, safety-related and non 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	3a
COL 3.2(6)	The COL Applicant is to apply DCD methods of equipment classification and seismic categorization of risk-significant, non-safety related SSCs based on their safety role assumed in the PRA and treatment by the D-RAP.	3.2.2.5 Table 3.2-201	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
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	3a
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	3a
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. The COL Applicant shall also verify that the site location does not have features promoting channeling effects or buffeting in the wake of upwind obstructions that invalidate the standard plant wind load design methods described above.	3.3.1.2	3a
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	3a
COL 3.4(1)	The COL Applicant is to address the site-specific design of plant grading and drainage.	3.4.1.2	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
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	3a
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	3a
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	3a
COL 3.4(7)	The COL Applicant is responsible for the protection from internal flooding for those site-specific SSCs that provide nuclear safety-related functions or whose postulated failure due to internal flooding could adversely affect the ability of the plant to achieve and maintain a safe shutdown condition.	3.4.1.3	3a
COL 3.5(1)	The COL Applicant is to have plant procedures in place prior to fuel load that specify unsecured equipment, including portable pressurized gas cylinders, located inside or outside containment and 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.	3.5.1.1.4	2

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.5(2)	The COL Applicant is to commit to actions to maintain P1 within this acceptable limit as outlined in RG 1.115, "Protection Against Low-Trajectory Turbine Missiles" (Reference 3.5-6) and SRP Section 3.5.1.3, "Turbine Missiles" (Reference 3.5-7).	3.5.1.3.2	2
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	3a
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	3a
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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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 assure 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. The COL Applicant is to update the as-design pipe hazards analysis report to include the impact of all site specific high and moderate piping systems.</p>	3.6.1.3	3a
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	Resolution Category
COL 3.6(4)	The COL Applicant is to implement the criteria for defining 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	3a
COL 3.6(5)	Deleted from the DCD.		
COL 3.6(6)	Deleted from the DCD.		
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 3.6(10)	The COL Applicant is to develop a milestone schedule for implementation of the operating and maintenance procedures for prevention of water hammer.	3.6.3.3.1 13.5.1.2	2
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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.7(3)	<p>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:</p> <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	3a
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	3a
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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.7(7)	The COL Applicant is to determine the allowable static and dynamic bearing capacities based on site conditions, including the properties of fill concrete placed to provide a level surface for the bottom of foundation elevations, and to evaluate the bearing loads to these capacities.	3.7.1.3 Table 3.7-203 Table 3.8-202	3a
COL 3.7(8)	The COL Applicant is to evaluate the strain-dependent variation of the material dynamic properties for site materials.	3.7.2.4.1	3a
COL 3.7(9)	The COL Applicant is to assure that the design or location of any site-specific safety-related SSCs, for example pipe tunnels 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	3a
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	3a
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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
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	3a
COL 3.7(15)	Deleted from the DCD.		
COL 3.7(16)	The COL Applicant shall provide free-field seismic instrumentation in the vicinity of the power block area at surface grade which shall be used for shutdown determination, unless otherwise justified. Any such justification shall be based on conditions and requirements specific to the site, and shall include justification for evaluation of OBE exceedance using only measurements from instrumentation installed on the buildings and the structures of the US-APWR standard plant.	3.7.4.1 3.7.4.2 3.7.4.4	3a
COL 3.7(17)	Deleted from the DCD.		
COL 3.7(18)	Deleted from the DCD.		
COL 3.7(19)	The COL Applicant is to identify the implementation milestone for the seismic instrumentation implementation program based on the discussion in Subsections 3.7.4.1 through 3.7.4.5.	3.7.4.6	1b
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.	3.7 Appendix 3NN	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
COL 3.7(22)	The COL Applicant is required to perform site-specific seismic analyses, including SSI analysis which may consider 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	3a
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	3a
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	3a
COL 3.7(25)	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, and PS/B model, utilizing the program ACS SASSI (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.	3.7.2.4.1 Appendix 3NN	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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, 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	3a
COL 3.7(27)	It is the responsibility of the COL Applicant to perform any site-specific seismic analysis for dams that may be required.	3.7.2.13 3.7.3.8	3a
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	3a
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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.8(1)	Deleted from the DCD.		
COL 3.8(2)	Deleted from the DCD.		
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	3a
COL 3.8(4)	Deleted from the DCD.		
COL 3.8(5)	Deleted from the DCD.		
COL 3.8(6)	Deleted from the DCD.		
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 3.8.4.7	3a
COL 3.8(8)	Deleted from the DCD.		
COL 3.8(9)	Deleted from the DCD.		
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	3a
COL 3.8(11)	Deleted from the DCD.		
COL 3.8(12)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.8(13)	Deleted from the DCD.		
COL 3.8(14)	It is the responsibility of the COL Applicant to establish programs 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	1a
COL 3.8(15)	The COL Applicant is responsible for the seismic design of those seismic category I and seismic category II SSCs not seismically designed as part of the US-APWR standard plant, including the following seismic category I structures: ESWPT UHSRS PSFSVs	3.8.4	3a
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, PSFSVs, and other site-specific structures 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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
COL 3.8(21)	Deleted from the DCD.		
COL 3.8(22)	The COL Applicant is to establish a site-specific program for monitoring and maintenance 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). For seismic category I structures, monitoring is to include base settlements and differential displacements.	3.8.4.7	1b
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 basemat for the standard plant, and to pour fill concrete under any basemat above the frost line so that the bottom of fill concrete is below the maximum frost penetration level.	3.8.5.1	3a
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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
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	3a
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	3a
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	3a
COL 3.8(30)	When a coefficient of friction of 0.7 is used in calculating sliding resistance F_s , roughening of fill concrete is required per criteria given in Section 11.7.9 of ACI 349 (Reference 3.8-8). If a coefficient of friction of less than 0.7 is used by the COL Applicant, roughening of fill concrete is not required.	3.8.4.4.3 3.8.5.5.2	3a
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	3a
COL 3.9(2)	The first COL Applicant is to complete the vibration assessment program, including the vibration test results, 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	2
COL 3.9(3)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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 for IST of dynamic restraints in accordance with the ASME OM Code.	3.9.6.4	1b
COL 3.9(7)	Deleted from the DCD.		
COL 3.9(8)	The COL Applicant is to administratively control the edition and addenda to be used for the IST program, and to provide a full description of their IST program for pumps, valves, and dynamic restraints.	3.9.6	3a
COL 3.9(9)	Deleted from the DCD.		
COL 3.9(10)	The COL Applicant is to identify the site-specific active pumps.	3.9.3.3.1	3a
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	3a
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	3a
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	1a
COL 3.10(2)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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 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	1a
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	1a
COL 3.10(6)	Deleted from the DCD.		
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.10(9)	The COL Applicant is to investigate if site-specific in-structure response spectra generated for the COL application may exceed the standard US-APWR design's in-structure response spectra in the high-frequency range. Accordingly, the COL Applicant is to consider 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.	3.10.2	3a
COL 3.10(10)	Deleted from the DCD.		
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	3a
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	3a
COL 3.11(3)	The COL Applicant is to provide a schedule showing the EQ Program proposed implementation milestones.	3.11	4
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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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 qualification process that is equivalent to that delineated for the US-APWR Standard Plant, as described in Technical Report MJAP-08015.	3.11.4	3a
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	3a
COL 3.11(8)	The COL Applicant is to provide the site-specific mechanical equipment requirements.	3.11.6 Table 3D-201	3a
COL 3.11(9)	Optionally, the COL Applicant may revise the parameters based on site-specific considerations.	3.11.1.2	3a
COL 3.12(1)	Deleted from the DCD.		
COL 3.12(2)	If any piping is routed in tunnels or trenches 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.	3.12.5.1	3a
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	3a
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	3a
COL 3.12(5)	The COL holder for the first plant is to perform the pressurizer surge line monitoring subsequent to the COL item 14.2(11).	3.12.5.10	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 3.13(1)	Deleted from the DCD.		
COL 3.13(2)	Deleted from the DCD.		
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	3a
COL 3.13(4)	The COL Applicant is to address compliance with ISI requirements as summarized in Subsection 3.13.2.	3.13.2	1b
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	3a
COL 4.4(1)	Deleted from the DCD.		
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	3a
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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 5.2(4)	<p>Inservice inspection and testing program for the RCPB</p> <p>The COL applicant provides and develops the implementation milestone of the inservice inspection and testing program for the RCPB, in accordance with Section XI of the ASME Code and 10 CFR 50.55a.</p>	<p>5.2.4.1 Table 5.2.4-201 Table 13.4-201</p>	1b
COL 5.2(5)	<p>Preservice inspection and testing program for the RCPB</p> <p>The COL applicant provides and develops the implementation milestone of the preservice inspection and testing program for the RCPB in accordance with Article NB-5280 of Section III, Division I of the ASME Code.</p>	<p>5.2.4.2</p>	1b and 1a
COL 5.2(6)	<p>Deleted from the DCD.</p>		
COL 5.2(7)	<p>Deleted from the DCD.</p>		
COL 5.2(8)	<p>Deleted from the DCD.</p>		
COL 5.2(9)	<p>Deleted from the DCD.</p>		
COL 5.2(10)	<p>Deleted from the DCD.</p>		
COL 5.2(11)	<p>ASME Code Edition and Addenda</p> <p>The COL applicant addresses whether ASME Code editions or addenda other than those specified in Table 5.2.1-1 will be used.</p>	<p>5.2.1.1</p>	3a
COL 5.2(12)	<p>EPRI Primary Water Chemistry Guideline</p> <p>The COL applicant should specify the applicable version of the EPRI "Primary Water Chemistry Guideline" that will be implemented.</p>	<p>5.2.3.2.1</p>	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 5.2(13)	<p>ISI accessibility</p> <p>The COL applicant addresses the discussion of the provisions to preserve accessibility to perform ISI for Class 1 components provided design of US-APWR Class 1 component is changed from the DCD design.</p>	5.2.4.1.1	3a
COL 5.2(14)	<p>Procedures for conversion into common leakage rate</p> <p>The COL Applicant addresses and develops a milestone schedule for preparation and implementation of the procedure.</p>	5.2.5.9	2
COL 5.2(15)	<p>Procedures for operator response to prolonged low-level leakage</p> <p>The COL Applicant addresses and develops a milestone schedule for preparation and implementation of the procedure.</p>	5.2.5.9	2
COL 5.3(1)	<p>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.</p>	5.3.2.1 5.3.2.2	3a
COL 5.3(2)	<p>Reactor Vessel Material Surveillance Program; The COL applicant provides a reactor vessel material surveillance program based on information in Subsection 5.3.1.6.</p>	5.3.1.6	1a

