HYDSV-20

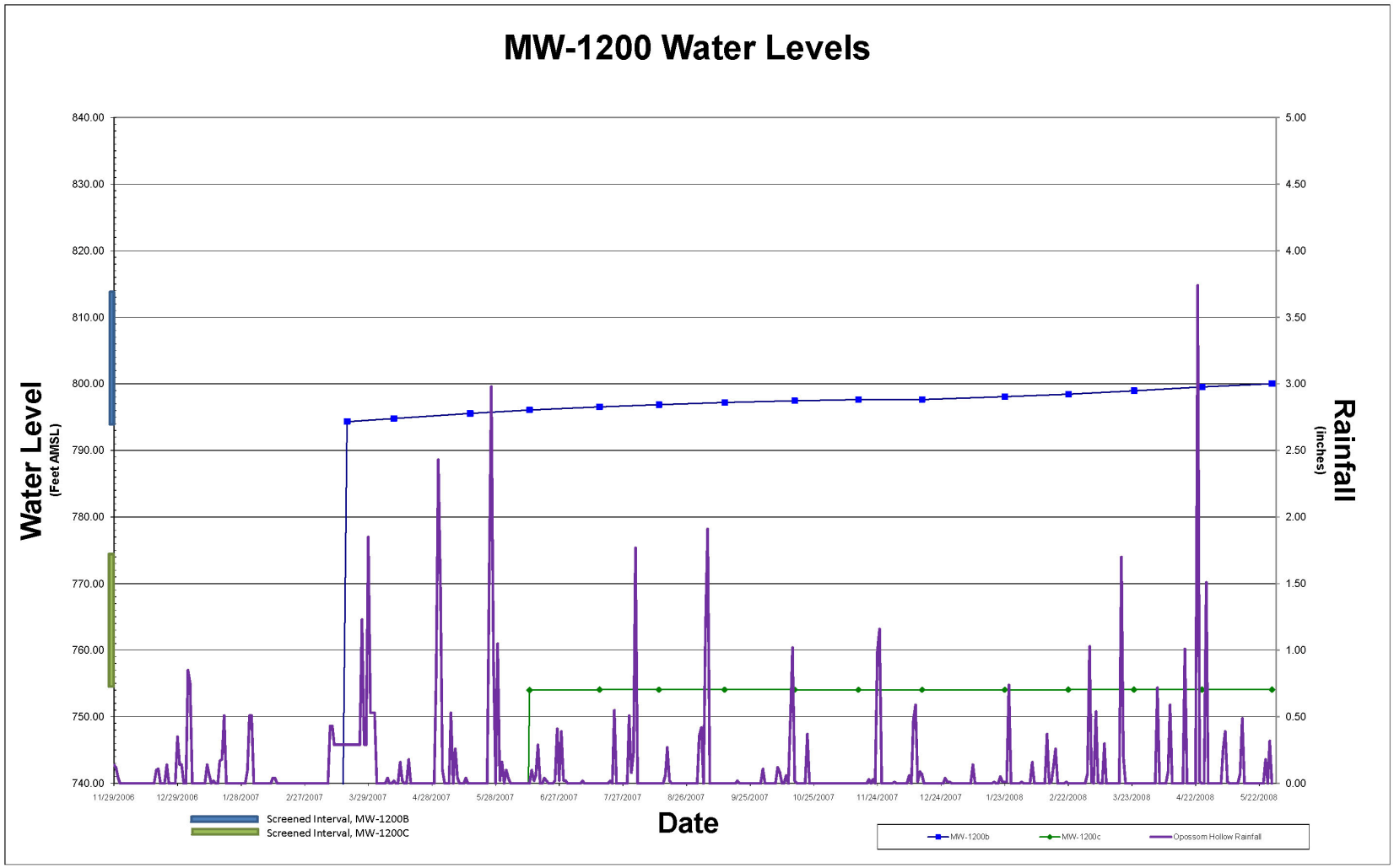

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1200 (Sheet 1 of 20)

HYDSV-20

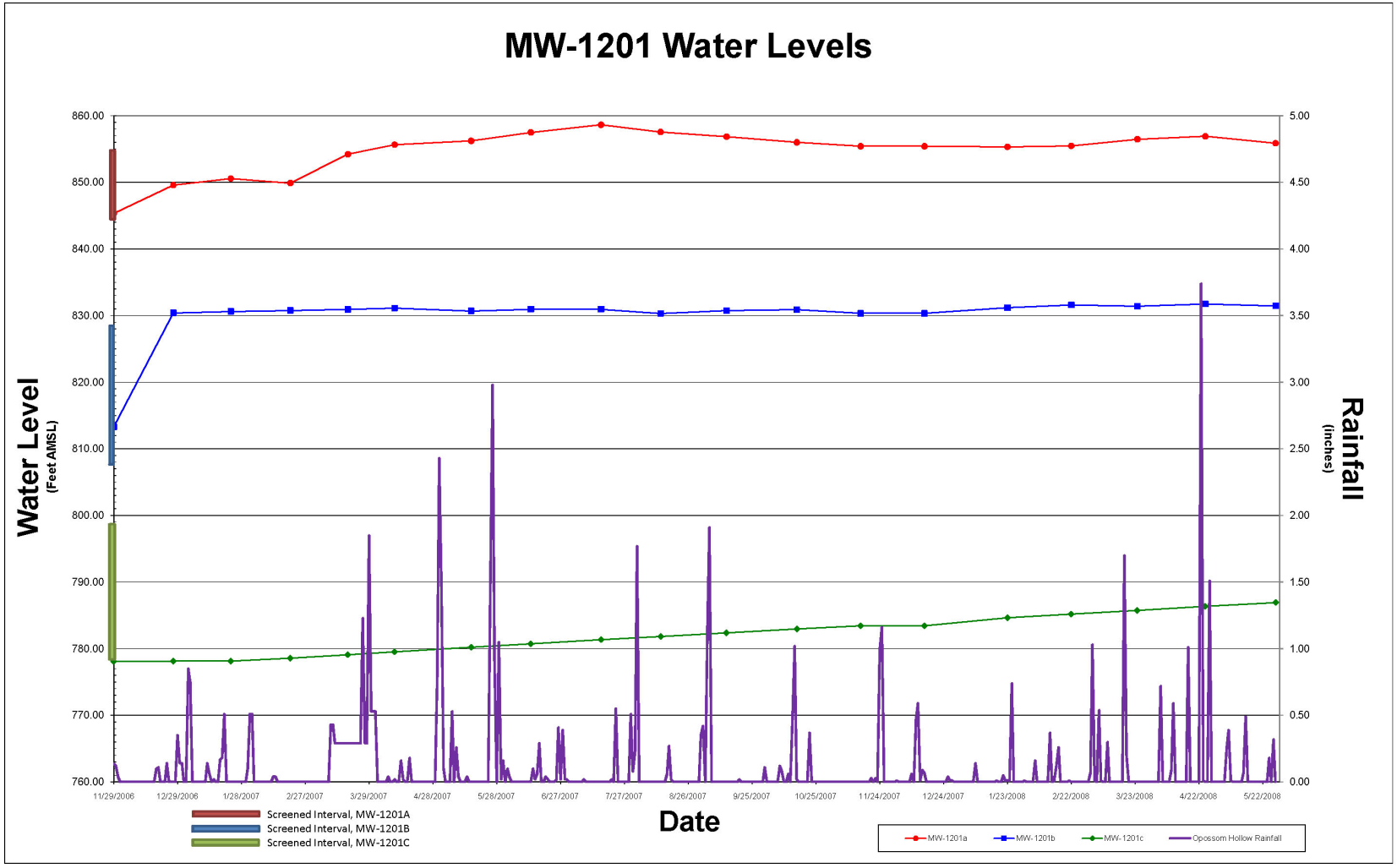

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1201 (Sheet 2 of 20)

HYDSV-20

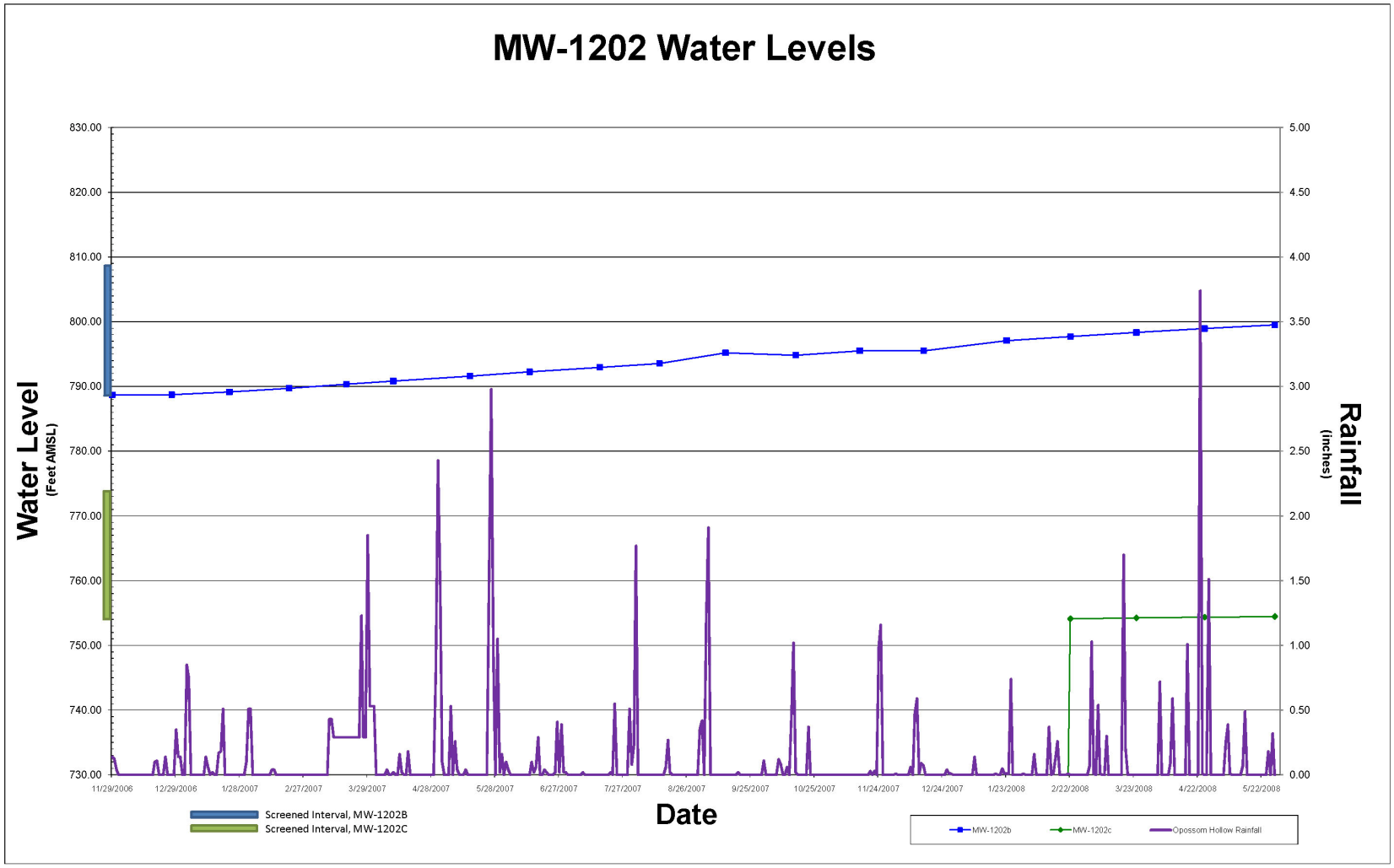

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1202 (Sheet 3 of 20)

HYDSV-20

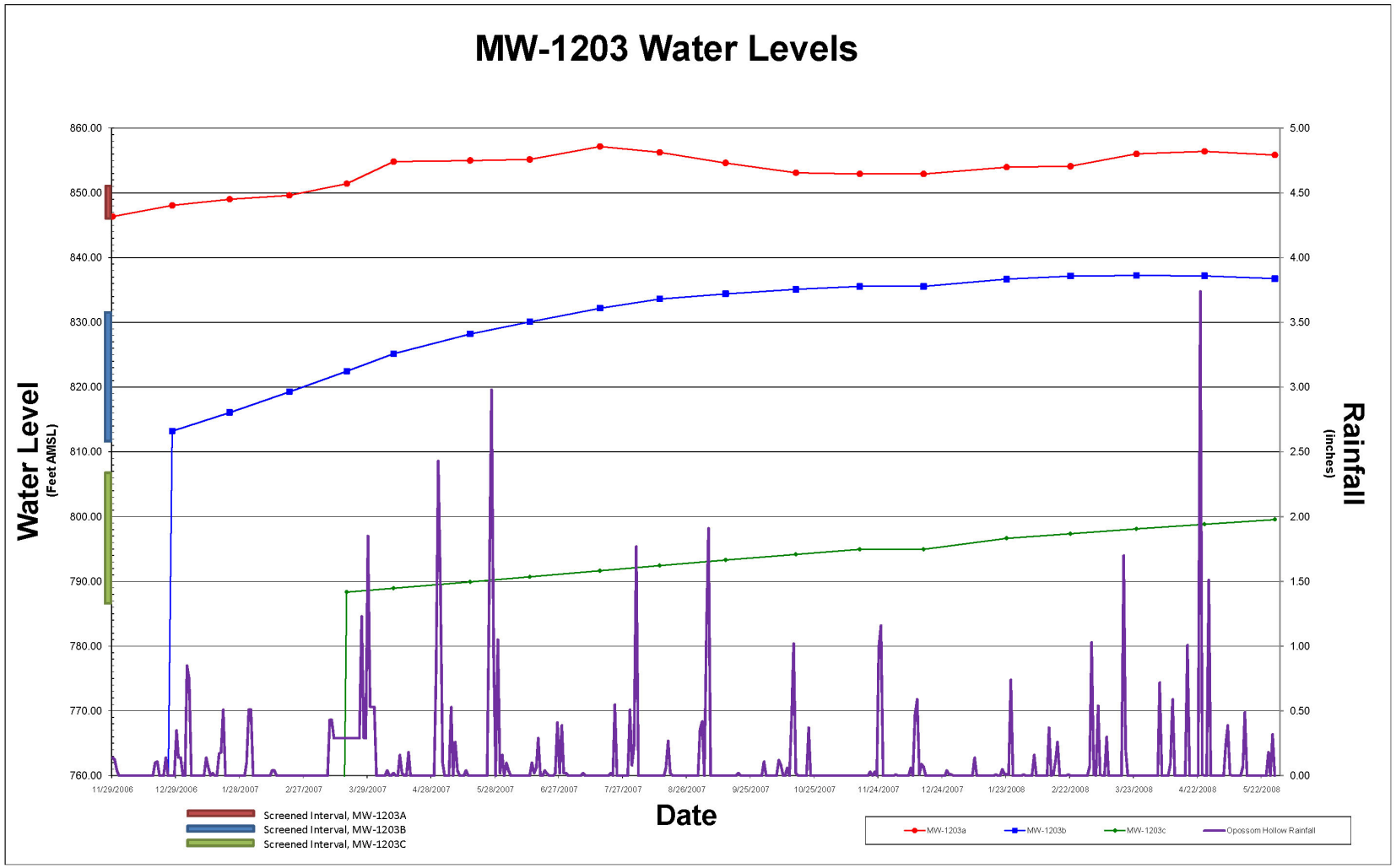

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1203 (Sheet 4 of 20)