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CP COL 1.8(2)

COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
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	3a
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	3a
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.		
COL 6.1(1)	Deleted from the DCD.		
COL 6.1(2)	Deleted from the DCD.		
COL 6.1(3)	Deleted from the DCD.		
COL 6.1(4)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 6.1(5)	Deleted from the DCD.		
COL 6.1(6)	Deleted from the DCD.		
COL 6.1(7)	The COL Applicant is responsible for identifying the implementation milestones for the coatings program.	6.1.2	2
COL 6.2(1)	Deleted from the DCD.		
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 will be established to limit 200lbs of latent debris, and to limit the allocated 200ft ² of miscellaneous debris per sump.	6.2.2.3 Table 6.2.2-2R	2
COL 6.2(6)	Preparation of administrative procedures is the responsibility of the COL Applicant. The procedures will ensure that RMI and fiber insulation debris within ZOLs will be consistent with the design basis debris specified in the Table 6.2.2-4, and will ensure that the aluminum in containment exposed to water in containment in post-LOCA condition (i.e., spray and blowdown water) is limited to equal or less than 810 ft ² .		
COL 6.2(7)	Deleted from the DCD.		
COL 6.2(8)	The COL applicant is responsible for identifying the implementation milestone for the containment leakage rate testing program described under 10CFR50, Appendix J.	6.2.6.1	1b