HYDSV-20

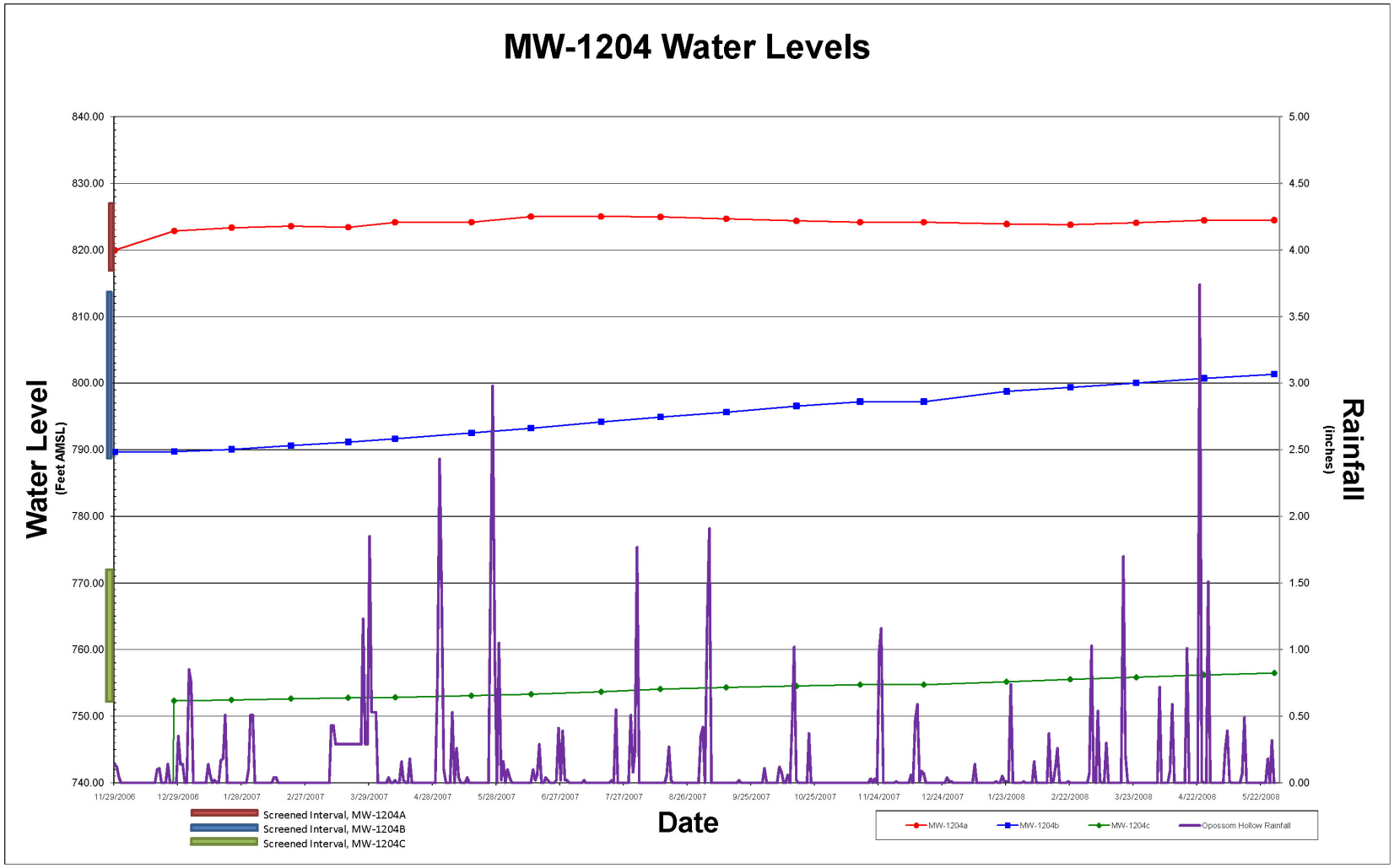

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1204 (Sheet 5 of 20)

HYDSV-20

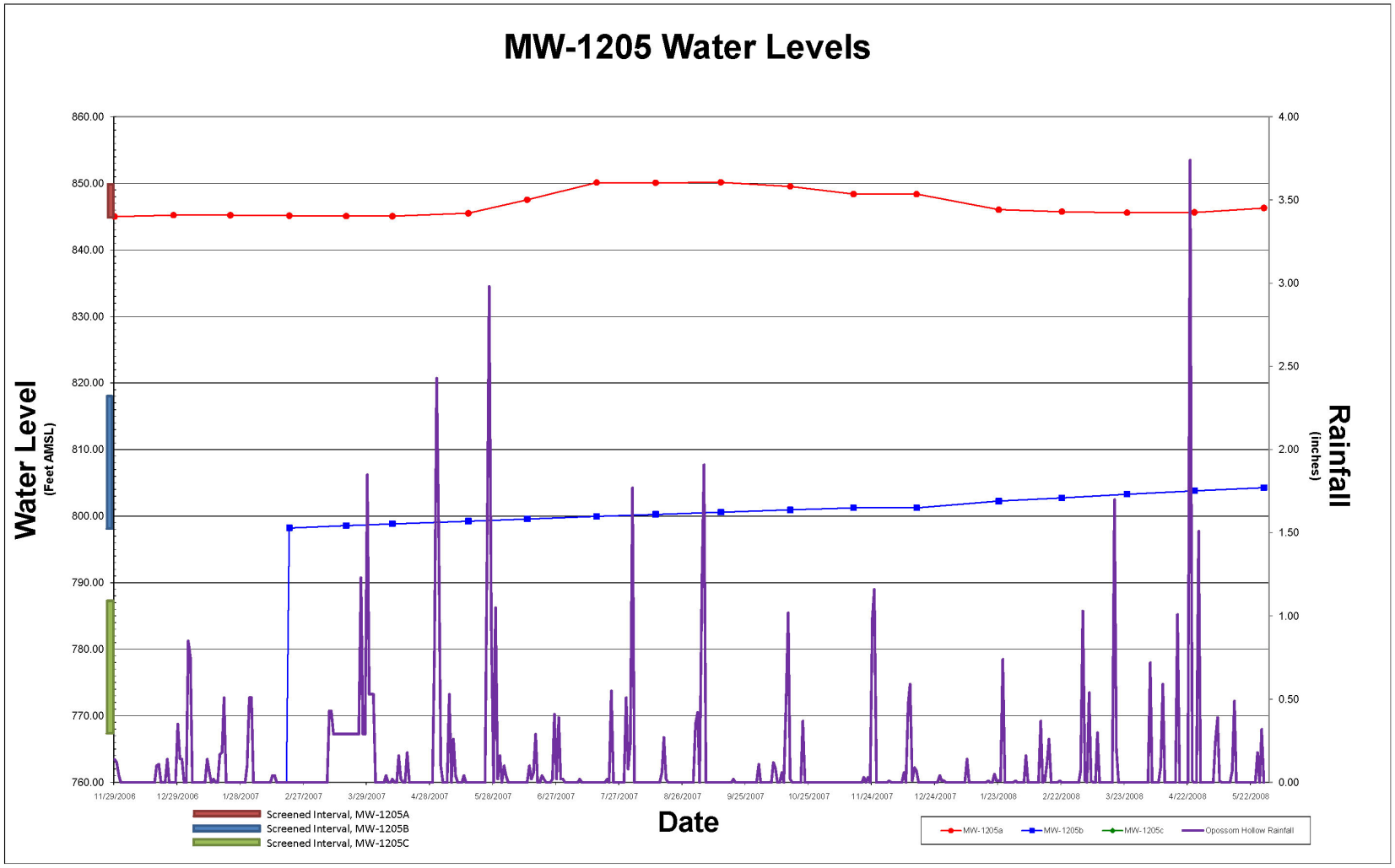

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1205 (Sheet 6 of 20)

HYDSV-20

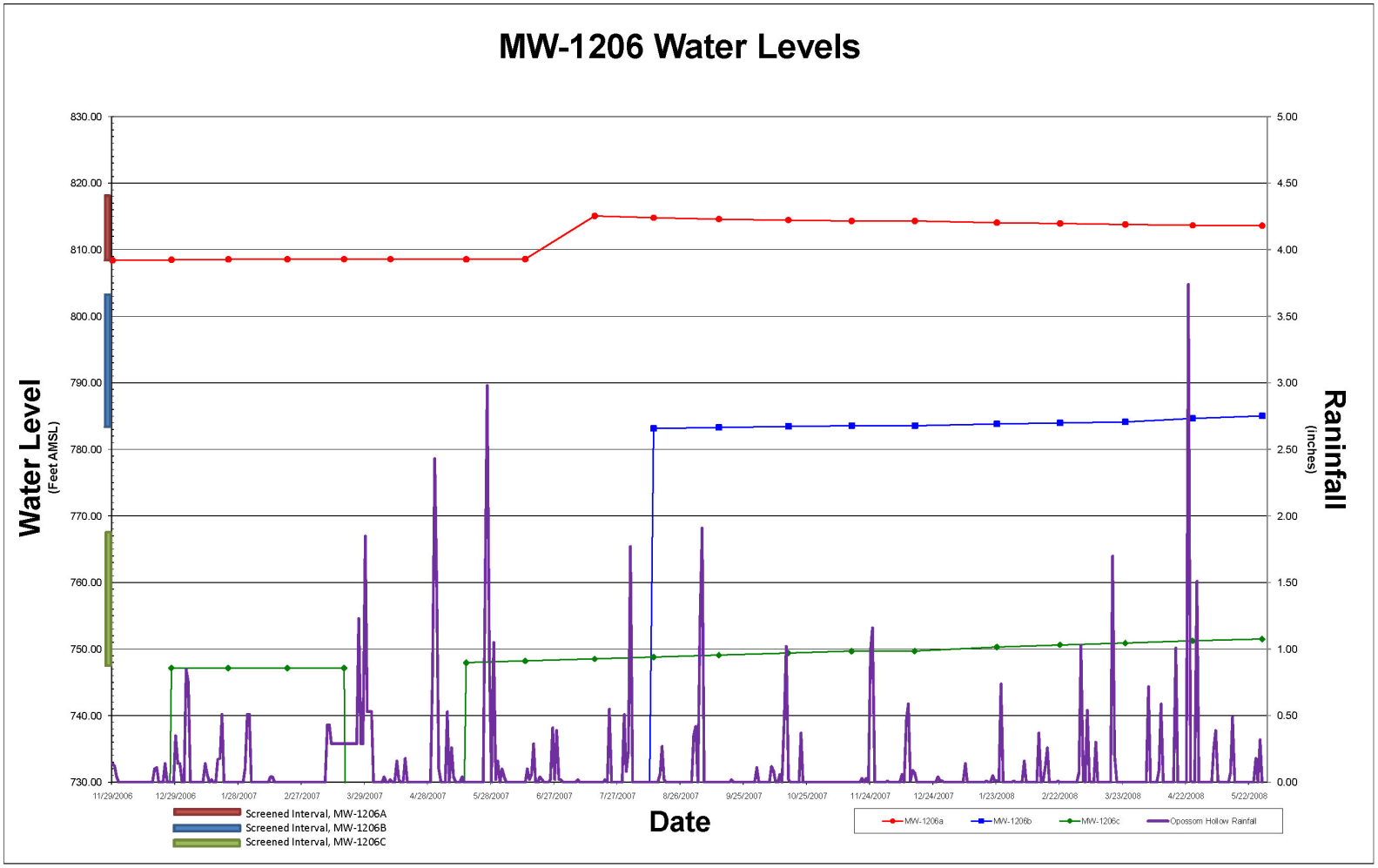

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1206 (Sheet 7 of 20)

HYDSV-20

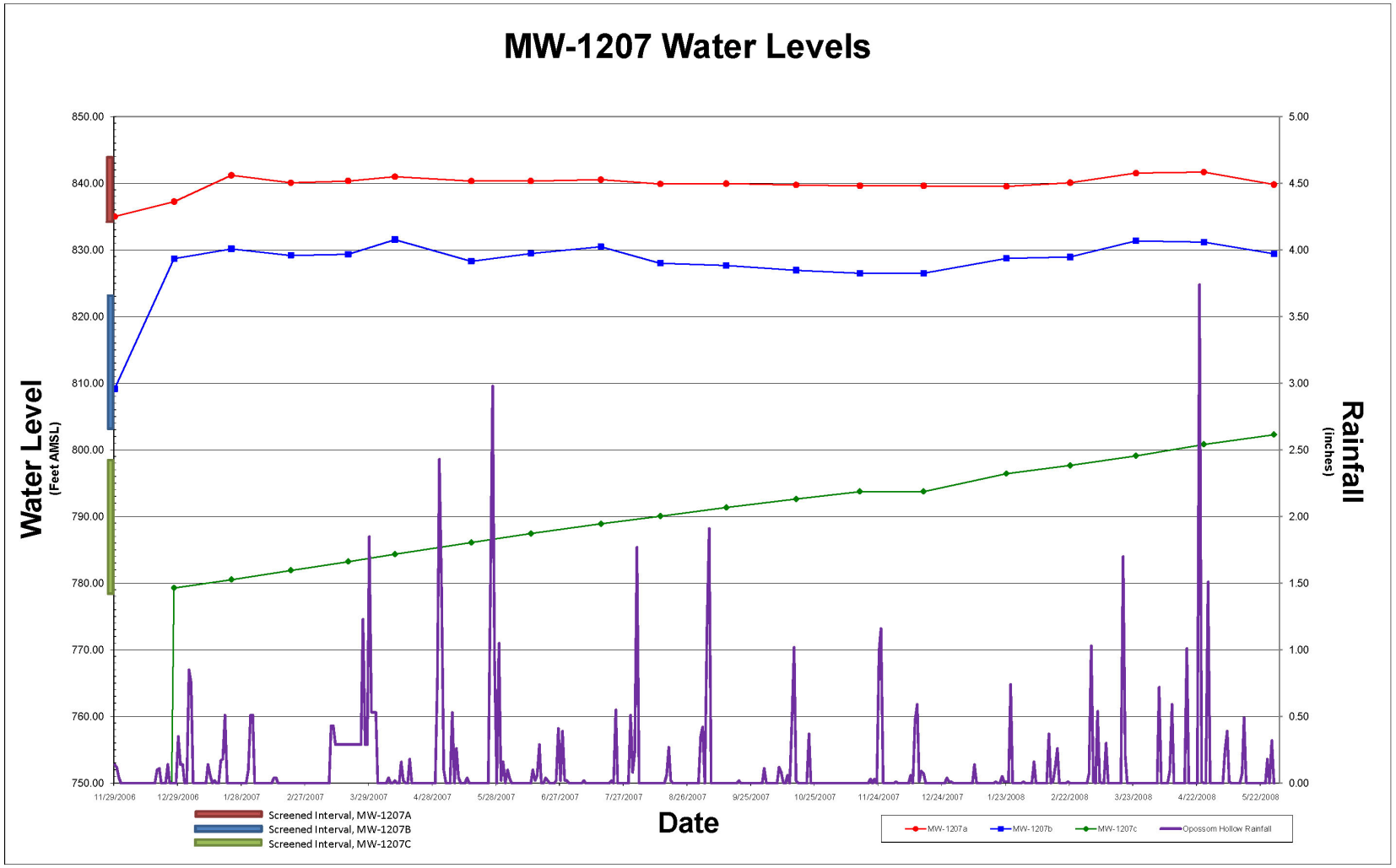

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1207 (Sheet 8 of 20)

HYDSV-20

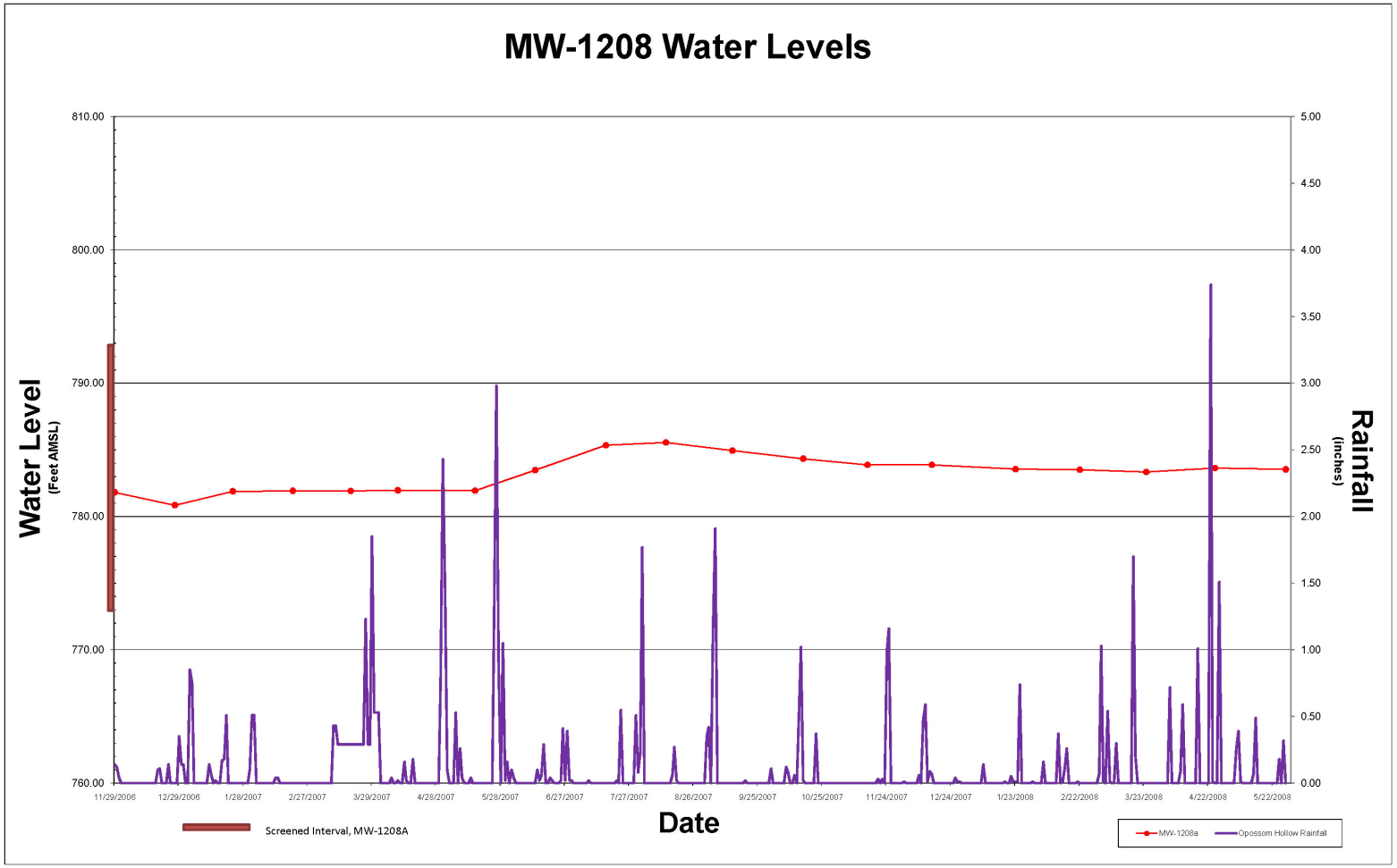

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1208 (Sheet 9 of 20)

HYDSV-20

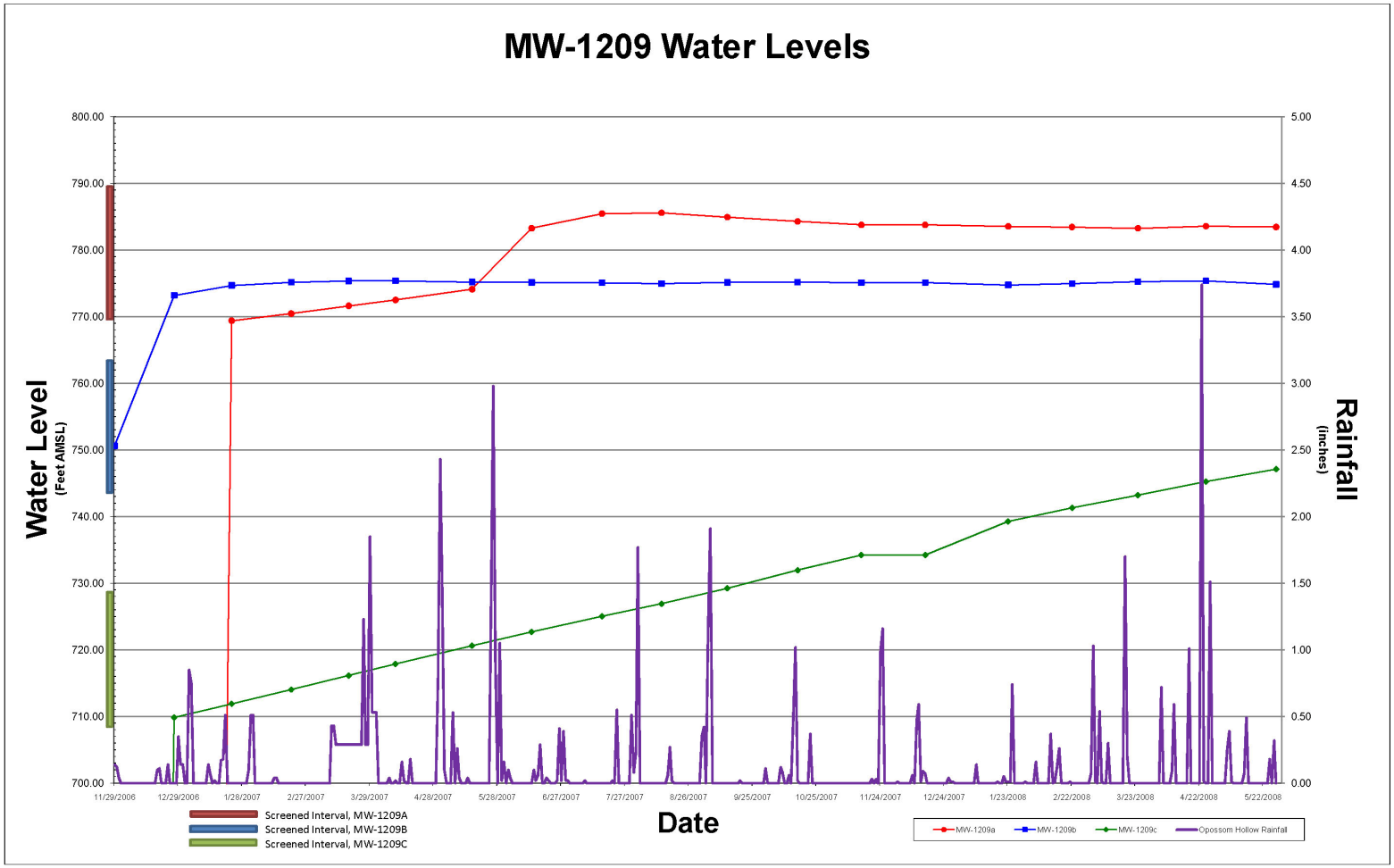

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1209 (Sheet 10 of 20)

HYDSV-20

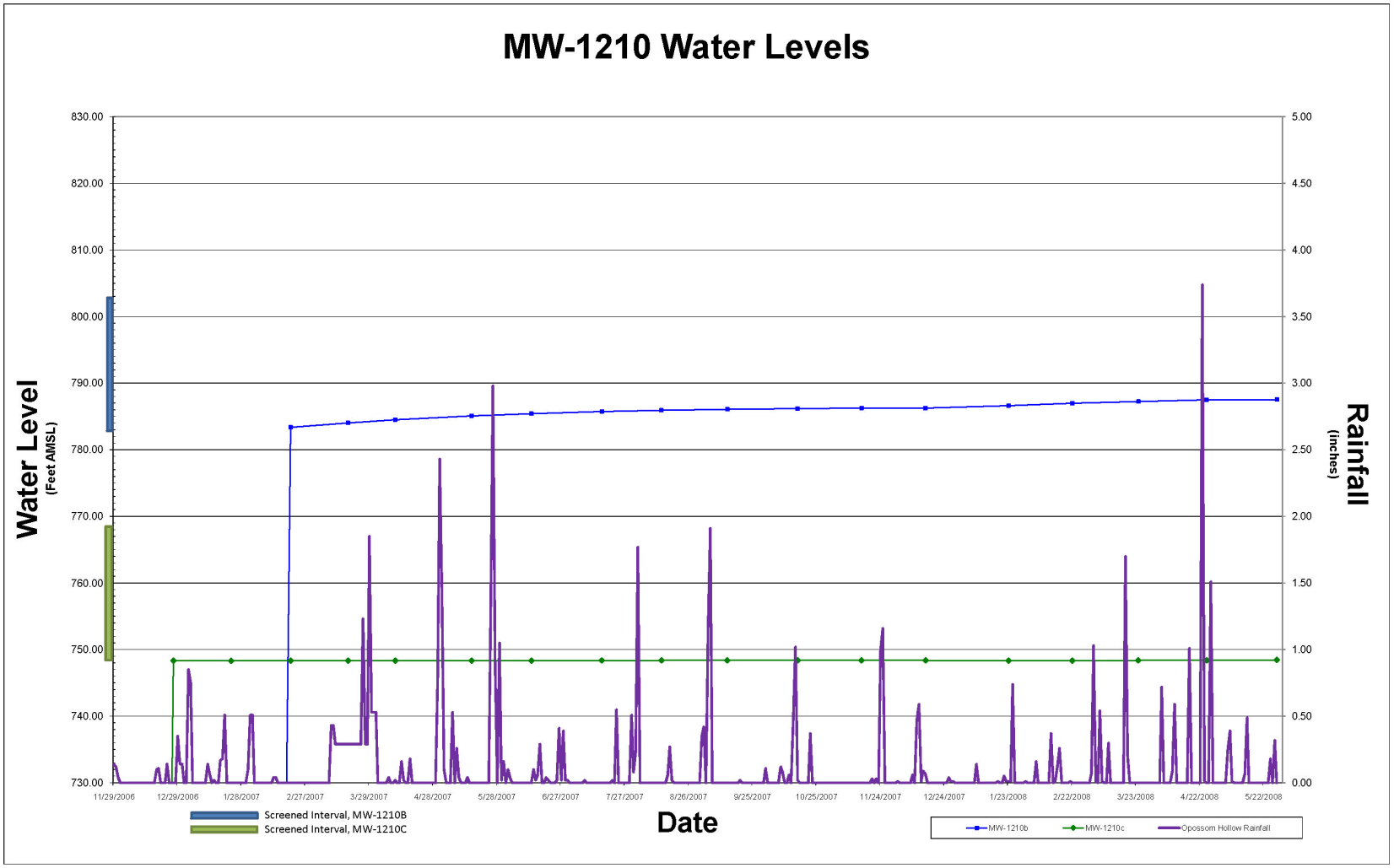

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1210 (Sheet 11 of 20)

HYDSV-20

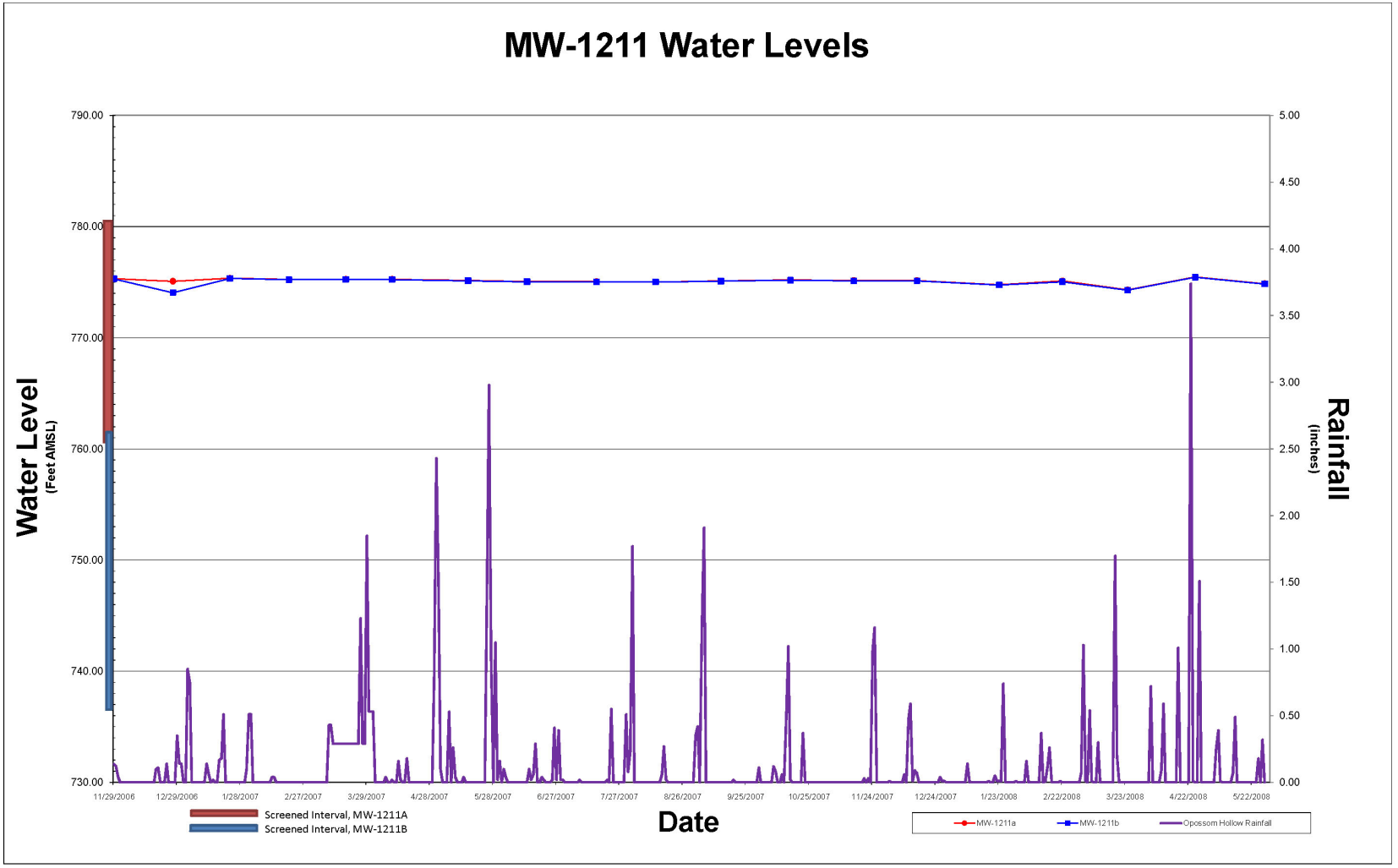

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1211 (Sheet 12 of 20)

HYDSV-20

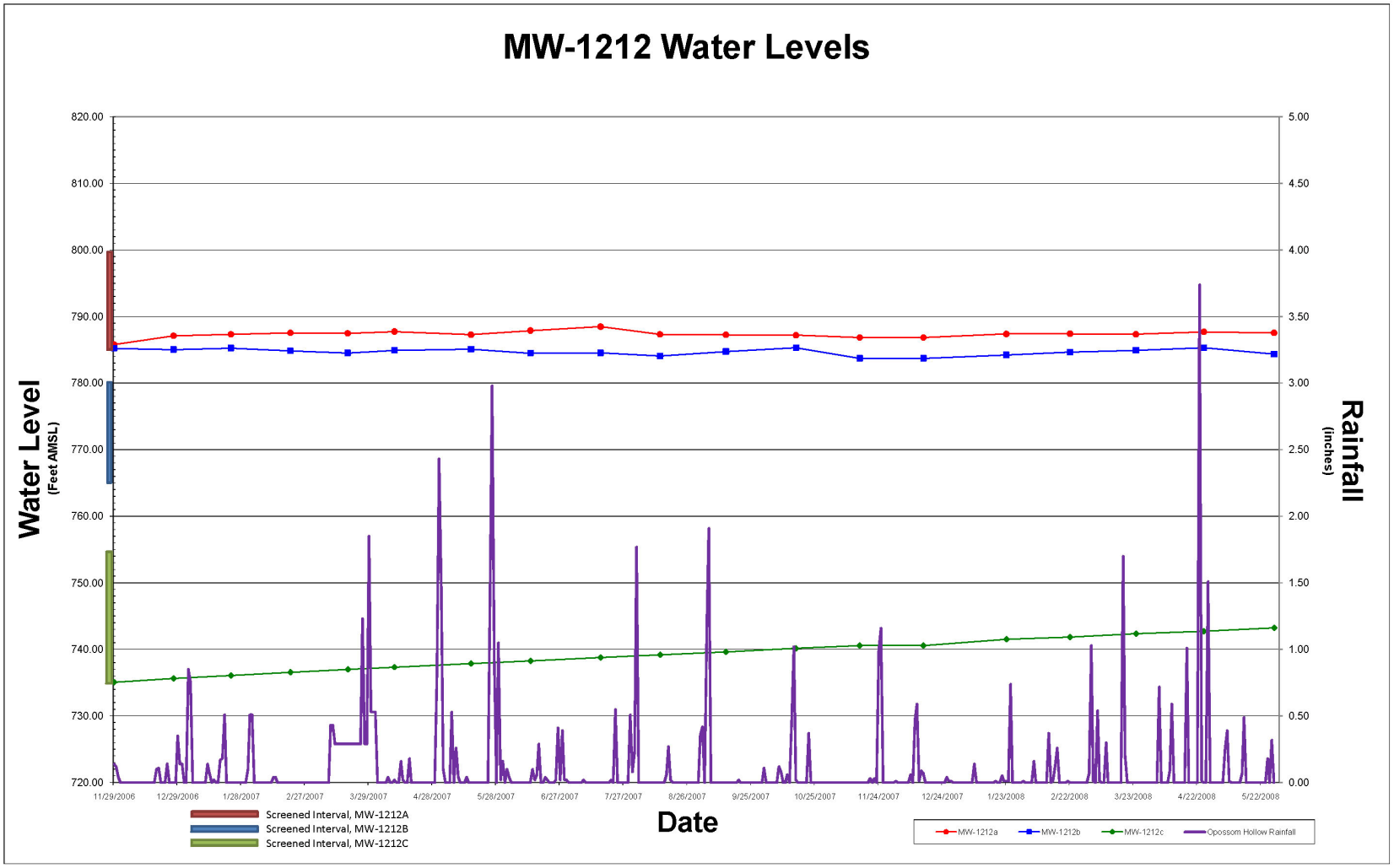

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1212 (Sheet 13 of 20)