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 6.2(9)	Deleted from the DCD.		
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)	Deleted from the DCD.		
COL 6.3(4)	Deleted from the DCD.		
COL 6.3(5)	Deleted from the DCD.		
COL 6.3(6)	Deleted from the DCD.		
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 (Ref 6.4-4) and evaluate the control room habitability based on the recommendation of RG 1.78 (Ref 6.4-4).	6.4.4.2	3a
COL 6.4(2)	The COL Applicant is responsible to discuss the automatic actions and manual actions for the MCR HVAC system in the event of postulated toxic gas release.	6.4.3 6.4.4.2	3a
COL 6.4(3)	Deleted from the DCD.		
COL 6.4(4)	Deleted from the DCD.		
COL 6.4(5)	The number, locations, sensitivity, range, type, and 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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 6.5(1)	Deleted from the DCD.		
COL 6.5(2)	Deleted from the DCD.		
COL 6.5(3)	Deleted from the DCD.		
COL 6.5(4)	Deleted from the DCD.		
COL 6.6(1)	The COL Applicant is responsible for identifying the implementation milestone for ASME Section XI inservice inspection program for ASME Code Section III Class 2 and 3 systems, components (pumps and valves), piping, and supports, consistent with the requirements of 10 CFR 50.55a (g).	6.6	1b
COL 6.6(2)	The COL Applicant is responsible for identifying the implementation milestone for the augmented inservice inspection program.	6.6.8	1b
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	3a
COL 7.5(1)	The COL applicant is to provide a description of site-specific PAM variables.	7.5.1.1 Table 7.5-201	3a
COL 7.5(2)	The COL applicant is to provide a description of the site-specific EOF.	7.5.1.6.2	3a
COL 7.9(1)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
COL 8.2(2)	Deleted from the DCD.		
COL 8.2(3)	The COL applicant is to address the plant switchyard which includes layout, control system and characteristics of circuit breakers and buses, and lightning and grounding protection equipment.	8.1.1 8.1.5.3.5 8.2.1.2.1 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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
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	3a
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	3a
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	3a
COL 8.2(10)	The COL applicant is to address transformer protection corresponded to site-specific scheme.	8.2.1.2	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 8.2(11)	The COL applicant is to address the stability and reliability study of the offsite power system. The stability study is to be conducted in accordance with BTP 8-3 (Reference 8.2-17). The study should address the loss of the unit, loss of the largest unit, loss of the largest load, or loss of the most critical transmission line including the operating range, for maintaining transient stability. A failure modes and effects analysis (FMEA) is to be provided.	8.2.1.2.1.1 8.2.1.2.3 8.2.3 Table 8.2-203	3a
COL 8.2(12)	The grid stability study shows in part that, with no external electrical system failures, the grid will remain stable and the transmission system voltage and frequency will remain within the interface requirements ($\pm 10\%$ for voltage and $\pm 5\%$ for frequency) to maintain the RCP flow assumed in the Chapter 15 analysis for a minimum of 3 seconds following reactor/turbine generator trip.		
COL 8.3(1)	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	3a
COL 8.3(2)	The COL applicant is to provide ground grid and lightning protection.	8.3.1.1.11	3a
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 8.3.1.3.2 8.3.1.3	3a
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.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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 8.3.2.3.2	3a
COL 8.3(9)	Deleted from the DCD.		
COL 8.3(10)	The COL applicant is to provide protective device coordination.	8.3.1.3.4	3a
COL 8.3(11)	The COL applicant is to provide insulation coordination (surge and lightning).	8.3.13.5	3a
COL 8.3(12)	Cable Monitoring Program	8.2.3	3a
COL 9.1(1)	Deleted from the DCD.		
COL 9.1(2)	Deleted from the DCD.		
COL 9.1(3)	Deleted from the DCD.		
COL 9.1(4)	Deleted from the DCD.		
COL 9.1(5)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 9.1(6)	<p>To assure proper handling of heavy loads during the plant life, the COL Applicant is to establish a heavy load handling program, including associated procedural and administrative controls, that satisfies commitments made in Subsection 9.1.5 of the DCD, and that meets the guidance of ANSI/ASME B30.2, ANSI/ASME B30.9, ANSI N14.6, ASME NOG-1, CMAA Specification 70-2000, NUREG-0554, NUREG-0612, and NUREG-0800, Section 9.1.5 and RG 1.206 C.I.9.1.5. During the operating life of the plant, it is anticipated that temporarily installed hoists and mobile cranes will also be used for plant maintenance. The heavy load handling program will include all cranes and hoists on site capable of handling heavy loads, including temporary cranes and hoists. The heavy load handling program will adopt a defense-in-depth strategy to enhance safety when handling heavy loads. For instance, the program will restrict lift heights to practical minimums and limit lifting activities as much as practical to plant modes in which load drops have the smallest potential for adverse consequences, particularly when critical loads are being handled. Further, prior to the lifting of heavy loads after initial fuel loading, the program will institute any additional reviews as necessary to assure that potential drops of these loads due to inadvertent operations or equipment malfunctions, separately or in combination, will not jeopardize safe shutdown functions, cause a significant release of radioactivity, a criticality accident, or inability to cool fuel within the reactor vessel or spent fuel pool. The COL Applicant will prepare a non-critical heavy load procedure that includes sections, on the Design Bases, System Descriptions, Safety Evaluation, Inspection and Testing Requirements, and Instrumentation Requirements for the program. The heavy load program will include requirements for sufficient operator training, system design, load handling instructions, and</p>	COL 9.1.5.3	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
	equipment inspections. Safe load paths will be defined so that heavy loads avoid being moved over or near irradiated fuel or critical equipment. Mechanical stops or electrical interlocks to prevent movement of heavy loads near irradiated fuel or safe shutdown equipment may also be employed.		
COL 9.1(7)	Deleted from the DCD.		
COL 9.1(8)	Deleted from the DCD.		
COL 9.1(9)	The COL applicant is to create a procedure that will instruct operators to perform formal inspection of the integrity of the spent fuel racks.	9.1.2.1	2
COL 9.2(1)	The COL Applicant is to provide the evaluation of the ESWP at the lowest probable water level of the UHS. The COL Applicant is to develop recovery procedures in the event of approaching low water level of UHS.	9.2.1.3 9.2.5.2.1 13.5.2.1	3a
COL 9.2(2)	The COL Applicant is to provide protection of the site-specific portions of the ESWS against adverse environmental, operating, and accident conditions that can occur, such as freezing, low temperature operation, and thermal overpressurization.	9.2.1.3	3a
COL 9.2(3)	The COL Applicant is to determine source and location of the UHS.	9.2.5.2 9.2.5.2.1 9.2.5.2.2 9.2.5.2.3	3a
COL 9.2(4)	The COL Applicant is to determine location and design of the ESW intake structure.	9.2.5.2 9.2.5.2.1 9.2.5.2.2 9.2.5.2.3	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 9.2(5)	The COL Applicant is to determine location and design of the ESW discharge structure.	9.2.5.2 9.2.5.2.1 9.2.5.2.2 9.2.5.2.3	3a
COL 9.2(6)	The COL Applicant is to provide ESWP design details – required total dynamic head with adequate margin, NPSH available, and the mode of cooling the ESWP motor. The COL Applicant is to assure that the sum of the shut-off head of the selected ESW pumps and the static head will not result in system pressure that exceeds the ESWS design pressure at any location within the system. The COL Applicant is to evaluate the potential for vortex formation based on the most limiting assumptions that apply.	9.2.1.2.2 9.2.1.2.2.1 Table 9.2.1-1R	3a
COL 9.2(7)	The COL Applicant is to address the piping, valves, lining material specifications for piping and fittings as applicable, including those at the boundary between the safety-related and nonsafety-related portions, and other design of the ESWS related to the site specific conditions. The COL Applicant is also to design the pipes entering and exiting the pipe tunnel based on the location of the UHSRS.	9.2.1.2.2.5 9.2.1.2.3.1 13.4 Table 13.4-201 9.2.1.3 Figure 9.2.1-1R	3a
COL 9.2(8)	The COL Applicant is to specify the following ESW chemistry requirements <ul style="list-style-type: none"> • A chemical injection system to provide non-corrosive, non-scale forming conditions to limit biological film formation. • Type of biocide, algaecide, pH adjuster, corrosion inhibitor, scale inhibitor and silt dispersant based on the site conditions. 	9.2.1.2.1	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 9.2(9)	The COL Applicant is to confirm the storage capacity and usage of the potable water.	9.2.4.1 9.2.4.2.2.1 9.2.4.2.2.2 9.2.4.2.2.3	3a
COL 9.2(10)	The COL Applicant is to confirm that all State and Local Department of Health and Environmental Protection Standards are applied and followed.	9.2.4.1	3a
COL 9.2(11)	The COL Applicant is to identify the potable water supply and describe the system operation.	9.2.4.1 9.2.4.2.1 9.2.4.2.2.4 9.2.4.2.3 9.2.4.4 9.2.4.5 9.2.4.2 Figure 9.4-201 Figure 9.2.4-1R	3a
COL 9.2(12)	The 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	3a
COL 9.2(13)	Deleted from the DCD.		
COL 9.2(14)	The 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	3a
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 9.2.4.2.2.1 9.2.4.2.2.3	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 9.2(16)	Deleted from the DCD.	Table 9.2.4-1R	3a
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	3a
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 9.2.5.2.1 9.2.5.2.2 9.2.5.2.3	3a
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 9.2.5.2.1 9.2.5.2.2 9.2.5.2.3	3a
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 9.2.5.2.1 9.2.5.2.2 9.2.5.2.3 Table 9.2.5-3R Figure 9.2.5-1R	3a
COL 9.2(21)	The COL Applicant is to determine the source of makeup water to the UHS inventory and the blowdown discharge location based on specific site conditions.	9.2.5.2 9.2.5.2.1 9.2.5.2.2 9.2.5.2.3	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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 per Regulatory Guide 1.27.	9.2.5.3 Table 9.2.5-4R	3a
COL 9.2(23)	The COL Applicant is to provide test and inspection requirements of the UHS. These 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 13.5	3a
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	3a
COL 9.2(25)	The COL Applicant is to develop system filling, venting, keeping full, and operational procedures to minimize the potential for water hammer; to analyze the system for water hammer impacts; to design the piping system to withstand potential water hammer forces; and to analyze water hammer events in accordance with NUREG-0927.	9.2.1.2.1 13.5.2.1	2
COL 9.2(26)	The COL applicant is to specify appropriate sizes of piping and pipe fittings such as restriction orifices to prevent potential plugging due to debris buildup, and develop maintenance and test procedures to monitor debris build up and flush out debris.	9.2.1.2.1 9.2.1.3 13.5.2.1	2
COL 9.2(27)	The COL Applicant is to develop a milestone schedule for implementation of the operating and maintenance procedures for water hammer prevention.	9.2.7.2.1 13.5.2.1	2