HYDSV-20

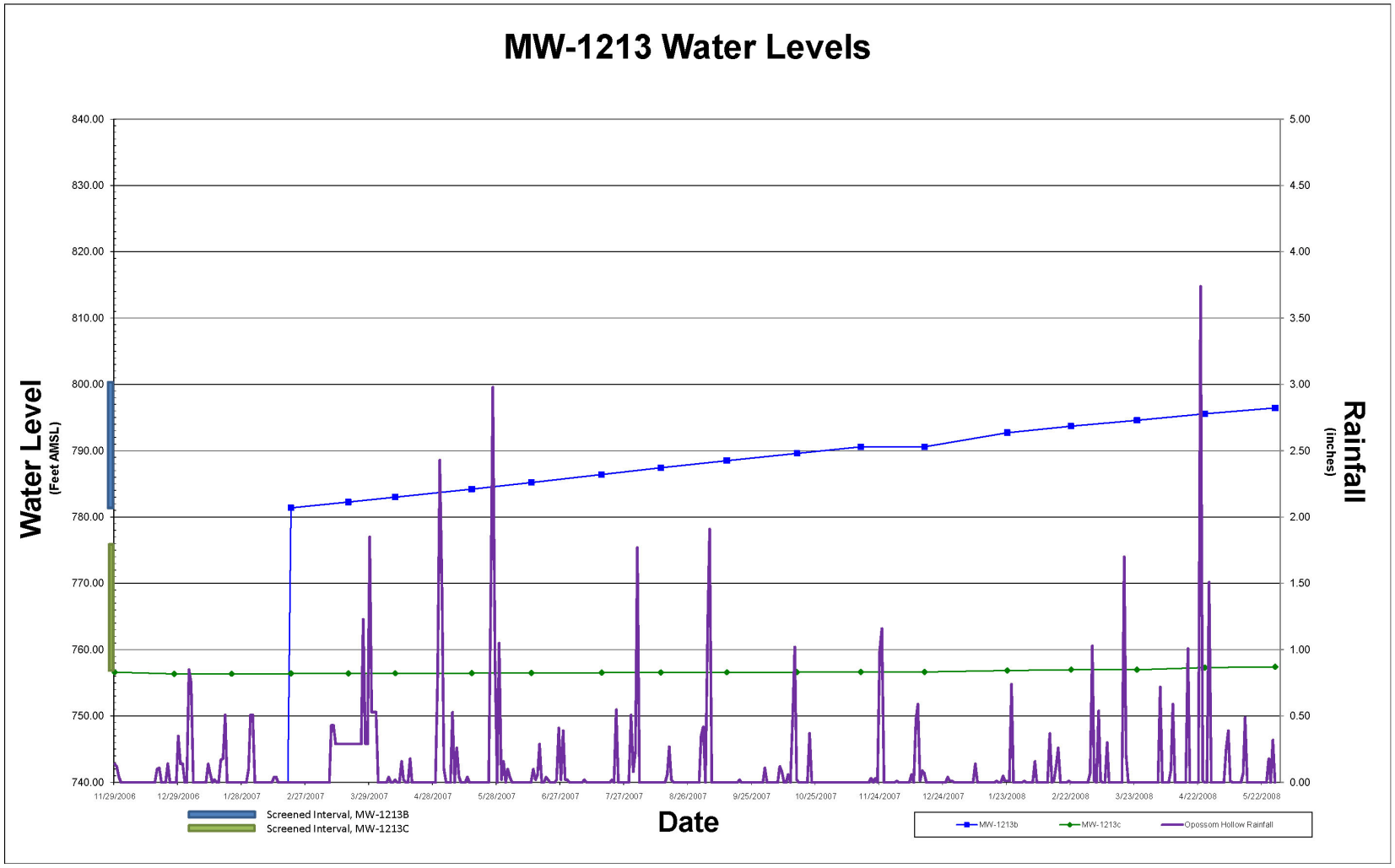

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1213 (Sheet 14 of 20)

HYDSV-20

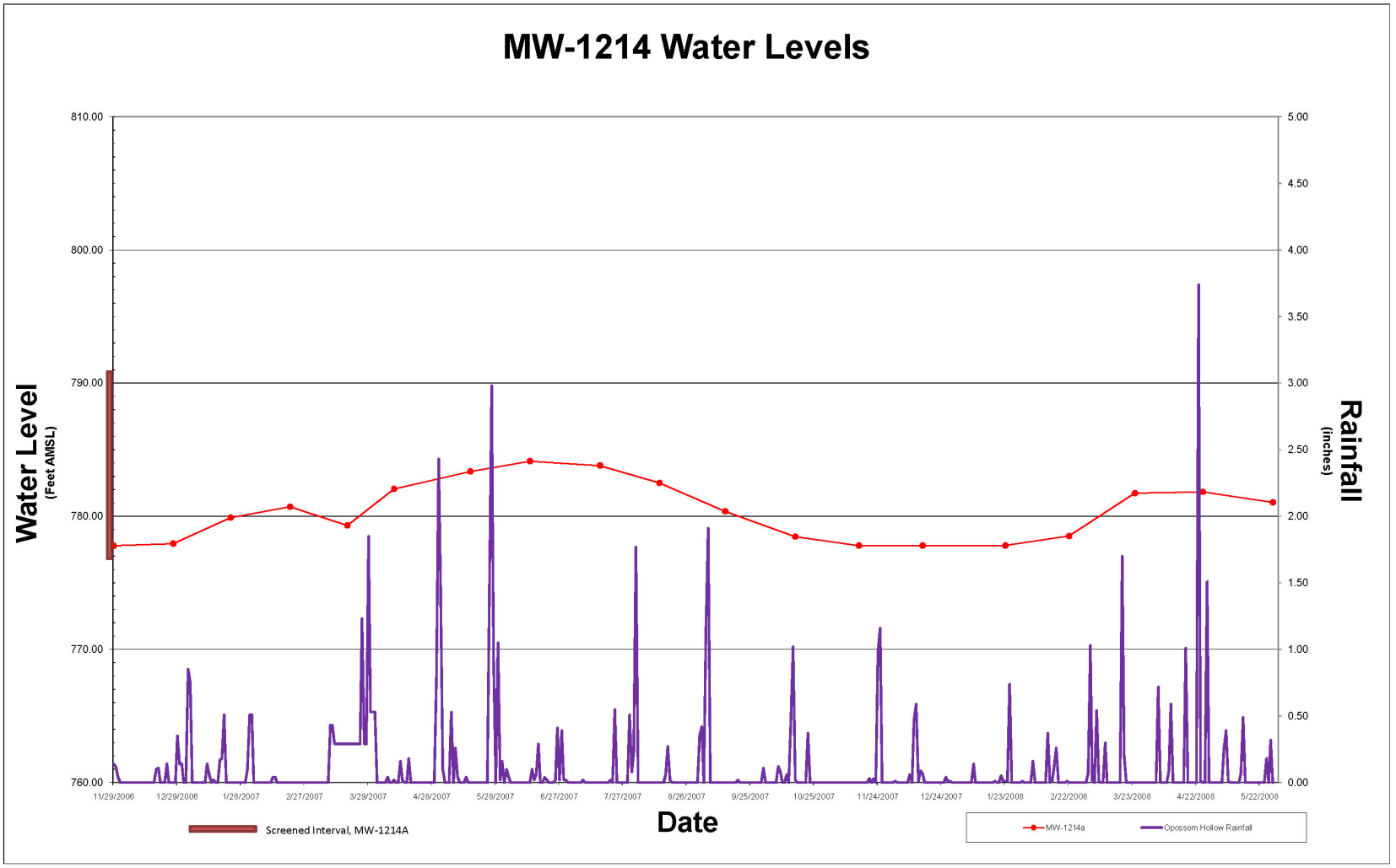

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1214 (Sheet 15 of 20)

HYDSV-20

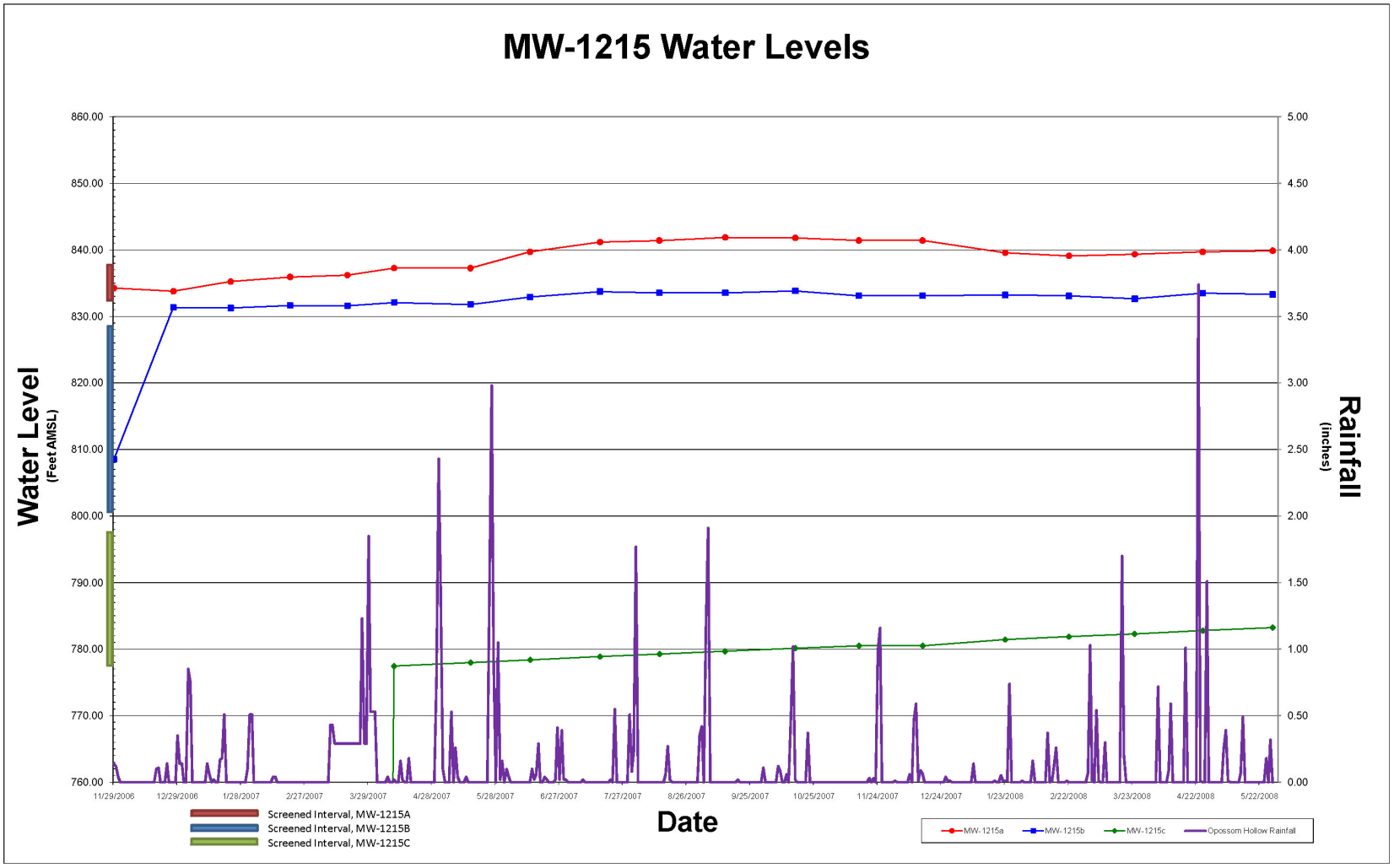

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1215 (Sheet 16 of 20)

HYDSV-20

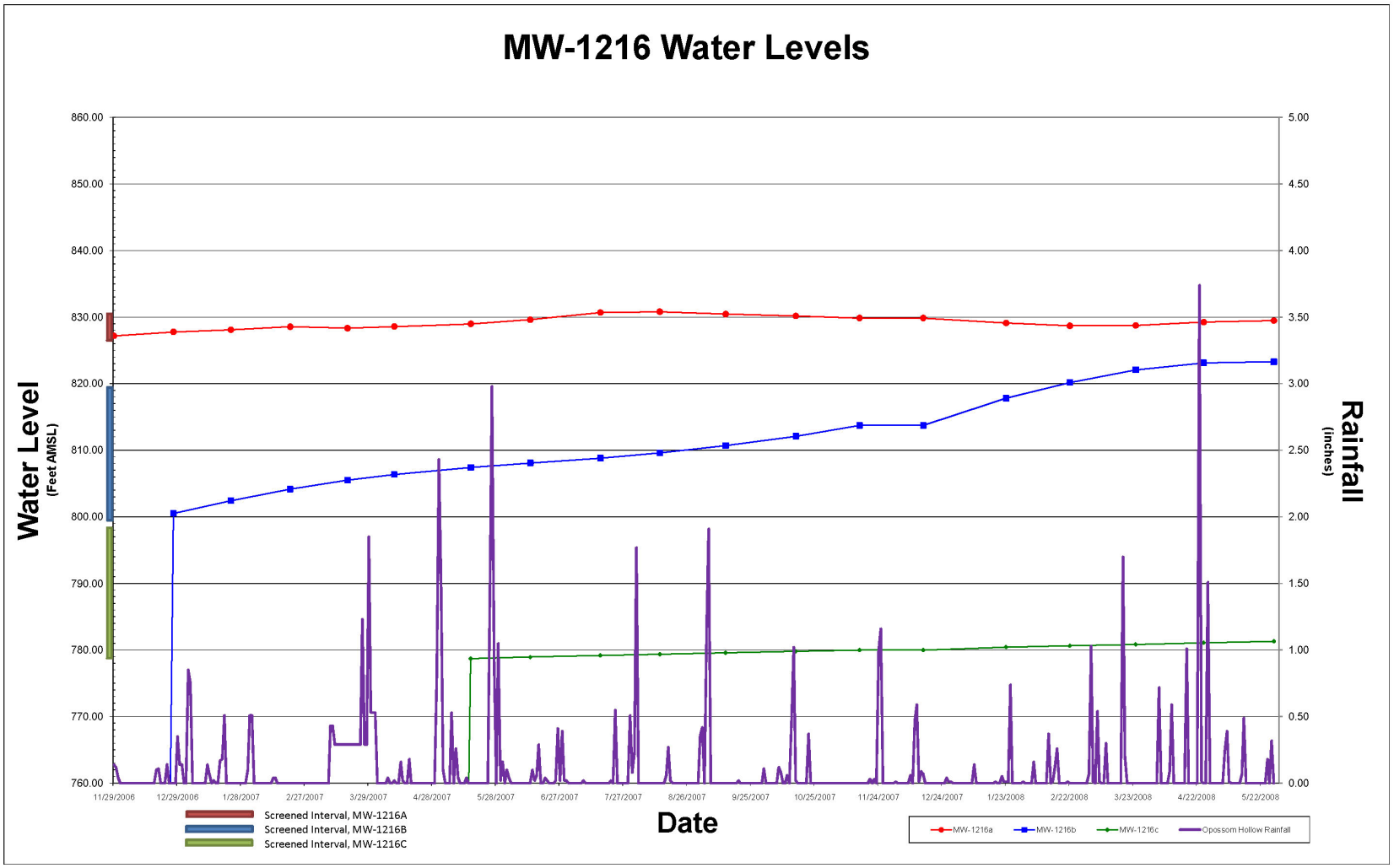

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1216 (Sheet 17 of 20)

HYDSV-20

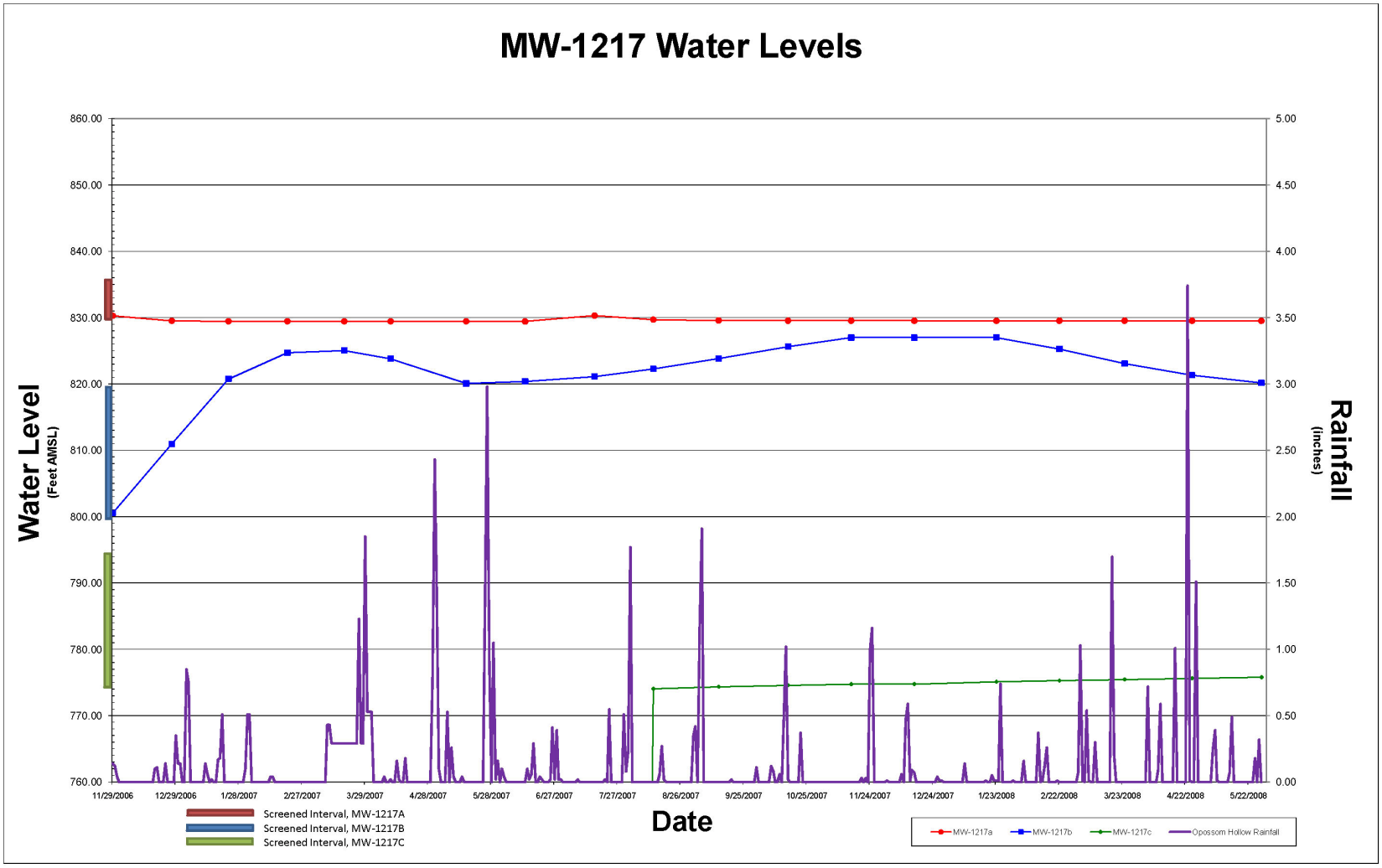

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1217 (Sheet 18 of 20)

HYDSV-20

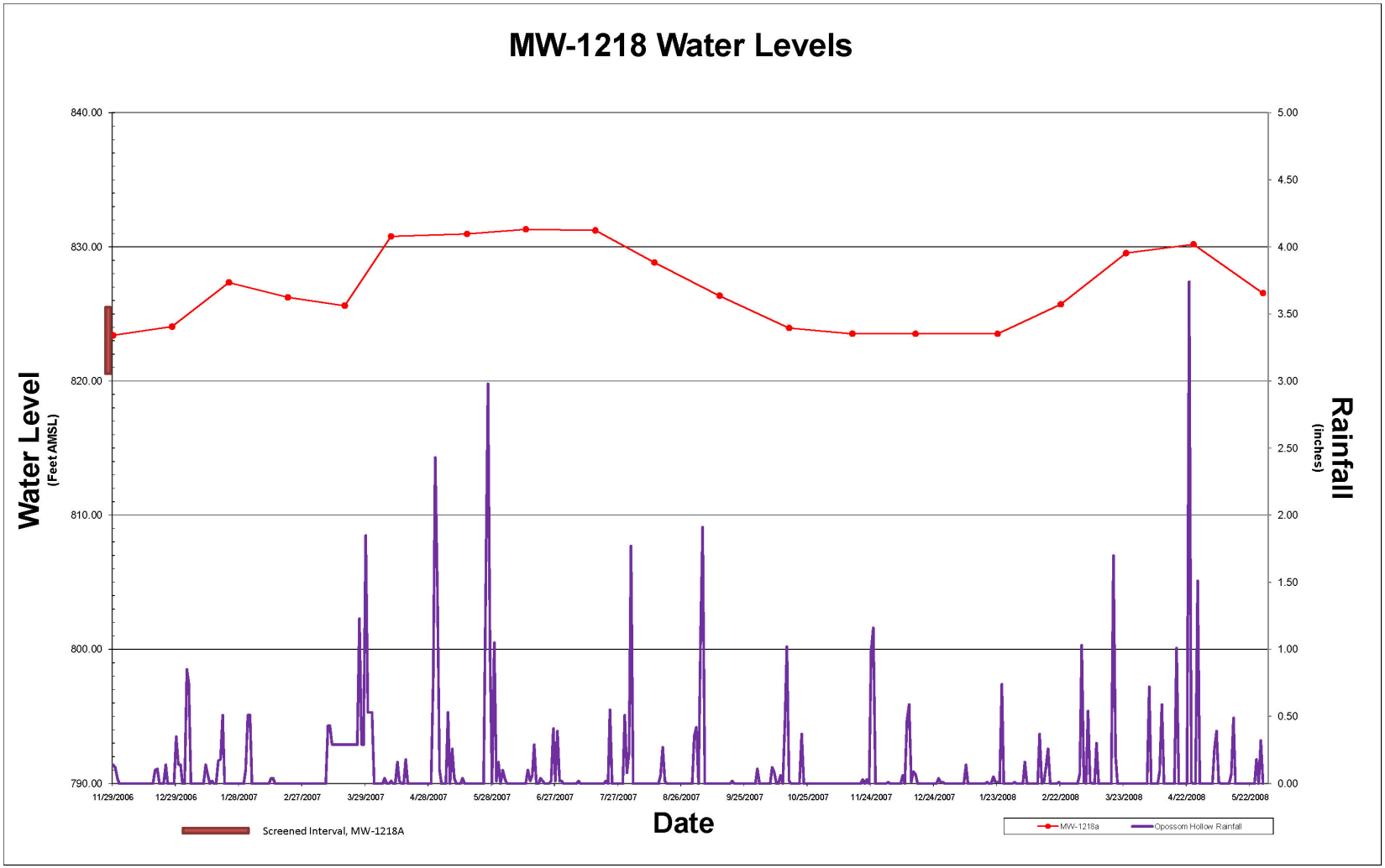

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1218 (Sheet 19 of 20)

HYDSV-20

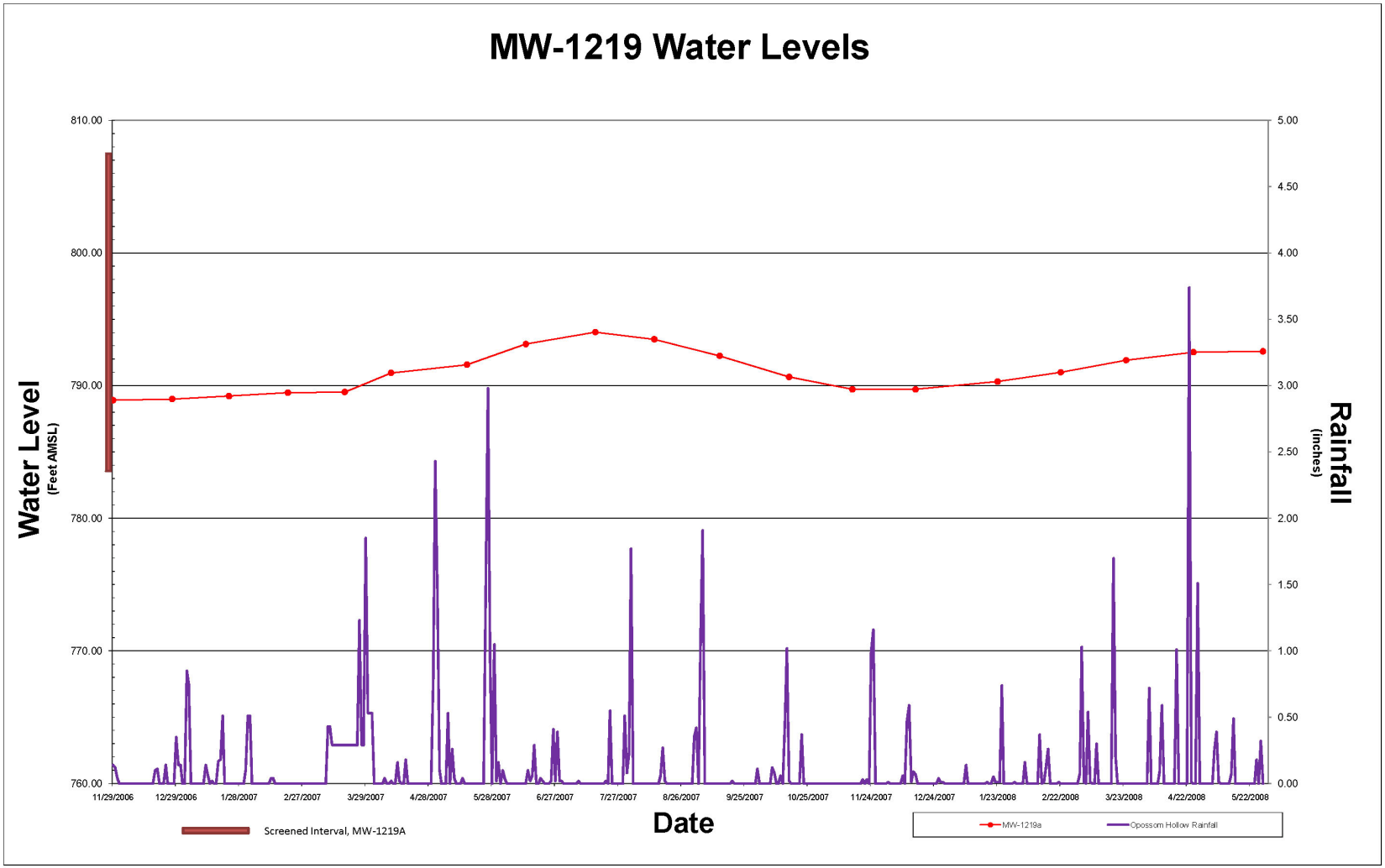

Figure 2.4.12-209 Hydrographs from Well Cluster MW-1219 (Sheet 20 of 20)

HYDSV-23

Figure 2.4.12-212 Groundwater Flow Path

HYDSV-23

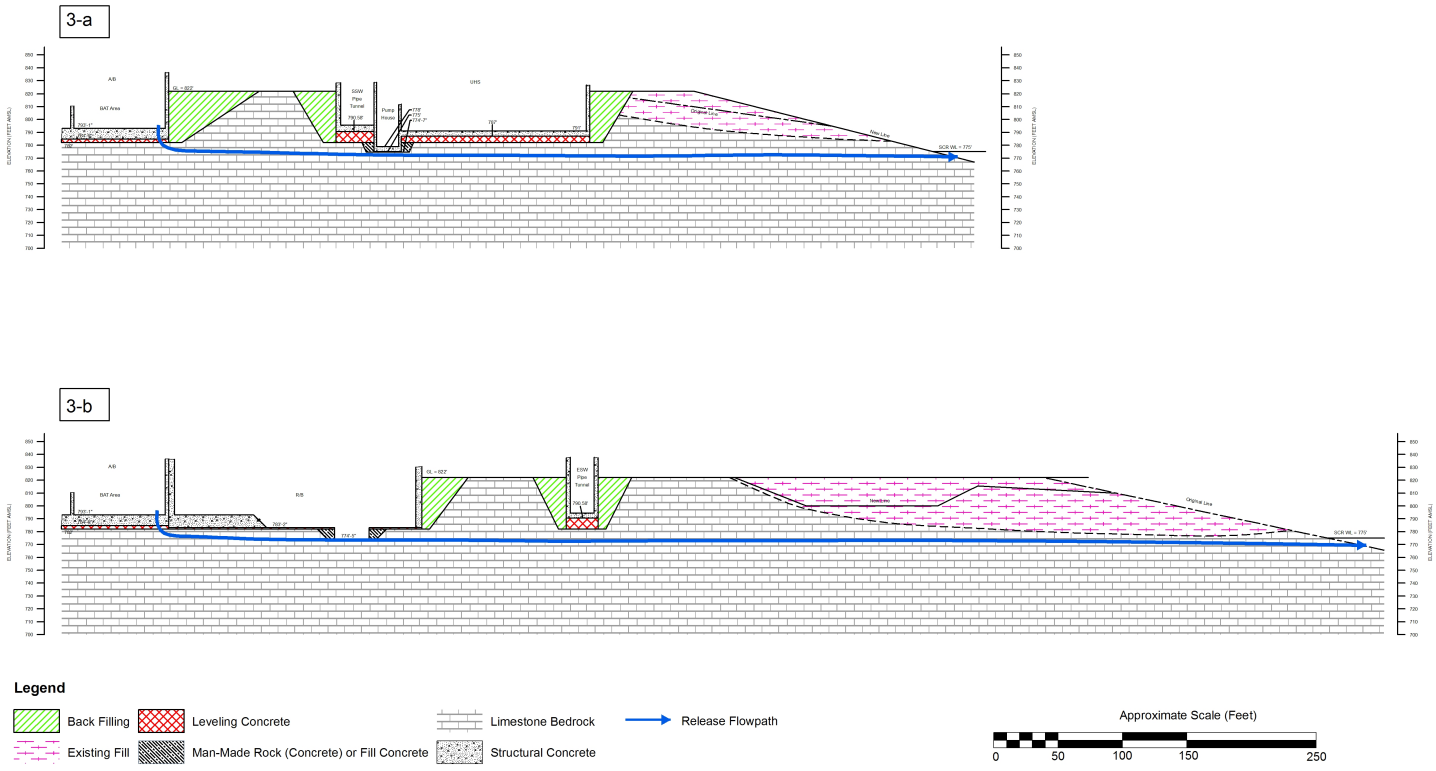

Figure 2.4.12-213 Post Construction Release Flowpath

HYDSV-23

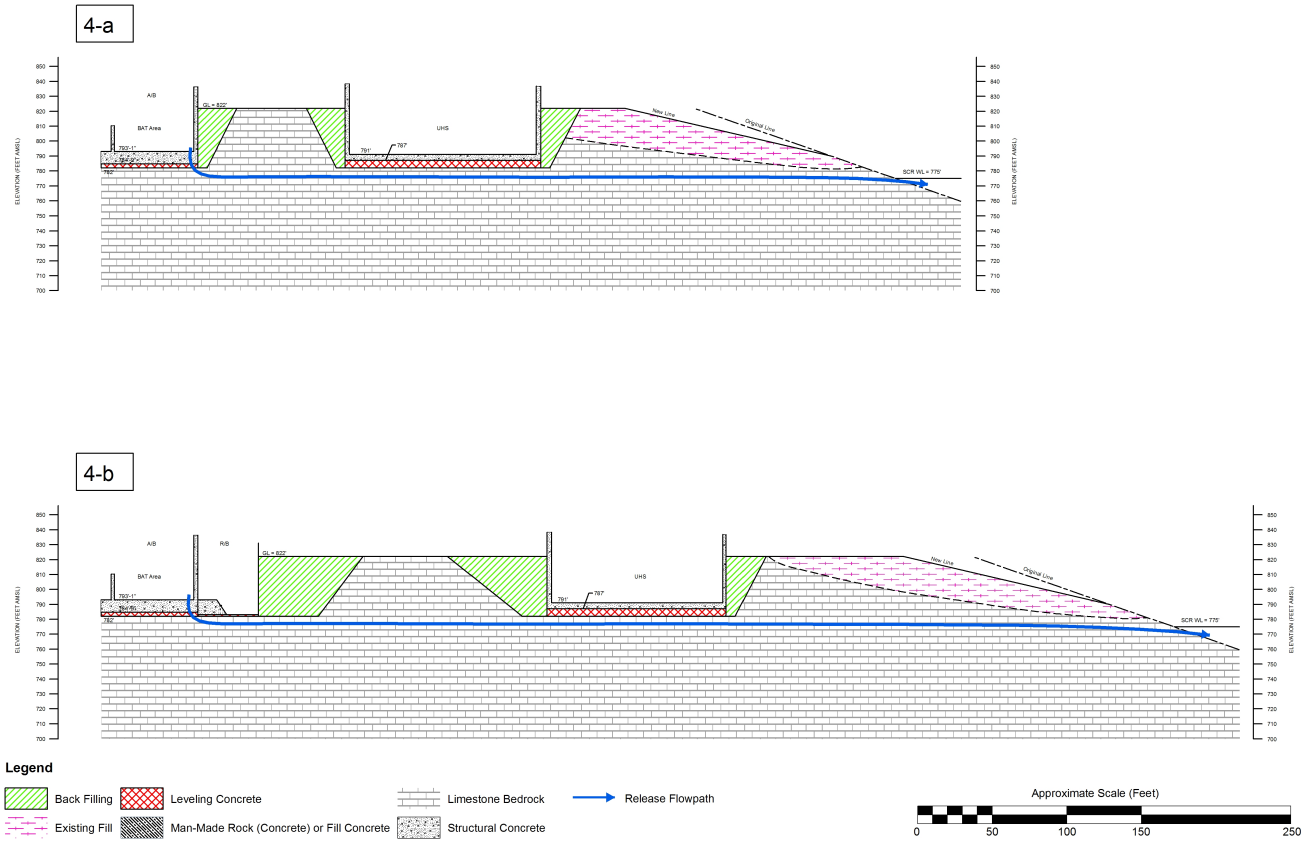

Figure 2.4.12-214 Post Construction Release Flowpath

Chapter 3

Chapter 3 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00638	3.3.1.2	3.3-1	Clarification	Add “CPNPP Units 3 and 4 do not have site-specific seismic category II buildings and structures”.	0
CTS-00600	3.7.1	3.7-3	Editorial correction	Change “is” to “has been”.	0
MAP-03-001	3.7.4.2 3.7.5	3.7-12 3.7-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.7(15)	0
MAP-03-002	3.7.4.5 3.7.5	3.7-12 3.7-13 3.7-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.7(18)	0
CTS-00532	Table 3.7.2-1R	3.7-17 3.7-18	Editorial correction	Revise LMN to highlight changes.	0
MAP-03-003	3.8.1.4.1.3 3.8.6	3.8-1 3.8-13 3.8-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.8(1)	0
MAP-03-004	3.8.1.5.1.2 3.8.1.5.2.2 3.8.6	3.8-1 3.8-1 3.8-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.8(2)	0
CTS-00602	3.8.1	3.8-2	Clarification	Change “Chapter 2” to “Subsection 2.5.4”.	0
MAP-03-005	3.8.1.6 3.8.6	3.8-2 3.8-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.8(4)	0
MAP-03-006	3.8.1.6 3.8.6	3.8-2 3.8-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.8(5)	0