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 9.2(28)	The COL Applicant is to provide the piping, valves, materials specifications, and other design details related to the site-specific UHS.	9.2.5.2.2 9.2.5.2.3	3a
COL 9.2(29)	The COL Applicant is to provide the safety evaluation of the capability of the ESWS to: (1) isolate its site-specific, nonsafety-related portions; and (2) provide measures to prevent long-term corrosion and organic fouling that may degrade its performance, per Generic Letter (GL) 89-13.	9.2.1.3 13.5.2.1	3a
COL 9.2(30)	The COL Applicant shall conduct periodic inspection, monitoring, maintenance, performance and functional testing of the ESWS and UHS piping and components, including the heat transfer capability of the CCW heat exchangers and essential chiller units, consistent with GL 89-13 and GL-89-13 Supplement 1. The COL Applicant is to develop operating procedures to periodically alternate the operation of the trains to ensure performance of all trains is regularly monitored.	9.2.1.4 13.4 13.5 13.5.2.1	3a
COL 9.2(31)	The COL Applicant is to verify the system layout of the ESWS and UHS and is to develop operating procedures to assure that the ESWS and UHS are above saturation conditions for all operating modes.	9.2.1.2.1 9.2.5.2.2 9.2.5.2.3	3a
COL 9.2(32)	The COL Applicant is to provide a void detection system with alarms to detect system voiding.	9.2.1.2.3.1 9.2.5.5	3a
COL 9.2(33)	The COL Applicant is to provide the design details of the strainer blowdown line, vent line, and their discharge locations.	9.2.1.2.2.2	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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.		
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	3a
COL 9.4(5)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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 9.4-203 Figure 9.4-201	3a
COL 9.4(7)	The COL Applicant is to determine the frequency of performance of periodic auxiliary building HVAC system ventilation flow balancing.	9.4.3.4.1	2
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	1a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 9.5(3)	The COL Applicant describes the 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	3a
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	3a
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	3a
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	3a
COL 9.5(7)	Deleted from the DCD.		
COL 9.5(8)	The COL Applicant addresses offsite communications for the onsite operations support center.	9.5.2.2.5.2	3a
COL 9.5(9)	Deleted from the DCD.		
COL 9.5(10)	Deleted from the DCD.		
COL 9.5(11)	The COL Applicant is to specify that adequate and acceptable sources of fuel oil are available, including the means of transporting and recharging the fuel storage tank, following a design basis accident.	9.5.4.3	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 9.5(12)	The COL Applicant is to address the need for installing unit heaters in the Power Source Fuel Storage Vault during the winter for site locations where extreme cold temperature conditions exist.	9.5.4.3	3a
COL 10.2(1)	Inservice Inspection	10.2.3.5	2
COL 10.3(1)	The Combined License Applicant is to establish a turbine maintenance and inspection procedure prior to fuel load. FAC monitoring program	10.3.6.3	2
COL 10.3(2)	The Combined License Applicant will provide a description of the FAC monitoring program for carbon steel portions of the steam and power conversion systems that contain water or wet steam and are susceptible to erosion-corrosion damage. The description will address consistency with Generic Letter 89-08 and NSAC-202L-R2 and will provide a milestone schedule for implementation of the program.		
COL 10.3(3)	Deleted from the DCD. Operating and maintenance procedures for water hammer prevention	10.3.2.4.3	2
	The Combined License Applicant is to provide operating and maintenance procedures including adequate precautions to prevent water (steam) hammer, relief valve discharge loads and water entrainment effects in accordance with NUREG-0927 and a milestone schedule for implementation of the procedure.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 10.3(4)	The COL applicant will provide secondary side water chemistry threshold values and recommended operator actions for chemistry excursions, or provide a commitment to the latest version of the EPR1 "PWR Secondary Water Chemistry Guidelines" in effect at the time of COLA submittal.	10.3.5.5	1a
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 Table 10.4.5-1R Figure 10.4.5-1R Figure 10.4.5-201	3a
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 Table 10.4.8-1R Figure 10.4.8-1R Figure 10.4.8-2R Figure 10.4.8-201	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 10.4(6)	<p>Operating and maintenance procedures for water hammer prevention</p> <p>The combined License Applicant is to provide operating and maintenance procedures in accordance with NUREG-0927 and a milestone schedule for implementation of the procedure.</p>	<p>10.4.7.7 10.4.9.2.2</p>	2
COL 11.2(1)	<p>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.</p>	11.2.1.6	3a
COL 11.2(2)	<p>Site-specific information of the LWMS, e.g., radioactive release points, effluent temperature, shape of flow orifices, etc., is provided in the COLA.</p>	<p>11.2.2 11.2.3.1</p>	3a
COL 11.2(3)	<p>The COL applicant is responsible for the site-specific hydrogeological data and for performing an analysis to demonstrate that the potential groundwater or surface water contamination concentration resulting from radioactive release due to liquid containing tank failure meets the 10 CFR 20, Appendix B, Table2 ECL.</p>	11.2.3.2	3a
COL 11.2(4)	<p>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.</p>	<p>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</p>	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
COL 11.2(6)	The COL applicant is to provide piping and instrumentation diagrams (P&IDs).	11.2.2 Figure 11.2-201	3a
COL 11.2(7)	The COL Applicant is responsible for identifying the implementation milestones for the coatings program used in the LWMS. The coatings program addresses RG 1.54 Revision 1, recognizing that more recent standards may be used if referenced in DCD Section 11.2.	11.2.4	1b
COL 11.2(8)	The COL Applicant is to describe mobile/portable LWMS 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), and operational procedures of the mobile/portable LWMS connections. 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. 11.2-25) is followed.	11.2.1.6	3a
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 released point height.	11.3.2	3a
COL 11.3(4)	Deleted from the DCD.		
COL 11.3(5)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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 Table 11.3-206	3a
COL 11.3(7)	Deleted from the DCD.		3a
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	3a
COL 11.3(9)	The COL applicant is to provide piping and instrumentation diagrams (P&IDs).	11.3.2 Figure 11.3-201	3a
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	3a
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	1a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 11.4(4)	The COL applicant is to describe 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	3a
COL 11.4(5)	The current design provides collection and packaging of potentially contaminated clothing for offsite shipment and/or disposal. Depending on site-specific requirements, the COL applicant can send the wastes to an offsite laundry facility processing and/or bring in a mobile compaction unit for volume reduction. The laundry services, including contracted services and/or a temporary mobile compaction subsystem are COL items.	11.4.1.3 11.4.1.6	3a
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	3a
COL 11.4(7)	The SWMS design does not include solid waste processing facility (e.g. de-watering system, compactor for reducing waste volume) but provides the flexibility for the site-specific utilities to add compaction equipment or to adopt contract services from specialized facilities. This is the responsibility of the COL applicant.	11.4.1.6 11.4.2.3 11.4.4.5	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 11.4(9)	The COL Applicant is responsible for identifying the implementation milestones for the coatings program used in the SWMS. The coatings program addresses RG 1.54 Revision 1, recognizing that more recent standards may be used if referenced in DCD Section 11.4.	11.4.6	1b
COL 11.4(10)	The COL Applicant is responsible for ensuring that mobile and temporary solid radwaste processing and its interconnection to plant systems conforms to regulatory requirements and guidance such as 10 CFR 50.34a (Ref. 11.4-11), 10 CFR 20.1406 (Ref. 11.4-16) and RG 1.143 (Ref. 11.4-1).	11.4.1.6	3a
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	3a
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 07-09A (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	1a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 11.5(3)	<p>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 07-09A (Ref. 11.5-30) as an alternative to providing the radiological effluent monitoring program at the time of application.</p>	11.5.2.10	1a
COL 11.5(4)	<p>The COL applicant is to develop procedures which are of inspection, decontamination, and replacement related to radiation monitoring instruments.</p>	11.5.2.6 11.5.2.8	2
COL 11.5(5)	<p>The COL applicant is to provide analytical procedures and sensitivity for selected radioanalytical methods and type of sampling media for site-specific matter.</p>	11.5.2.6 11.5.2.8	2
COL 11.5(6)	<p>The COL applicant is to perform a site-specific cost benefit analysis to demonstrate compliance with the regulatory requirements.</p>	11.5.2.11	3a
COL 12.1(1)	<p>The COL Applicant is to demonstrate that the policy considerations regarding plant operations are compliance with RG 1.8, 8.8 and 8.10 (Subsection 12.1.1.3).</p>	12.1.1.3.1 12.1.1.3.2 12.1.1.3.3	3a
COL 12.1(2)	<p>Deleted from the DCD.</p>		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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, 8.25, 8.27, 8.28, 8.29, 8.34, 8.35, 8.36 and 8.38.	12.1.3	3a
COL 12.1(4)	Deleted from the DCD.		
COL 12.1(5)	The COL Applicant is to describe the operational radiation protection program for ensuring that occupational radiation exposures are ALARA.	12.5	1a
COL 12.1(6)	The COL applicant is to describe the periodic review of operational practices to ensure configuration management, personnel training and qualification update, and procedure adherence.	12.1.3	3a
COL 12.1(7)	The COL applicant is to describe implementation of requirements for record retention are tracked according to 10 CFR50.75(g) and 10 CFR70.25(g) as applicable.	12.1.3 12.3.1.3.2	3a
COL 12.1(8)	The COL Applicant is responsible for the development of the operational procedures, following the guidance of RG 4.21 (Reference 12.1-27), for the operation and handling of all structure, system, and components (SSC) which could be potential sources of contamination within the plant. These procedures will be developed according to the objective of limiting leakage and the spread of contamination within the plant.	12.1.3 12.3.1.3.2	3a
COL 12.2(1)	The COL Applicant is to list 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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 12.2(2)	The COL Applicant is to address the radiation protection aspects associated with additional storage space for radwaste and/or additional radwaste facilities for dry active waste.	12.2.1.1.10 12.5	3a
COL 12.2(3)	The COL Applicant is to include the conduct of regular surveillance activities and provisions to maintain the dose rate at 2 meters from the surface of both the RWSAT and PMWTs under 0.25 mrem/h in the Radiation Protection Program.	12.5	3a
COL 12.2(4)	The COL Applicant is to implement a method of ensuring that the radioactivity concentration in both the RWSAT and the PMWTs remain under the specified concentration level described in the DCD.	12.5	3a
COL 12.3(1)	The COL Applicant shall describe 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	3a
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	3a
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	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 12.3(6)	If the COL Applicant adopts the Mobile Liquid Waste Processing System, the COL Applicant is to provide information about the radiation protection aspects of the system and to indicate how the system is consistent with the guidance in SRP Section 12.3-12.4, RG 1.206 C.I.12.3.2 and RG 1.69.	12.3.1.1.1.2	3a
COL 12.3(7)	If the COL Applicant adopts the Mobile Liquid Waste Processing System, the COL Applicant is to provide information about prevention and detection of contamination of the environment and minimization of decommissioning costs and to explain how the system meets the requirements of 10 CFR 20.1406 and RG 4.21.	11.2.1.6 12.3.1.1.1.2	3a
COL 12.3(8)	If the COL Applicant adopts the Mobile Liquid Waste Processing System, the COL Applicant is to confirm the radiation zone(s) where the system is installed in and to revise Figure 12.3-1, if necessary.	12.3.1.1.1.2	3a
COL 12.3(9)	In order to ensure that the B.A. evaporator room does not become a VHRA during the end of cycle, the COL Applicant is to stipulate a need for routine surveillance in the Radiation Protection Program. In the event that the routine surveillance shows an increase in dose level, the COL Applicant must provide an appropriate strategy to sufficiently reduce the dose rate below the criteria for a VHRA.	12.5	3a
COL 12.3(10)	The COL Applicant will address the site-specific design features, operational, postconstruction objectives, and conceptual site model guidance of Regulatory Guide 4.21.	12.3.1.3.1.1 12.3.1.3.2 Table 12.3-201 Figure 12.3-201	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
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 13.1.2 Table 13.1-201 Table 13.1-202	3a
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	3a
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 Figure 13.1-204	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 13.1(4)	The COL Applicant is to develop a description of the organizational arrangement. 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 13.1.2 Table 13.1-201 Table 13.1-202	3a
COL 13.1(5)	The COL Applicant is to develop the description of the general qualification requirements in terms of educational background and experience for positions or classes of positions depicted in the organizational arrangement.	13.1.3 13.1.1.3	3a
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 Figures 13.1-202 and 203 13.1.1.1 Table 13.1-201 Table 13.1-202	3a
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	3a
COL 13.2(1)	The COL Applicant is to develop the training program description.	13.2 Figure 13.1-205	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 13.2(2)	The COL Applicant is to develop training programs for reactor operators in accordance with NUREG-0800, Section 13.2.1.1.3 (Ref. 13.2-4).	13.2 Figure 13.1-205	1a
COL 13.2(3)	The COL Applicant is to develop training programs for non-licensed plant staff in accordance with NUREG-0800, Section 13.2.2.1.3 (Ref. 13.2-4).	13.2 Figure 13.1-205	1b
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 Figure 13.1-205	3a
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 Figure 13.1-205	3a
COL 13.3(1)	The COL Applicant is to develop interfaces of design features with site specific designs and site parameters.	13.3	3a
COL 13.3(2)	The COL Applicant is to develop a comprehensive emergency plan as a physically separate document.	13.3.1	3a
COL 13.3(3)	The COL Applicant is to develop an emergency classification and action level scheme.	13.3.1	3a
COL 13.3(4)	The COL Applicant is to develop the security-related aspects of emergency planning.	13.3.1	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
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	3a
COL 13.3(6)	The COL Applicant is to develop an emergency planning inspections, tests, analyses, and acceptance criteria.	13.3.3	3a
COL 13.3(7)	The COL Applicant is to develop the description of the operation support center.	13.3	3a
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. FSAR sections 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	1a
COL 13.4(2)	The COL Applicant is to develop a leakage monitoring and prevention program for the systems specified in TS 5.5.2. The leakage monitoring and prevention program will include the appropriate methods and acceptance criteria as defined in NUREG-0737 Item III.D.1.1 (Ref 13.4-2).	Table 13.4-201 13.4.1	1b
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	2
COL 13.5(2)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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 13.5.2.1	2
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 13.5.2.1	3a
COL 13.5(5)	The COL Applicant is to describe the program for developing operating procedures.	13.5.2 13.5.2.1	3a
COL 13.5(6)	The COL Applicant is to describe the program for developing and implementing emergency operating procedures.	13.5.2 13.5.2.1	3a
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	3a
COL 13.6(1)	The COL Applicant is to develop and provide the plant overall security plan (consisting of the physical security plan, safeguards contingency plan, and the guard training and qualification plan) and the cyber security plan and the implementation schedule for security programs.	13.6 Table 13.4-201	1a 3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 13.6(2)	The COL applicant is to develop and provide as part of its physical security plan site specific physical security features and capabilities, such as (i) the physical barrier surrounding the protected area boundary; (ii) the isolation zone in areas adjacent to the protected area boundary; (iii) security lighting, or use of low-light technology, for the isolation zone and protected area; (iv) the vehicle barrier system, (v) controlled access points to control entry of personnel, vehicles and materials into the protected area, (vi) the intrusion detection system, and (vii) the closed circuit television camera and video assessment systems to provide monitoring and assessment of the protected area perimeter.	13.6.1 13.6.2 Physical Security Plan	3a
COL 13.6(3)	The COL applicant is to revise the non-standard plant vital area and vital equipment information contained in the US-APWR Design Certification, Physical Element Review to be consistent with its site-specific design.	13.6.2.2	3a
COL 13.6(4)	The COL applicant is to make provision for the secondary alarm station in accordance with the requirements of 10 CFR 73.55(i)(4).	13.6.2.2	3a
COL 13.6(5)	The COL applicant's physical security plan is to make provision for radio or microwave transmitted two-way voice communication) to communicate with the local law enforcement agencies.	13.6.2.5 Physical Security Plan	3a
COL 13.7(1)	The COL Applicant is to develop the description of the operating and construction plant fitness-for-duty programs.	13.7	3a
COL 14.2(1)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 14.2(2)	The COL Applicant reconciles the site-specific organization, organizational titles, organizational responsibilities, and reporting relationships to be consistent with US-APWR Test Program Description Technical Report, MUAP-08009 (Reference 14.2-29) [14.2.2].	14.2.2	3a
COL 14.2(3)	Deleted from the DCD.		
COL 14.2(4)	Deleted from the DCD.		
COL 14.2(5)	Deleted from the DCD.		
COL 14.2(6)	Deleted from the DCD.		
COL 14.2(7)	The COL applicant provides an event-based schedule, relative to fuel loading, for conducting each major phase of the test program, and 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. For multiunit sites, the COL applicant discusses the effects of overlapping initial test program schedules on organizations and personnel participating in each ITP. 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. [14.2.9][14.2.11]	14.2.9 14.2.11 Table 14.2-202	4
COL 14.2(8)	Deleted from the DCD.		
COL 14.2(9)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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. [14.2.12]	14.2.12.1.90.C.8 14.2.12.1.112 14.2.12.1.113 14.2.12.1.114 Table 14.2-201 Appendix 14A	3a
COL 14.2(11)	The COL holder for the first plant is to perform the first plant only tests and prototype test. For subsequent plants, either these tests are performed, or the COL applicant provides a justification that the results of the first-plant only tests are applicable to the subsequent plant and are not required to be repeated. [14.2.8]	14.2.8.1 14.2.8.2.1 14.2.8.2.2	3a
COL 14.2(12)	The COL holder makes available approved test procedures for satisfying testing requirements described in Section 14.2 to the NRC approximately 60 days prior to their intended use. [14.2.3, 14.2.11, 14.2.12.1]	14.2.3	2
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. [14.3.4.6, 14.3.4.7]	14.3.4.7	5
COL 14.3(2)	The COL applicant provides the 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	5
COL 14.3(3)	The COL applicant provides ITAAC for the facility's physical security hardware not addressed in the DCD in accordance with RG 1.206 (Reference 14.3-1) as appropriate, and provides abstracts describing the specific inspections, tests and analysis for the facility's physical security hardware ITAAC not addressed in the DCD.	14.3.4.12	5

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 14.3(4)	The COL Applicant provides a DAC closure schedule and declares whether the standard approach is used for closure of DAC ITAAC, as described by Appendix 14.B.1	14.3.4.3	
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 10 CFR 52.79 and the control room dose limits in 10 CFR 50, Appendix A, General Design Criterion 19 are met for affected events using site-specific χ/Q values. Additionally, the Technical Support Center (TSC) dose should be evaluated against the habitability requirements in Paragraph IV.E. 8 to 10 CFR Part 50, Appendix E, and 10 CFR 50.47(b)(8) and (b)(11).	15.0.3.3	3a
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	3a
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	3a
COL 16.1_3.3.1(1)	Deleted from the DCD.		
COL 16.1_3.3.2(1)	Deleted from the DCD.		
COL 16.1_3.3.5(1)	The time delay values in SR 3.3.5.3 are to be confirmed based on the plant specific transmission system performance.	COLA Part 4, Section A	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 16.1_3.3.6(1)	Deleted from the DCD.		
COL 16.1_3.4.17(1)	Deleted from the DCD.		
COL 16.1_3.7.9(1)	LCO 3.7.9 and associated Bases for the Ultimate Heat Sink based on plant specific design, including required UHS water volume, lowest water level for ESW pumps and maximum water temperature of the UHS, are to be developed.	COLA Part 4, Section A	3a
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	3a
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	3a
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	3a
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	3a
COL 16.1_4.1(1)	The site specific information for site location is to be provided.	COLA Part 4, Section A	3a
COL 16.1_4.3.1(1)	Deleted from the DCD.		
COL 16.1_5.1.1(1)	The titles for members of the unit staff are to be specified .	COLA Part 4, Section A	3a
COL 16.1_5.1.2(1)	The titles for members of the unit staff are to be specified .	COLA Part 4, Section A	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 16.1_5.2.1(1)	The titles for members of the unit staff are to be specified.	COLA Part 4, Section A	3a
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	3a
COL 16.1_5.3.1(1)	Minimum qualification for unit staff is to be specified.	COLA Part 4, Section A	3a
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	3a
COL 16.1_5.5.9(1)	Deleted from the DCD.		
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	3a
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	3a
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	3a
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	3a
COL 16.1_5.6.7(1)	Deleted from the DCD.		
COL 16.1_5.7(1)	The site specific information about High Radiation Area is to be provided.	COLA Part 4, Section A	3a