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
MAP-03-007	3.8.1.6 3.8.6	3.8-2 3.8-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.8(6)	0
MAP-03-008	3.8.1.6 3.8.6	3.8-3 3.8-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.8(8)	0
MAP-03-009	3.8.1.6 3.8.6	3.8-3 3.8-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.8(9)	0
MAP-03-010	3.8.1.6 3.8.6	3.8-3 3.8-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.8(12)	0
MAP-03-011	3.8.1.6 3.8.6	3.8-3 3.8-14	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.8(13)	0
CTS-00607	3.8.4.1.3.2	3.8-6 3.8-7	Editorial correction	Change “the ESW pump houses” to “UHS ESW pump house”.	0
MAP-03-012	3.8.4.7	3.8-11	Revision of COL 3.8(22) Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Change “Monitoring of seismic category I structures is required to be performed” to “a site-specific program for monitoring and maintenance of seismic category I structures is performed”.	0
CTS-00603	Table 3.9-202	3.8-18	Consistent with DCD Rev.1	Change unit and number in the table.	0
CTS-00604	3.9.3.4.2.5	3.9-2	Editorial correction	Clarify wording.	0
CTS-00531	3.9.3.4.2.5	3.9-2	Editorial correction	Change “are” to “is”.	0

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00605	Table 3.9-201	3.9-5	Editorial correction	Change COL item number.	0
MAP-03-014	3.10 3.10.7	3.10-1 3.10-3	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.10(10)	0
CTS-00606	3.11	3.11-1	Clarification	Replace EQ program implementation dates with milestones.	0
CTS-00639	3.11.5	3.11.3	Editorial correction	Change “Table 3D-201 by completion of [Later]” to “the Equipment EQ Technical Report (Reference 3.11.3)”.	0
MAP-03-015	3.13.1.2.3 3.13.3	3.13-1 3.13-2	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.13(1)	0
MAP-03-016	3.13.1.2.5 3.13.3	3.13-1 3.13-2	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 3.13(2)	0
DCD_3.5.1.1-04	3.5	3.5-1 3.5-4	Reflect Response to DCD RAI No. 127	Change section number and title	3
RCOL2_03.05.01.03-1	3.5.1.3.2	3.5-2	Response to RAI No. 12 Luminant Letter no.TXNB-09033 Date 08/24/2009	Inserted a description of turbine valve test frequency.	-
RCOL2_10.04.08-1	Table 3.2-201	3.2-5	Response to RAI No. 17 Luminant Letter no.TXNB-09034 Date 08/24/2009	For Item #4 under the “System and Components” column for the Startup steam generator (SG) blowdown system, correct the information for the Equipment Class, location, Quality Group, Codes and Standards, and Seismic	-

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
				Category. In addition, modify Note 1.	
DCD_03.02.01-6	3.2.1	3.2-5	Reflect Response to DCD RAI No. 287	Change the description of note and add note.	4
CTS-00804	3.2.1	3.2-5	Editorial correction	Left-justify first column	4

Table 3.2-201 (Sheet 3 of 3)

CP COL 3.2(4)
CP COL 3.2(5)

Classification of Site-Specific Mechanical and Fluid Systems, Components, and Equipment

System and Components	Equipment Class	Location	Quality Group	10 CFR 60 Appendix B (Reference 3.2-8)	Code and Standards[3]	Seismic Category	Notes
4. Startup steam generator (SG) blowdown system							
System components, piping and valves	~~4~~6	turbine building (T/B), auxiliary building (A/B), ~~outside building (O/B)~~outdoors	~~D~~N/A	not applicable (N/A)	~~4~~6	~~non seismic (NS)~~Note 1	

CTS-00804
RCOL2_10.04.08-1
RCOL2_10.04.08-1

Notes:

1. ~~Not used~~Seismic category meeting RG 1.143 (Reference 3.2-10) is applied. (RCOL2_10.04.08-1)
2. Not used.
3. Identification number for "Code and Standards"
   (1) American Society of Mechanical Engineers (ASME) Code, Section III, Class 1 (Reference 3.2-14)
   (2) ASME Code, Section III, Class 2 (Reference 3.2-14)
   (3) ASME Code, Section III, Class 3 (Reference 3.2-14)
   (4) RG 1.26 (Reference 3.2-13), Table 1, Quality Standards
   (5) Codes and standards as defined in design bases
   (6) ~~RG 1.143 (Reference 3.2-10), Table 1, Code and Standards for Design of SSC in Radwaste Facilities~~Codes and standards, and guidelines provided in RG 1.143 (Reference 3.2-10), for design of SSCs for Radwaste Facility (DCD_03.02.01-6)
4. Not used

Chapter 4

Chapter 4 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
MAP_4.4.7-2	4.4	4.4-1	To be consistent with next DCD revision (Rev.2)	Delete COL 4.4 (1) and associated description	4

4.4 THERMAL-HYDRAULIC DESIGN

This section of the referenced DCD is incorporated by reference with ~~the following departures and/or supplements.~~no departures or supplements. MAP_4.4.7-1

~~4.4.1.1.2 Discussion~~

STD COL 4.4(1) ~~Replace the eighth paragraph in DCD Subsection 4.4.1.1.2 with the following.~~

~~The safety analysis limit of the minimum departure from nucleate boiling ratio (DNBR) is determined as 1.45 for both the channel types, accommodating the DNBR penalties incurred due to rod bows described in DCD Subsection 4.4.2.2.4 and transition core geometry, and/or reserving more core operational flexibilities.~~

~~After the actual plant specific instrumentations are selected, it is to be confirmed whether the design limits of Min. DNBR are valid based on the relevant plant specific instrumentation uncertainties, or the safety analysis limit of Min. DNBR value covers the new design limits of Min. DNBR and other DNBR penalties such as rod bow penalty, transition core geometry and/or reserving more core operational flexibilities. This will be completed prior to fuel load.~~

~~4.4.7 Combined License Information~~

STD COL 4.4(1) ~~Replace the content of DCD Subsection 4.4.7 with the following.~~

~~*4.4(1) Design limits of Min. DNBR and safety analysis limit of Min. DNBR*~~

~~*This COL item is addressed in Subsection 4.4.1.1.2.*~~

Chapter 5

Chapter 5 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00528	5.2.1.2	5.2-1	Editorial correction	Include words about RG 1.84.	0
CTS-00675	5.2.1.2	5.2-1	Editorial correction	Add "Units 3 and 4" after Comanche Peak Nuclear Power Plant. Delete a period in LMN	0
RCOL2_05.03-1	5.3.2.3	5.3-3	Responses to RAI No. 2 Luminant Letter TXNB-09010 Dated 5/1/2009	Add clarification about the timing of submitting PTS evaluation using the as–procured reactor vessel material properties.	-
RCOL2_05.03.02-2	5.3.2.1	5.3-2	Response to RAI No. 8 Luminant Letter no.TXNB-09028 Date 8/7/2009	Include a commitment to update P/T limits before fuel load. The RAI No.2 change is superseded by RAI No.8.	-
DCD_05.03.02-1	5.3.2.1	5.3-2	Reflect Response to DCD RAI No. 287	Stated that generic PTLR will be applied for CPNPP 3&4.	4

CP COL 5.3(2) Add the following text after the last paragraph in DCD Subsection 5.3.1.6.3.

A summary technical report, including test results, is submitted as specified in 10 CFR 50.4, for the contents of each capsule withdrawn, within one year of the date of capsule withdrawal unless an extension is granted by the Director, Office of Nuclear Reactor Regulation.

The report includes the data required by ASTM E-185-82, as specified in paragraph III.B.1 of 10 CFR 50, Appendix H, and includes the results of the fracture toughness tests conducted on the beltline materials in the irradiated and unirradiated conditions.

If the test results indicate a change in the Technical Specifications, either in the pressure-temperature limits or in the operating procedures, the expected date for submittal of the revised Technical Specifications is provided with the report.

5.3.2.1 Limit Curves

STD COL 5.3(1) Replace the last sentence in the second paragraph with the following in DCD Subsection 5.3.2.1.

~~Plant specific curves will be developed and included in the pressure and temperature limits reports (PTLR) for CPNPP Units 3 and 4, as required by Technical Specification 5.6.4.~~The generic pressure and temperature limits reports (PTLR) for the US-APWR reactor vessel will be applied for CPNPP Units 3 and 4. DCD_05.03.02-1

The COL Holder will update the P/T limits prior to fuel loading using the PTLR methodologies approved in the US-APWR DCD and the plant specific material properties and inform the NRC of the updated P/T limits as required by the CPNPP 3 and 4 Technical Specifications. RCOL2_05.03.02-2

5.3.2.2 Operating Procedures

STD COL 5.3(1) Replace the first sentence in the last paragraph with the following in DCD Subsection 5.3.2.2.

Operating procedures will be developed for CPNPP Units 3 and 4 in accordance with Section 13.5, such that the plant-specific pressure-temperature limit curves are not exceeded and Technical Specification requirements are satisfied.

Chapter 6

Chapter 6 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00518 CTS-00644	6.4.4	6-i 6.4-1 6.4-3 1.8-43	To reflect resolution of acceptance review issue	Include dose evaluation in the control room due to a post-accident release from the other US-APWR unit or existing CPNPP unit.	0
	6.4.4		Editorial correction	Add Subsection “6.4.4.2” in Table 1.8-201 and Subsection 6.4.7.	0
CTS-00642	6.1	6.1-1	Update	All 6.1 COL Items have been deleted from the DCD. This FSAR section is now IBR with no departures or supplements.	0
MAP-06-001	6.1.1.2.2	6.1-2	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.1(1)	0
MAP-06-002	6.1.1.1	6.1-1 6.1-2	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.1(2)	0
MAP-06-003	6.1.1.2.1	6.1-1 6.1-2	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.1(3)	0
MAP-06-004	6.1.1.2.1	6.1-1 6.1-2	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.1(4)	0
MAP-06-005	6.1.2	6.1-2 6.1-3	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.1(5)	0
MAP-06-006	6.2.1.1.3.4 6.2.1.5.7	6.2-1 6.2-3	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.2(1)	0
MAP-06-007	6.2.2.3 Table 6.2.2-2R	6.2-1 6.2-4 6.2-6	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.2(9)	0
MAP-06-008	6.2.4.2	6.2-2 6.2-3	Deletion of COL item. Letter MHI Ref:UAP-	Delete COL 6.2(6)	0

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
			HF-08259, dated on Nov.7, 2008		
MAP-06-009	6.2.5.2	6.2-2 6.2-3	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.2(7)	0
DCD_06.02.06-2	6.2.6.1	6.2-3	DCD_RAI 06.02.06-2	Change “first sentence “ to “first and second sentences”.	0
CTS-00643	6.3	6.3-1	Update	All 6.3 COL Items have been deleted from the DCD. This FSAR section is now IBR with no departures or supplements.	0
MAP-06-011	6.3.2.8	6.3-1 6.3-2	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.3(3)	0
MAP-06-012	6.3.2.2.4	6.3-1 6.3-2	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.3(4)	0
MAP-06-013	6.3.2.4	6.3-1 6.3-2	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.3(6)	0
MAP-06-014	6.4.3 6.4.7	6.4-1 6.4-3	Revision of COL 6.4(2)	Revise COL Item to only discuss automatic actions and manual procedures for the MCR HVAC system in the event of postulated toxic gas release.	0
MAP-06-015	6.4.2.2.1	6.4-1 6.4-3	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.4(4)	0
CTS-00652	6.4.4.2 6.4.7	6.4-2 6.4-3	Re-evaluation of COL Item	Associate COL 6.4(2) with Subsection 6.4.4.2.	0
CTS-00653	6.4.4.2	6.4-3	Erratum	Change “5.2 ppm “ to “5.7 ppm”.	0
MAP-06-016	6.5.1.7	6.5-1	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 6.5(4)	0

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
MAP-06-018	6.6.8	6.6-1	Revision of COL 6.6(2)	Revise description to only identify the implementation milestone of the program.	0
CTS-00696	6.4.4.2	6.4-1	NRC Staff Reviewer Comment Incorporation from 03-23-25-09 Hazards Analysis Audit	Added pointer to Table 2.2-214 for toxic chemicals that do not meet RG 1.78 screening criteria.	1
DCD_06.01.02-1	6.1	6.1-1	Reflect Response to DCD RAI No. 365 revision 1	Added COL 6.1(7) coating program	4

6.1 ENGINEERED SAFETY FEATURE MATERIALS

This section of the referenced DCD is incorporated by reference with ~~the~~the ~~following~~following departures ~~and/~~and/or supplements. CTS-00642 DCD_06.01.02-1

6.1.2 Organic Materials DCD_06.01.02-1

STD COL 6.1(7) Replace the last sentence of the fifth paragraph in DCD Subsection 6.1.2 with the following.

Coatings program will be developed and implemented prior to procurement phase.

6.1.3 Combined License Information

Replace the content of DCD Subsection 6.1.3 with the following.

STD COL 6.1(7) ***6.1(7)*** *Preparation of a coating program*

This COL item is addressed in Subsection 6.1.2

~~**6.1.1.1 Materials Selection and Fabrication**~~ MAP-06-002

~~STD COL 6.1(2) Replace the fourth sentence of the fifth paragraph in DCD Subsection 6.1.1.1 with the following.~~

~~An augmented inservice inspection (ISI) program will be developed to ensure the structural integrity of such components during service and will be implemented in accordance with Table 13.4-201.~~

~~**6.1.1.2.1 Compatibility of Construction Materials with Core Cooling Coolants and Containment Sprays**~~ MAP-06-003

~~STD COL 6.1(3) Replace the fourth sentence of the second paragraph in DCD Subsection 6.1.1.2.1 with the following.~~

~~A program to maintain an inventory of all acids and bases within the containment to aid in control of the pH of the recirculating water will be developed prior to initial~~

Chapter 7

Chapter 7 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_7.04_1	7.4.1.6	7.4-1	Response to RAI No.4 Luminant Letter no.TXNB-09020 Date 5/26/2009	Add a description of reference; FSAR subsection 9.2.5.	-
RCOL2_7.05_1	7.5.1.6.2	7.5-1	Response to RAI No.5 Luminant Letter no. TXNB-09020 Date 5/26/2009	Revise the description of EOF capability. EOF has identical information as TSC and MCR, but does not control capability.	-
CTS-00721	Table 7.4-201	7.4-2	Editorial correction	Change the Safe shutdown column of ESWS from “No” to “Yes”.	4
DCD_07.05-17	7.5.1.1 7.5.4 Table 7.5-201	7.5-1 7.5-2 7.5-3	Reflect Response to DCD RAI No. 238	The descriptions of Site-specific type E PAM variables for metrological parameters are added.	4

CP COL 7.4(1)

Table 7.4-201

Site-Specific Component Controls for Shutdown

Systems	Components	Normal Shutdown	Safe Shutdown
UHSS	UHS Cooling Tower Fans	Yes	Yes
	UHS Transfer Pump	No	Yes
	UHS Transfer Pump Discharge Valve	No	Yes
	UHS Transfer Line Basin Inlet Valve	No	Yes
	UHS Basin Makeup Control Valve	Yes	No
ESWS	UHS Basin Blowdown Control Valve	Yes	~~No~~Yes
HVAC	ESW Pump Room Exhaust Fan	Yes	Yes
	UHS Transfer Pump Room Exhaust Fan	No	Yes
	ESW Pump Room Unit Heater	Yes	Yes
	UHS Transfer Pump Room Unit Heater	No	Yes

CTS-00721

7.5 INFORMATION SYSTEMS IMPORTANT TO SAFETY

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

7.5.1.1 Post-Accident Monitoring

CP COL 7.5(1) Replace the seventh paragraph in DCD Subsection 7.5.1.1 with the following.