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 17.4(1)	<p>The COL Applicant shall be responsible for the development and implementation of the Phases II and III of the D-RAP, including QA requirements. In the Phase II, the plant's site-specific information should be introduced to the D-RAP process and the site-specific risk-significant SSCs should be combined with the US-APWR design risk-significant SSCs into a list for the specific plant. Phase II is performed during the COL application phase and updated/maintained during the COL license holder phase. 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. Phase III is performed during the COL license holder phase and prior to initial fuel loading. The COL applicant will propose a method by which it will incorporate the objectives of the reliability assurance program into other programs for design or operational errors that degrade nonsafety-related, risk-significant SSCs.</p>	<p>17.4.3 17.4.4 17.4.7 17.4.8 Table 17.4-201</p>	2

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 17.4(2)	<p>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 non-safety-related SSCs within the scope of the RAP. A description of the proposed method for developing/integrating the operational RAP into operating plant programs (e.g., maintenance rule, quality assurance) is performed during the COL application phase. The development/integration of the operational RAP is performed during the COL license holder phase and prior to initial fuel loading. All SSCs identified as risk-significant within the scope of the D-RAP should be categorized as high-safety-significant (HSS) within the scope of initial Maintenance Rule. The integration of reliability assurance activities into existing operational programs will also address establishment of:</p> <ol style="list-style-type: none"> 1) Reliability performance goals for risk-significant SSCs consistent with the existing maintenance and quality assurance processes on the basis of information from the DRAP (for example, implementation of the maintenance rule following the guidance contained in RG 1.160 is one acceptable method for establishing performance goals provided that SSCs are categorized as HSS within the scope of the Maintenance Rule program), and 2) Performance and condition monitoring requirements to provide reasonable assurance that risk-significant SSCs do not degrade to an unacceptable level during plant operations. 	<p>17.4.3 17.4.4 17.4.5 17.4.7</p>	1b

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 17.5(1)	The COL applicant shall develop and implement a Quality Assurance Program Description for site-specific design activities and for plant construction and operation.	17.0 17.1 17.2 17.3 17.5	3a
COL 17.6(1)	The COL applicant must provide in its FSAR a description of the maintenance rule program, and its for implementation, for monitoring the effectiveness of maintenance necessary to meet the requirements of 10 CFR 50.65.	17.6	1b
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.		
COL 18.8(1)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
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. Peer reviews for the updated PRA will be performed prior to the use of PRA to risk-informed applications.	19.1.7.6	4
COL 19.3(2)	Deleted from the DCD.		
COL 19.3(3)	Deleted from the DCD.		

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COL Item No.	COL Item	FSAR Location	Resolution Category
COL 19.3(4)	The Probabilistic Risk Assessment and Severe Accident Evaluation is updated as necessary to assess specific site information and all potential site specific external hazards (both natural and man-made hazards) that may affect the facility are screened out or subjected to analysis.	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	3a
COL 19.3(5)	The COL Applicant will identify a milestone for completing a comparison of the as-built SSC HCLPFs to those assumed in DCD Subsection 19.1.5.1. Deviations from the HCLPF values or other assumptions in the seismic margins evaluation shall be analyzed to determine if any new vulnerability has been introduced.	19.1.5.1.1 19.1.5.1.2 Table 19.1-206	4

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Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 19.3(6)	The COL Applicant develops or describes an accident management program which includes emergent operating procedures, consideration of risk-significant operator actions listed in DCD Table 19.1-119, training, and human reliability related severe accident guidance programs. Insights gained from the design specific PRA, including insights created by the incorporation of site and plant-specific information available at the COL application phase (for aspects of the design which are not bounded by the Standard Plant PRA), are to be reflected appropriately.	19.2.5 Table 19.1-119R	2
COL 19.3(7)	The COL Applicant will provide a milestone for completing the equipment survivability assessment of the as-built equipment required to mitigate severe accidents (electrical penetrations, hydrogen igniters and containment pressure (wide range)) to provide reasonable assurance that they will operate in the environmental conditions resulting from hydrogen burns associated with severe accidents for which they are intended and over the time span for which they are needed.	19.2.3.3.7	3a
COL 19.3(8)	The COL applicant will describe the uses of PRA in support of licensee programs and identify and describe risk-informed applications being implemented during the operational phase.	19.1.1.4.1 19.1.1.4.2	1b

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Resolution of Combined License Items for Chapters 1 - 19

COL Item No.	COL Item	FSAR Location	Resolution Category
COL 19.3(9)	The COL applicant will describe the PRA maintenance and upgrade programs.	19.1.2.4	1b

Note:

The designation of the resolution category indicates the resolution status of each COL item categorized to 1a, 1b, 2, 3a, 3b, 3c, 4, or 5

1. Operational programs
 - 1a. Applicant item as License Condition for Operational program
 - 1b. Applicant item as Commitment for Operational program
2. Plant procedures
3. Design information
 - 3a. Applicant item Design information provided in FSAR
 - 3b. Applicant item as Commitment for Design information to be provided before COL issuance
 - 3c. Not used
4. Detailed schedule information
5. The inspections, tests, analyses, and acceptance criteria (ITAAC)
(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 aspects 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 operational aspects and design that are not included in the referenced certified design, **Tables 1.9-201** through **1.9-203** and **1.9-221** 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.

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Division 5 of the RGs applies to the Physical Security Plan, and those topics are addressed in the COLA Part 8.

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 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. 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

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NRC Bulletins and NRC Generic Letters as of December 12, 2007. The table 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.***

The applicable requirements of 10 CFR 30, 40, 70, 73 and 74 regarding emergency protection and preparedness, security, non-licensed staff training and fire protection program elements that will be in place prior to receipt of byproduct, source or special nuclear material are located in **Subsections 12.2.1.1.10, 13.5.2.2, 13.6, and Tables 1.9-220 and 13.4-201.**

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CP COL 1.9(1)

**Table 1.9-201 (Sheet 1 of 12)
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
1.8	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 17.5 COLA Part 4
1.12	Nuclear Power Plant Instrumentation for Earthquakes	Revision 2 March 1997	Conformance	3.7.4
1.16	Reporting of Operating Information – Appendix A Technical Specifications	Revision 4 August 1975	Not applicable	N/A
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	(This RG was withdrawn on 8/11/2009.) Conformance with exceptions (ANSI N13.1-1999 is applied in C.6.)	11.5.2
1.23	Meteorological Monitoring Programs for Nuclear Power Plants	Second Proposed Revision 1 April 1986	Conformance; revision of record CPNPP Units 1 and 2	2.3.3 2.3.4
1.24	Assumptions Used for Evaluating the Potential Radiological Consequences of a Pressurized Water Reactor	Revision 0 March 1972	Conformance	N/A
1.26	Radioactive Gas Storage Tank Failure Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants	Revision 4 March 2007	Conformance	3.2 17.5 (QAPD)

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**Table 1.9-201 (Sheet 2 of 12)
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.)	17.3 17.5
1.29	Seismic Design Classification	Revision 4 March 2007	Conformance	2.4.2 - 2.4.4
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.)	17.3 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 17.5 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)	3.8.1.7
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.)	17.5

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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
1.38	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.)	17.5
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.)	17.5
1.54	Service Level I, II, and III Protective Coatings Applied to Nuclear Power Plants	Revision 1 July 2000	Conformance with exceptions. ASTM standard revision levels may differ from RG 1.54 as specifically referenced in the "Corresponding Chapter/Section."	6.1.2, 11.2, 11.4
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
1.60	Design Response Spectra for Seismic Design of Nuclear Power Plants	Revision 1 December 1973	Conformance	2.5.2

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Table 1.9-201 (Sheet 4 of 12)
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
1.61	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 14.2 Appendix 14A
1.68	Initial Test Programs for Water-Cooled Nuclear Power Plants	Revision 3 March 2007	Conformance	
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 has been withdrawn by NRC.)	N/A
1.84	Design, Fabrication, and Materials Code Case Acceptability, ASME Section III	Revision 34 October 2007	Conformance	N/A
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

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**Table 1.9-201 (Sheet 5 of 12)
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
1.91	Evaluations of Explosions Postulated To Occur on Transportation Routes Near Nuclear Power Plants	Revision 1 February 1978	Conformance	2.2
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.)	17.5
1.100	Seismic Qualification of Electric and Mechanical Equipment for Nuclear Power Plants	Revision 2 June 1988	Conformance	N/A
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
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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Table 1.9-201 (Sheet 6 of 12)
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
1.111	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 11.3.3 11.5.2
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	3.5.1.3.2
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.)	17.3 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 3MIM
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	N/A

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Table 1.9-201 (Sheet 7 of 12)
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
1.132	Site Investigations for Foundations of Nuclear Power Plants	Revision 2 October 2003	Conformance	2.5.1 2.5.4
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.)	N/A
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	Not applicable (This RG has been withdrawn by NRC.)	N/A
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
1.143	Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants	Revision 2 November 2001	Conformance	3.2 10.4.8 11.2.1.6 11.2.3.1 11.4.1.6 11.4.4.5
1.145	Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants	Revision 1 November 1982	Conformance	2.3.4

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Table 1.9-201 (Sheet 8 of 12)
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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
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
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 (This RG has been withdrawn by NRC.)	NA

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**Table 1.9-201 (Sheet 9 of 12)
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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.166	Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Post earthquake Actions	Revision 0 March 1997	Conformance	N/A
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 and surveillance frequency control program.)	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 surveillance frequency control program.)	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

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
1.179	Standard Format and Content of License Termination Plans for Nuclear Power Reactors	Revision 0 January 1999	Not applicable	N/A
1.181	Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)	Revision 0 September 1999	(CPNPP Units 3 and 4 are new units. RG applies to license termination for an existing unit.) 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 2000	July Conformance	12.4.1.9.4.2 15.0.3
1.184	Decommissioning of Nuclear Power Reactors	Revision 0 2000	July 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 2000	July 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
1.187	Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments	Revision 0 November 2000	Conformance	N/A

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**Table 1.9-201 (Sheet 11 of 12)
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
1.188	Standard Format and Content for Applications To Renew Nuclear Power Plant Operating Licenses	Revision 1 September 2005	Not applicable	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	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	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
1.196	Control Room Habitability at Light-Water Nuclear Power Reactors	Revision 1 January 2007	Conformance	2.3.4 6.4 COLA Part 4

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**Table 1.9-201 (Sheet 12 of 12)
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
1.197	Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors	Revision 0 2003	May Conformance	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 2006	May 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 2007	June 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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CP COL 1.9(1)

Table 1.9-202

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 with exceptions (QA requirements meet existing active radiological monitoring program for CPNPP Units 1 and 2.)	11.5 12.5
4.21	Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning	June 2008	Conformance	11.2.3.1 11.2.3.4 12.3.1.3.1.1 12.3.1.3.2 and Table 12.3-201

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Table 1.9-203 (Sheet 1 of 3)

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
8.2	Guide for Administrative Practices in Radiation Monitoring	Revision 0 February 1973	Conformance	12.1.3
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	N/A
8.6	Standard Test Procedure for Geiger-Muller Counters	Revision 0 May 1973	Not applicable	N/A
8.7	Instructions for Recording and Reporting Occupational Radiation Exposure Data	Revision 2 November 2005	(This RG has been withdrawn by NRC.) 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	11.3.1 11.4.1 11.4.2 12.1.1.3.2 12.2.1.1.10 12.3.1 12.3.2.2

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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
8.9	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	12.1.1.3.3
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
8.25	Air Sampling in the Workplace	Revision 1 June 1992	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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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
8.34	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

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Table 1.9-204

**Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
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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Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
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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Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
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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Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
Chapter 2 Site Characteristics