Site-specific type D post accident monitoring (PAM) variables related to the UHS ~~is~~and site-specific type E PAM variables for monitoring the meteorological parameters are presented in Table 7.5-201. DCD_07.05-17

7.5.1.6.2 Emergency Operations Facilities

CP COL 7.5(2) Replace the third paragraph in DCD Subsection 7.5.1.6.2 with the following.

The emergency operations facility (EOF) of the Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4 is located in the existing nuclear operations support facility, which is west of the reactor building.

The EOF is large enough to provide the following:

- Workspace for the personnel assigned to the EOF
- Space for the new displays and other related equipment associated with CPNPP Units 3 and 4
- Space for unhindered access to communication equipment related to CPNPP Units 3 and 4 by all EOF personnel
- Space for storage of and/or access to plant records and historical data
- A separate room for private U.S. Nuclear Regulatory Commission (NRC) consultations

The EOF working space is currently sized for 45 persons, including federal, state, and local emergency personnel. The existing EOF floor space is approximately 3200 sq. ft. The EOF is designed and equipped to support continuous operations over an extended period of time.

Displays associated with CPNPP Units 3 and 4 are common to both units ~~3 and 4~~ with a unit ~~-~~display selection capability. Post-accident monitoring, bypassed and RCOL2_7.05-1

inoperable status indication, plant alarms, and safety parameter display system information is displayed on non-safety human-system interface equipment in the EOF. The information displayed in the EOF, main control room (MCR), and technical support center (TSC) is identical, although the manner in which it is displayed may vary (e.g., single screen, multiple screens, single monitor, multiple monitors, etc.). ~~The display capability is similar to the ones in main control room (MCR) and technical support center (TSC).~~ The displays and communication related auxiliary equipment is strategically located in the existing EOF. Neither the EOF nor the TSC has plant control capability. RCOL2_7.05-1

7.5.4 Combined License Information

Replace the content of DCD Subsection 7.5.4 with the following.

CP COL 7.5(1) ***7.5(1)** Description of site-specific PAM variables ~~related to UHS~~* DCD_07.05-17

This COL item is addressed in Subsection 7.5.1.1 and Table 7.5-201.

CP COL 7.5(2) ***7.5(2)** Description of site-specific EOF*

This COL item is addressed in Subsection 7.5.1.6.2.

CP COL 7.5(1)

Table 7.5-201

Site-Specific PAM Variables

Variable	Range	Monitored Function or System	Quantity	Type	
UHS Basin Water Level	0 - 100% Span	Cooling Water System	2 per Basin	D	
ESW Header Pressure	0 - 150 psig	Cooling Water System	1 per Line	D	
UHS Basin Temperature	32 - 140°F	Cooling Water System	1 per Basin	D	
Meteorological Parameters	Note 1	Meteorology	1 per each variable	E	DCD_07.05-17

Note:

1. Wind speed, wind direction, temperature and delta temperature in the meteorological monitoring system are the PAM variables in the meteorological monitoring system. (See FSAR Subsection 2.3.3.2) DCD_07.05-17

Chapter 8

Chapter 8 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00451	List of Figures, Figure 8.2-201	8-iii 8.2-23	Editorial correction	Add “Relevant Portions of” to the title of the Figure 8.2-201.	0
CTS-00640	8.2.1.2	8.2-3	Editorial correction	Change “Any” to “Both of any”.	0
CTS-00686	8.2.1.2.1.1	8.2-5	Editorial correction	Delete “from”.	0
CTS-00641	8.2.1.2.1.1	8.2-6	Erratum	Change “is” to “are”.	0
CTS-00477	8.2	8.2-6	Clarification	Change description of offsite power system.	0
CTS-00479	8.4	8.4-1	Editorial correction	Change section title in bold font.	0
CTS-00722	8.3	8.3-2	COL item closure of the original COL Holder Items	Change the description of Grounding and Lightning Protection System design information.	4

protected from lightning strikes. ~~Design specification will be provided and updated prior to procurement phase.~~ Design information will be provided and incorporated in the updated FSAR before the issuance of COL. CTS-00722

STD COL 8.3(3) Add the following new Subsection after the Subsection 8.3.1.2.2.

8.3.1.3 Electrical Power System Calculations and Distribution System Studies

Short circuit, load flow and voltage regulation studies are performed using the computer software program titled Electrical Transient Analyzer Program (ETAP) published by Operation Technology, Inc. The ETAP computer software program conforms to the requirements of 10 CFR Part 21; 10 CFR Part 50 Appendix B; and American Society of Mechanical Engineers (ASME) NQA 1.

These studies are performed to assure that the rated interrupting capacity of the circuit breakers are not exceeded, electrical equipment are adequately sized for worst case postulated operating conditions, and that available voltages at load terminals are within acceptable range. Major electrical equipment ratings, short circuit interrupting ratings of major circuit breakers, short circuit withstand rating of major electrical equipment are shown in Table 8.3.1-1. Acceptable voltage ranges for major electrical loads are shown in Table 8.3.1-2.

8.3.2.1.1 Class 1E DC Power System

STD COL 8.3(8) Replace the last sentence of the third paragraph in DCD Subsection 8.3.2.1.1 with the followings.

Short circuit analysis for dc power system is addressed in Subsection 8.3.2.3.

8.3.2.1.2 Non-Class 1E DC Power System

STD COL 8.3(8) Replace the last sentence of the fourth paragraph in DCD Subsection 8.3.2.1.2 with the followings.

Short circuit analysis for dc power system is addressed in Subsection 8.3.2.3.

Chapter 9

Chapter 9 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00586	9.2.1.2.1	9.2-1 9.2-2	Consistent with Subsection 9.4.5.2.6	Change “ESWP house” to “UHS ESW pump house”.	0
CTS-00608	9.4	9.4-7	Erratum	Change heating coil capacity of EFP (M/D) Area Air Handling Unit from “1 kW” to “2 kW”.	0
DCD_09.05.01-6	9.5.1.3 9.5.9	9.5-3 9.5-18	DCD_RAI 09.05.01-6	Add Subsection 9.5.1.3.	0
DCD_09.05.01-15	Table 9.5.1-1R	9.5-46	DCD_RAI 09.05.01-15	Add LMNs in Table 9.5.1-1R and Table 9.5.1.2R.	0
DCD_09.05.01-7	Table 9.5.1-1R	9.5-55	DCD_RAI 09.05.01-7	Add “see Subsection 9.5.1.3” to Table 9.5.1.1R.	0
DCD_09.05.01-5	Table 9.5.1-1R	9.5-56	DCD_RAI 09.05.01-5	Fill in Remarks on Table 9.5.1-1R.	0
DCD_09.05.01-15	Table 9.5.1-2R	9.5-112 9.5-113	DCD_RAI 09.05.01-15	Add LMNs in Table 9.5.1-1R and Table 9.5.1.2R.	0
DCD_09.02.04-1	9.2.10	9.2-12	Reflect Response to DCD RAI No. 125	Revised text in CP COL 9.2(10) for clarity.	3
DCD_09.02.04-2	9.2.10	9.2-13	Reflect Response to DCD RAI No. 125	Revised text in CP COL 9.2(16) for clarity.	3

Chapter 10

Chapter 10 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_10.02.03-01	10.2	10.2-1	Response to RAI No. 6 Luminant Letter no.TXNB-09023 Date 06/17/2009	For FSAR Subsection 10.2.3.5, delete the entire paragraph and replace with the following: ”A turbine maintenance and inspection procedure will be established prior to fuel load.”	-
DCD_10.03.06-6	10.3.6.3.1	10.3-1	Reflect Response to DCD RAI No.250	Replace “industry guidelines” with “NSAC-202L-R3”. Add new sentence to end of second paragraph.	3
RCOL2_10.03.06-1 RCOL2_10.03.06-2	10.3.6.3.1	10.3-1	Response to RAI No. 7 Luminant Letter no.TXNB-09028 Date 8/7/2009	Replace “considers the information” with “addresses the concerns” and insert “consistent with the guidelines of” for the 2nd sentence of the 2nd paragraph. Replace the revision number for NSAC-202L from “R3” to “R2”.	-
				Replace “a limited, but thorough, baseline inspection program” with “perform preservice inspection” for the first bullet in the 3rd paragraph.	-
	10.3.6.3.1.2	10.3-2	Response to RAI No. 7 Luminant Letter no.TXNB-09028 Date 8/7/2009	Insert “to identify wall thickness margins for thinning and” in the 1st sentence of the 1st paragraph.	-
				Insert “with grid location” in the 2nd sentence of the 1st paragraph.	-
				Insert a new sentence after the 2nd sentence of the 1st paragraph.	-

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
RCOL2_10.03.06-1 RCOL2_10.03.06-2	10.3.6.3.1.2	10.3-2	Response to RAI No. 7 Luminant Letter no.TXNB-09028 Date 8/7/2009	Delete the letter “s” in the word “inspections” and replace “are” with “after preservice inspection is” in the 3rd sentence of the 1st paragraph. Insert the word “trend” after “baseline” in the 3rd sentence of the 1st paragraph.	-
	10.3.6.3.1.4	10.3-3	Response to RAI No. 7 Luminant Letter no.TXNB-09028 Date 8/7/2009	Insert a new bullet item after the 2nd bullet under “b. Implementing Procedures”.	-
				Insert “after plant operation cycles” at the end of the 4th bullet under “b. Implementing Procedures”.	-
	10.3.6.3.1.6	10.3-4	Response to RAI No. 7 Luminant Letter no.TXNB-09028 Date 8/7/2009	Insert new sentence after the 1st sentence.	-
RCOL2_10.03-1	10.3.2.3.2	10.3-1	Response to RAI No. 16 Luminant Letter no.TXNB-09033 Date 08/24/2009	Delete the entire Subsection 10.3.2.3.2 and its subsection subheading “Main Steam Safety Valves”.	-
RCOL2_10.03-1	10.3.7	10.3-4	Response to RAI No. 16 Luminant Letter no.TXNB-09033 Date 08/24/2009	Delete COL 10.3(2) description and state “Delete from DCD”.	-
RCOL2_10.04.08-2	10.4.8.2.1	10.4-6	Response to RAI No. 17 Luminant Letter no.TXNB-09034 Date 08/24/2009	Delete the entire second paragraph in FSAR Subsection 10.4.8.2.1.	-
DCD_10.03-1	10.3.2.4.3	10.3-1	Reflect Response to DCD RAI No. 329	Add new subsection.	4
DCD_10.03-1	10.3.7	10.3-4	Reflect Response	Add new COL item.	4

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
			to DCD RAI No. 329		
DCD_10.04.07-1	10.4.7.7	10.4-5	Reflect Response to DCD RAI No. 124	Add new subsection.	4
DCD_10.04.07-1	10.4.12	10.4-9	Reflect Response to DCD RAI No. 124	Add new COL item.	4
HYDSV-16	10.4.5.3.2	10.4-5	Hydrology Site Safety Visit	Add new subsection.	4
HYDSV-16	10.4.5.6	10.4-5	Hydrology Site Safety Visit	Clarified the actuation of the makeup water pumps.	4

10.3 MAIN STEAM SUPPLY SYSTEM

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

~~10.3.2.3.2 Main Steam Safety Valves~~

RCOL2_10.03-1

STD COL 10.3(2) ~~Replace the seventh paragraph in DCD Subsection 10.3.2.3.2 with the following.~~

~~The actual throat area for the Main Steam Safety Valves will be determined at the procurement stage.~~

10.3.2.4.3 Water (Steam) Hammer Prevention

DCD_10.03-1

STD COL 10.3(3) Replace the 6th and 7th sentence of first paragraph in DCD Subsection 10.3.2.4.3 with the following.

The operating and maintenance procedures regarding water hammer are included in system operating procedures in Subsection 13.5.2.1. A milestone schedule for implementation of the procedures is also included in Subsection 13.5.2.1.

10.3.6.3 Flow-Accelerated Corrosion (FAC)

STD COL 10.3(1) Replace the fourth paragraph

in DCD Subsection 10.3.6.3 with the following.

10.3.6.3.1 Flow-Accelerated Corrosion (FAC) Monitoring Program

Erosion-corrosion in piping systems is a flow-induced material degradation process. It can affect metallic materials whose corrosion resistance is based on the formation of oxide (protective) surface film. Wear-off destruction of the oxide film by turbulent flow water or steam causes corrosion of the unprotected metal.

The FAC monitoring program analyzes, inspects, monitors, and trends FAC degradation of carbon steel piping and piping components in high-energy systems

- Performing inspections after plant operation cycles — RCOL2_10.03.06-1
- Evaluating degraded and/or thinning components — RCOL2_10.03.06-2
- Repairing, replacing and/or remodeling components, when necessary
- Selecting and scheduling locations for the next inspections
- Collection and storage of inspections records
- Expanding the inspection locations as necessary

10.3.6.3.1.5 Industry Experience

Industry experience provides valuable supplement to the plant analysis and management program. The FAC monitoring program is updated from time to time to include industry experience by identifying susceptible components or piping features.

10.3.6.3.1.6 Long-Term Strategy

The long-term strategy is to improve the inspection program and to reduce susceptibility of piping components to FAC. An effective long-term monitoring program description is included in the CPNPP Units 3 and 4 FAC Monitoring Program. — RCOL2_10.03.06-2

10.3.6.3.1.7 Plant Chemistry

The responsibility for system chemistry is under the purview of the plant chemistry section. The plant chemistry section specifies chemical addition in accordance with plant procedures.

10.3.7 Combined License Information

Replace the content of the DCD Subsection 10.3.7 with the following.

STD COL 10.3(1) ***10.3(1)*** *FAC monitoring program*
This COL item is addressed in Subsection 10.3.6.3

~~STD COL 10.3(2)~~ ***10.3(2)*** *Deleted from the DCD.* ~~*Safety and relief valve information*~~
~~*This COL item is addressed in Subsection 10.3.2.3.2*~~ — RCOL2_10.03-1

STD COL 10.3(3) ***10.3(3)*** *Operating and maintenance procedures for water (steam) hammer prevention* — DCD_10.03-1

This COL item is addressed in Subsection 10.3.2.4.3.

10.4.7.7 Water Hammer Prevention

DCD_10.04.07-1

STD COL 10.4(6) Replace the 6th paragraph in DCD Subsection 10.4.7.7 with the following.

The operating and maintenance procedures regarding water hammer are included in system operating procedures in Subsection 13.5.2.1. A milestone schedule for implementation of the procedures is also included in Subsection 13.5.2.1.

10.4.8.1.2 Non-safety Power Generation Design Bases

CP COL 10.4(2) Add the following text before the first paragraph in DCD Subsection 10.4.8.1.2.

Throughout this subsection 10.4.8, “waste water system (WWS)" described in DCD 10.4.8 is replaced with "existing waste water management Pond C".

CP COL 10.4(2) Add the following text after the last bullet in DCD Subsection 10.4.8.1.2.

- Discharge secondary side water (after cooling) to existing waste water management Pond C or LWMS during plant start up and abnormal chemistry conditions.
- Monitor the concentration of radioactive material in the cooled blowdown water with startup SG blowdown heat exchanger downstream radiation monitor downstream of startup blowdown heat exchanger.

10.4.8.2.1 General Description

CP COL 10.4(2) Replace the first and second paragraph in DCD Subsection 10.4.8.2.1 with the following.

The steam generator blowdown system (SGBDS) flow diagrams are shown in Figures 10.4.8-1R, 10.4.8-2R, and 10.4.8-201. Classification of equipment and components in the SGBDS is provided in Subsection 3.2.

~~The SGBDS includes startup SG blowdown flash tank, startup blowdown heat exchanger, piping, valves and instrumentation for discharging blowdown water to existing waste water management Pond C located outdoors.~~

RCOL2_10.04.08-2

The SGBDS equipment and piping are located in the containment, the reactor building, the auxiliary building, the turbine building(T/B), and outdoors.

10.4.8.5 Instrumentation Applications

CP COL 10.4(2) Add the following after the last paragraph in DCD Subsection 10.4.8.5.

High pressure and high water level in the startup SG blowdown flash tank closes the upstream flow control valve.

The startup SG blowdown heat exchanger downstream radiation monitor, located in the piping downstream of the startup SG blowdown heat exchanger, detects the presence of radioactivity in the SGBDS. Upon detection of the significant levels of radioactivity, the blowdown water is diverted to the LWMS.

A high radiation signal of the startup SG blowdown heat exchanger downstream radiation monitor closes the SGBDS isolation valves.

10.4.12 Combined License Information

Replace the content of the DCD Subsection 10.4.12 with the following.

CP COL 10.4(1) ***10.4(1)*** *Circulated Water System*

This COL item is addressed in Subsection10.4.5, Table 10.4.5-1R, Figure 10.4.5-1R and Figure 10.4.5-201.