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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**Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
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	3.5.1.3.1 3.5.1.3.2
3.5.1.4	Missiles Generated by Tornados 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	Conformance	3.5.2
3.7.1	Seismic Design Parameters	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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Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
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.)	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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Table 1.9-211

**Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
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 10.4.5.3 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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Table 1.9-213

**Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
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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**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
13.1.1	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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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 and Surveillance Frequency Control Program .)	N/A

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Table 1.9-218

**Comanche Peak Nuclear Power Plant Units 3 & 4 Conformance with Standard Review Plan
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
NRC Bulletin 2007-01: Security Officer Attentiveness December 12, 2007	<p>Requested Action:</p> <ol style="list-style-type: none"> How do you identify, report, and document human performance issues involving inattentiveness, especially complicity among licensee security personnel including security contractors and subcontractors. 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? 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? 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? 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>
NRC Bulletin 2005-01: Material Control and Accounting at Reactors and Wet Spent Fuel Storage Facilities	<p>"Exempt from Public Disclosure in accordance with 10 CFR 2.390.</p>	<p>This bulletin is addressed in the Special Nuclear Material (SNM) Material Control and Accounting (MC&A) Program description.</p>	<p>Table 13.4-201 Subsection 13.5.2.2 addresses plant procedure implementation of the SNM MC&A Program.</p>

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Table 1.9-221

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RG Number	RG Title	Revision/Date	COLA FSAR Status	Corresponding Chapter/Section
5.7	Entry/Exit Control for Protected Areas, Vital Areas, and Material Access Areas	Revision 1 May 1980	Conformance	13.6.2
5.12	General Use of Locks in the Protection and Control of Facilities and Special Nuclear Material	Revision 0 November 1973	Conformance	13.6.2
5.44	Perimeter Intrusion Alarm Systems	Revision 3 October 1997	Conformance	13.6.2
5.65	Vital Area Access Controls, Protection of Physical Security Equipment, and Key and Lock Controls	Revision 0 September 1986	Conformance	13.6.2
5.66	Access Authorization Program for Nuclear Power Plants (Rev. 0, June 1991)	Revision 0 June 1991	Conformance	13.6.2
5.68	Protection Against Malevolent Use of Vehicles at Nuclear Power Plants	Revision 0 August 1994	Conformance	13.6.2
5.69	Guidance for the application of the radiological sabotage design-basis threat in the design, development, and implementation of a physical security program that meets 10 CFR 73.55 requirements.	Revision 0 August 2008	Conformance	13.6.2

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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. In addition, an assessment of potential impacts of construction of CPNPP Unit 4 on CPNPP Unit 3 when Unit 3 begins operation was also performed.

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 sites. 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.

As the constructor of the new units and operator of the existing units, Luminant has the overall responsibility for coordination between construction activities of the project and site operational activities. Construction activities and significant operations events are included in a project schedule that is reviewed and approved by operations and construction personnel. Managerial and administrative controls are established to address interface issues, such as communication protocol, safety-security interface and periodic reviews of the project schedule or operational issues.

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. These controls will also provide assurance that CPNPP Unit 3 systems and components are protected from Unit 4 construction hazards and that Unit 3 LCOs are not exceeded as a result of Unit 4 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

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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, in accordance with established safety evaluation procedures in force for CPNPP Units 1 and 2 and Unit 3 when it begins operation.

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. These controls are also applied to assure that continuing construction activities on CPNPP Unit 4 do not adversely affect CPNPP Unit 3 after it begins operation. Therefore, this hazards evaluation is general in that it does not single out application of the protections to the safety-related systems 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 component cooling water system (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 as well as the hazards posed on Unit 3 by the continuing construction of Unit 4 after Unit 3 begins operation. 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/or 4 construction activities. The middle column describes the types of hazardous consequences posed by the CPNPP Units 3 and/or 4 construction activities to the operating CPNPP Units (i.e., Units 1, 2 and 3) 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.

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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 Units 1 & 2, 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. The same management and administrative controls provide assurance that construction activities on Unit 4 will not impact Unit 3 when it begins operation.

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Table 1.10-201 (Sheet 1 of 7)

Hazards Posed on Operating Units During Construction of New Units

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Operating Unit Systems and Components (Note 1)	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 operating unit plant security control perimeter. 5. Adverse effects on operating unit 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 operating units. 4. Administrative controls are in place to coordinate construction activities with CPNPP Units 1, 2 and 3 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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Table 1.10-201 (Sheet 2 of 7)

Hazards Posed on Operating Units During Construction of New Units

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Operating Unit Systems and Components (Note 1)	Preventive and Mitigative Managerial & Administrative Controls
B. Demolition or relocation of existing systems and components	<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 operating unit topography, such as destabilization of earthen slopes, soil erosion, and local flooding. 4. Encroachment on operating unit plant security control perimeter. 5. Disruption of utility service to existing site operating facilities. 	<ol style="list-style-type: none"> 8. Administrative controls are in place to coordinate construction and testing activities with CPNPP Units 1, 2 and 3, so that activities affecting utility services are cleared through the operating unit control rooms and do not compromise services needed by the operating units.
	<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 operating unit topography, such as destabilization of earthen slopes, soil erosion, and local flooding. 4. Encroachment on operating unit plant security control perimeter. 5. 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. 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, 2 and 3 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 on Operating Units During Construction of New Units

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Operating Unit Systems and Components (Note 1)	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 operating unit 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. 	<ol style="list-style-type: none"> 5. Administrative controls are in place to coordinate construction and testing activities with CPNPP Units 1, 2 and 3, so that activities affecting utility services are cleared through the operating unit control rooms and do not compromise services needed by the operating units.
D. Vertical site exploration such as boring, drilling, and pile driving.	<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 operating unit 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. 	<ol style="list-style-type: none"> 1 & 5. Administrative procedures are established and construction methods and controls are implemented to avoid generation of missiles and excessive dust due to blasting. 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 operating units. 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.
		<ol style="list-style-type: none"> 1a. Controls are implemented to maintain groundwater elevation within limits, to protect safety-related structures and foundations. 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.

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Table 1.10-201 (Sheet 4 of 7)

Hazards Posed on Operating Units During Construction of New Units

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Operating Unit Systems and Components (Note 1)	Preventive and Mitigative Managerial & Administrative Controls
E. Water-related changes to the site such as dredging and dewatering.	<ol style="list-style-type: none"> 1. Adverse effect on surface water quality such as through increased turbidity, chemical contamination, etc. 2. Adverse effects on operating unit topography, such as destabilization of earthen slopes, soil erosion, and local flooding. 	<ol style="list-style-type: none"> 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. 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.
F. Vertical lifting, movement, and placement of material and equipment by crane.	<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. 	<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 & 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.

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Table 1.10-201 (Sheet 5 of 7)

Hazards Posed on Operating Units During Construction of New Units

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Operating Unit Systems and Components (Note 1)	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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Table 1.10-201 (Sheet 6 of 7)

Hazards Posed on Operating Units During Construction of New Units

Unit 3 & 4 Construction Activities	Potentially Hazardous Consequences Posed to Operating Unit Systems and Components (Note 1)	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 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 operating unit outdoor features due to windblown debris or missiles (i.e., as a result of materials not being properly stored and secured). 2. Encroachment on operating unit 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, 2 and 3 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 7 of 7)

Unit 3 & 4 Construction Activities	Hazards Posed on Operating Units During Construction of New Units Potentially Hazardous Consequences Posed to Operating Unit Systems and Components (Note 1)	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 operating 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 site operating facilities.</p>	<p>1. Administrative controls are in place to coordinate construction and testing activities with CPNPP Units 1, 2 and 3, 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 site operating facilities.</p>	<p>1. Administrative controls are in place to coordinate construction and testing activities with CPNPP Units 1, 2 and 3, 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>

Note 1: The same hazards are posed on Unit 3 when Unit 4 is still under construction after Unit 3 begins operation. The same management and administrative controls will be in place to protect Unit 3 at that time.