CP COL 10.4(2) ***10.4(2)*** *Steam Generator Blowdown System*

This COL item is addressed in Subsection10.4.8.1, 10.4.8.2, 10.4.8.5, Table 10.4.8-1R, Figure 10.4.8-1R, Figure 10.4.8-2R and Figure 10.4.8-201.

10.4(3) *Deleted from the DCD.*

10.4(4) *Deleted from the DCD.*

CP COL 10.4(5) ***10.4(5)*** *System design for Steam Generator Drain Mode*

This COL item is addressed in Subsection10.4.8.2.2.4.

STD COL 10.4(6) ***10.4(6)*** *Operating and maintenance procedures for water hammer prevention*

This COL item is addressed in Subsection 10.4.7.7.

DCD_10.04.07-1

The surface area of the screens is sized to provide a flow of 0.5 fps or lower through the screen slots, which also serves to minimize the potential for entrainment and to eliminate the potential for impingement of aquatic organisms per the 316(b) regulatory guidelines.

10.4.5.2.2.13 Makeup Water Intake Structure Screens

The makeup water intake structure screens are passive screens with adequate surface area to provide a velocity of 0.5 fps through the screen slots with consideration of partially clogged surface area.

The screens are cleaned by means of air blasts with the air being supplied by an air compressor and air receiver tank located in the intake structure. Cleaning is done periodically with a differential pressure monitoring system installed to measure the head loss across each screen and initiate cleaning of any screen that shows an unusual head loss across it due to clogging.

10.4.5.2.2.14 Air Compressor/Receiver for Backwashing Screens

Compressed air is used to air blast the screens to clean off accumulated debris on the outside surface. An air compressor and air receiver is used for this purpose.

10.4.5.3.2 Normal Operation

HYDSV-16

Add the following new paragraph after the third paragraph in DCD Subsection 10.4.5.3.2.

The CTW basins have level transmitters/controllers which send a signal to the pump controller for starting and stopping the makeup water pumps, based on low and normal water level in the CTW basins.

10.4.5.6 Instrumentation Applications

CP COL 10.4(1) Replace the ninth paragraph in DCD Subsection 10.4.5.6 with the following.

Level instrumentation in the CTW basin activates makeup water flow from Lake Granbury by transmitting level signals to ~~the CTW makeup water valves~~the makeup water pumps. The CTW basin makeup water valves are aligned from the main control room.

HYDSV-16

Chapter 11

Chapter 11 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00482	11.2.3.1	11.2-2	Editorial correction	Delete repeated phrase.	0
CTS-00481	Table11.2-14R	11.2-14	Editorial correction	Add “hr” in transit time.	0
MAP-11-001	11.3.3.3	11.3-2, 11.3-3	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 11.3(5)	0
CTS-00728	11.2.3.1	11.2-2	Clarification	Combined the statement of the second paragraph replacement and the statement of the last four paragraphs replacement.	4
CTS-00729	11.2.3.1	11.2-2	Editorial correction	Changed “to be” to” to remain”.	4
CTS-00805	11.2.3.1	11.2-2	Editorial correction	Separated the 5th paragraph. A new paragraph starts with the following sentence. “However, during the maximum…”.	4
HPSV-02	11.2.3.1	11.2-2 11.2-3	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Provided additional description about how discharge to Squaw Creek Reservoir will occur.	4
CTS-00730	11.2.3.1	11.2-3	Clarification	Added “CPNPP Units 3 and 4” in front of “waste holdup tanks” and “liquid effluent”.	4
HPSV-02	11.2.3.1	11.2-3	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Deleted commitment to evaluate circulating water dilution prior to Units 1 and 2 retirement.	4

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
HPSV-02	11.2.3.1	11.2-3	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Revised the description about the discharge line design.	4
CTS-00731	11.2.3.1	11.2-3	Editorial correction	Changed "…structure, system, and components…"to" …structures, systems, and components…"	4
CTS-00732	11.2.3.1	11.2-3	Editorial correction	Changed "…the local area rainfall and evaporation rate and half of liquid effluent." to" …the local area rainfall, evaporation rate, and receiving half of the CPNPP Units 3 and 4 liquid effluent."	4
CTS-00733	11.2.3.1	11.2-3	Editorial correction	Combined following sentences to one sentence to delete duplicate description. "The pond design includes a discharge line and transfer pump. A discharge line connects into CPNPP Units 1 and 2 circulating water return line to keep the pond from overflowing during periods of extreme weather conditions."	4
HPSV-02	11.2.3.4	11.2-4	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Added a new subsection to provide the evaporation pond design criteria and operating information.	4
HPSV-02	11.3.3.1	11.3-2	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Added note that noble gases are not present in evaporation pond.	4
HPSV-02	Figure 11.2-	11.2-25	NRC information need at HP Safety	Revised the figure to use dotted line for	4

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
	201(Sheet 9 of 9)		Site Visit (June 23 and 24,2009)	existing Unit 1 and 2 piping and a solid line for the evaporation pond.	
HPSV-04	11.3.3.1	11.3-2	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Corrected the discrepancy on total dose to skin and total body between the text and Table 11.3-9R.	4
HPSV-04	11.3.3.1	11.3-2	NRC information need at HP Safety Site Visit (June 23 and24,2009)	Identified maximum dose from the pond and the pond + the vent stack in text. Identified the h group organ pathway also.	4
HPSV-09	11.4.2.3	11.4-2	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Provided the additional description about the new low-level radwaste storage facility.	4
HPSV-10	11.5.2.9	11.5-2	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Revised to reflect that the ODCM will be re-written to apply to all four CPNPP units and to conform with the NEI.	4

Figure 11.2-201, Sheets 1 through 9 illustrate the piping and process equipment, instrumentation and controls for Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4 LWMS.

The treated liquid effluent is discharged to Squaw Creek Reservoir via CPNPP Units 1 and 2 circulating water return line with provision to divert a portion of the flow to an evaporation pond. The shape of the flow orifices and other technical details will be developed in the detail design phase. Subsection 11.2.3.1 discusses the design of the evaporation pond and return line connections.

11.2.3.1 Radioactive Effluent Releases and Dose Calculation in Normal Operation

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CP COL 11.2(2)
CP COL 11.2(4)

Replace the ~~second and third sentences of the second paragraph~~last five paragraphs in DCD Subsection 11.2.3.1 with the following. CTS-00728

The annual average release of radionuclides is estimated by the PWR-GALE Code (Ref.11.2-13) with the reactor coolant activities that is described in Section 11.1. The parameters used by the PWR-GALE Code are provided in Table 11.2-9, and the calculated effluents are provided in Table 11.2-10R. The calculated effluents for the maximum releases are provided in Table 11.2-11R. On this site-specific application, handling of contaminated laundry is contracted to off-site services. Therefore, the detergent waste effluent need not be considered.

~~CP COL 11.2(2)~~
~~CP COL 11.2(4)~~

~~Replace the last four paragraphs in DCD Subsection 11.2.3.1 with the following~~. CTS-00728

The calculated effluent concentrations using annual release rates are then compared against the concentration limits of 10 CFR 20 Appendix B (see Tables 11.2-12R and 11.2-13R.).

Once it is confirmed that the treated effluent meets discharge requirements, the effluent is released into Squaw Creek Reservoir via the CPNPP Units 1 and 2 circulating water return line. The liquid effluent is maintained at ambient temperature, as it is stored inside the auxiliary building (A/B) waste monitoring tanks. Currently, Squaw Creek Reservoir has a tritium concentration limit of 30,000 pCi/L (Reference 11.2-201). Based on an analysis, the tritium concentration in Squaw Creek Reservoir~~, the tritium concentration in Squaw Creek Reservoir~~ is anticipated to ~~be~~remain within the tritium limit due to the local rainfall, evaporation, and spillover (control release) from Squaw Creek Reservoir to Squaw Creek. CTS-00482 CTS-00729

However, during the maximum tritium generation condition (i.e., all four units operating at full power), the tritium concentration could be exceeded. When the tritium concentration in Squaw Creek Reservoir is determined to be close to the CTS-00805 HPSV-02

offsite dose calculation manual (ODCM) limit, as much as half of the liquid effluent from CPNPP Units 3 and 4 can be diverted to the evaporation pond for temporary staging. ~~A portion of the liquid effluent from CPNPP Units 3 and 4 discharge header can be diverted to an evaporation pond located within the site boundary. Under this maximum tritium generation condition, and maintaining a 20 percent margin below the offsite dose calculation manual (ODCM) limit, up to half of liquid effluent is diverted into the evaporation pond.~~ HPSV-02

When the tritium concentration in Squaw Creek Reservoir again decreases below the operating target, the effluent in the pond is sampled and analyzed for suitability to discharge back into Squaw Creek Reservoir. In the event that both CPNPP Units 1 and 2 are temporarily not in operation, or when there is no dilution flow, the CPNPP Units 3 and 4 waste holdup tanks (WHTs) and waste monitor tanks (WMTs) have enough capacity to store more than a month of the daily waste input. The evaporation pond can also receive 100 percent of the CPNPP Units 3 and 4 liquid effluent on a temporary basis. ~~It is noted that before CPNPP Units 1 and 2 retire, an evaluation is needed to address the requirement of the circulating water as dilution water to CPNPP Units 3 and 4 effluents.~~ CTS-00730 CTS-00730 HPSV-02

~~CPNPP Units 3 and 4 discharge header and the evaporation pond discharge lines are connected to the circulating water return line for CPNPP Units 1 and 2 in two locations before the circulating water is discharged into Squaw Creek Reservoir. The locations of the connections provide sufficient distance for thorough mixing before the liquid is released into Squaw Creek Reservoir.~~The effluent discharge piping from CPNPP Unit 3 and 4 consists of a piping leaving the north side of each unit's Auxiliary Building and joining together outside the Unit 4 Auxiliary Building. The piping leaving the Auxiliary Building is buried underground with inspection ports along the piping run towards the discharge box located at the Squaw Creek Reservoir. The exact locations of the connections into the circulating water discharge ~~header~~box is determined in the detail design phase with consideration of the impact of sharing structures, systems, and components (SSCs) among the nuclear units. CTS-00731

The evaporation pond is designed to provide sufficient surface area for natural evaporation based on the local area rainfall, ~~and~~ evaporation rate, and receiving half of the CPNPP Units 3 and 4 liquid effluent. The evaporation pond is sized to prevent overflow due to local maximum rainfall condition. The pond design includes a discharge line and transfer pump~~. A discharge line connects into CPNPP Units 1 and 2 circulating water return line~~ to keep the pond from overflowing during periods of extreme weather conditions, and to forward the effluent to Squaw Creek Reservoir. The effluent is sampled before discharge and is monitored for radionuclide concentration by a radiation monitor which can turn off the pump, shut off the discharge valve and initiate an alarm signal to the Main Control Room and the Radwaste Control Room for operator actions.. Doses from airborne particulates from the evaporation pond are described in Subsection 11.3.3. CTS-00732 CTS-00733 HPSV-02

Isotopic concentrations are calculated, assuming 247,500 gpm per unit of circulating water from CPNPP Units 1 and 2 (Reference 11.2-201, ODCM for CPNPP Units 1 and 2). The isotopic ratios between the expected releases and the concentration limits of 10 CFR 20 Appendix B are listed in Table 11.2-12R. The isotopic ratios between the maximum releases and the concentration limits of 10 CFR 20 Appendix B are listed in Table 11.2-13R. These ratio values are less than the allowable value of 1.0.

The individual doses and population doses are evaluated with the LADTAP II Code (Reference 11.2-14). The site-specific parameters used in the LADTAP II Code are listed in Table 11.2-14R, and the calculated individual doses are listed in Table 11.2-15R. And the calculated population dose from liquid effluents is 2.14 person-rem for whole-body and 2.04 persom-rem for thyroid. Based on these parameters, the maximum individual dose to total body is 0.90 mrem/yr (adult) and the maximum individual dose to organ is 1.28 mrem/yr (teenager's liver). These values are less than the 10 CFR 50 Appendix I criteria of 3 mrem/yr and 10 mrem/yr, respectively. According to NUREG-0543 (Reference 11.2-202), there is reasonable assurance that sites with up to four operating reactors that have releases within Appendix I design objective values are also in conformance with the EPA Uranium Fuel Cycle Standard, 40 CFR 190. Once the proposed CPNPP Units 3 and 4 are constructed, the Comanche Peak site will consist of four operating reactors.

11.2.3.2 Radioactive Effluent Releases Due to Liquid Containing Tank Failures

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CP COL 11.2(3) Replace the last paragraph in DCD Subsection 11.2.3.2 with the following.

Site-specific hydrogeological data indicate that contaminant migration time is about two years (see Subsection 2.4.12), exceeding the travel time used in the above analysis. Additionally, the tank cubicles are equipped with drainpipes to a local sump that is designed to detect leakage and/or overflow, and initiate an alarm for operator action. Hence, the potential for groundwater contamination is greatly reduced and further analysis is not warranted.

CP SUP 11.2(1) Add the following Subsection after DCD Subsection 11.2.3.3. HPSV-02

11.2.3.4 Evaporation Pond

The primary purpose of the evaporation pond is to provide a means to receive, store, and process treated radioactive effluent from the CPNPP Units 3 and 4

liquid radioactive waste management systems when the tritium concentration in Squaw Creek Reservoir is approaching the ODCM limit. HPSV-02

In order to minimize contamination, the pond is rinsed each time the pond content is emptied. The rinse water is also forwarded to Squaw Creek Reservoir, via the discharge box and blended with the CPNPP Units 1 or 2 circulation water flow.

The evaporation pond is equipped with a leak detection system. In the event a leak is developed, a signal is sent to the Main Control Room and the Radwaste Control Room for operator actions, which may include removing the contents from the pond to facilitate inspection and repair as required.

The pond liner is inspected regularly to determine liner integrity with respect to the liners and their seams. In the event of punctures and/or rupture and repair is required, the pond contents are removed, and the pond is rinsed before repair is performed.

The evaporation pond is designed and constructed in accordance with the following standards (others may be applicable as the design is finalized):

Texas Commission of Environmental Quality (TCEQ)

- TCEQ 330, Municipal Solid Waste
- TCEQ 217.203, Design Criteria for Natural Treatment Facilities

American Society for Testing and Materials (ASTM)

- ASTM D3020, Specification for Polyethylene and Ethylene Copolymer Plastic Sheeting for Pond, Canal and Reservoir Lining
- ASTM D5514-06, Standard Test Method of Large Scale Hydrostatic Puncture Testing of Geosynthetics
- ASTM D7002-03, Standard Practice for Leak Location on Exposed Geomembranes Using the Water Puddle System

The evaporation pond is designed and constructed to contain treated effluent that is contaminated with radioactive nuclides. The pond opens to the environment to allow the tritiated water to naturally evaporate.

The evaporation pond is constructed with two layers of High Density Polyethylene material suitable for this service. The High Density Polyethylene is a minimum of 60 mils thickness.

A drainable mesh mat, with a minimum thickness of 30 mils, is provided in between the two layers of High Density Polyethylene to allow movement of the

liquid due to leakage of the content from the top layer of High Density Polyethylene.

The evaporation pond is constructed with a total depth of six feet, with four feet below grade and two feet freeboad. A berm is constructed to prevent surface water from entering the pond during rainy seasons. HPSV-02

The evaporation pond is constructed with a layer of clay with permeability less than 1E-7 centimeter per second to support the pond. The overall construction meets or exceeds the requirements for waste water pond stipulated by TCEQ. Some TCEQ requirements are as follows:

- In situ clay soils or placed and compacted meeting:
    - i. more than 30% passing a Number 200 mesh sieve
    - ii. liquid limit greater than 30%
    - iii. plasticity index greater than 15
    - iv. a minimum thickness of two feet
    - v. Permeability equal to or less than $1x10^{-7}$ centimeter per second
- Soil compaction will be 95% standard proctor density at optimum moisture content
- The pond is protected from inundation by a ten-year 2 hour rainfall event

The evaporation pond is equipped with a centrifugal pump to return the contents to the Squaw Creak Reservoir as tritium concentration in Squaw Creak Reservoir permits. The return piping leaving the evaporation pond is connected to the circulating water return line discharge box upstream of the discharge point. A radiation monitor is provided close to the pump discharge to monitor radiation level of the content, and provides a signal to automatically turn off the pump, shut off the discharge valve, and initiate a signal to alarm in the Main Control Room and the Radwaste Control Room for operator actions.

The piping for transporting the fluid from the discharge valve inside the Auxiliary Building to the pond, and the piping from the pond to the discharge point near Squaw Creak Reservoir, are High Density Polyethylene material. Leak collection and detection instrumentation are provided along the path of the pipe. Inspection ports are also provided to allow access for inspection of the integrity of the pipe. A back flow preventer is provided near the CPNPP Units 1 and 2 discharge boxes to prevent back flow from the circulating pipe.

Evaporation Pond Design Summary:

HPSV-02

Evaporation Pond Design Summary:

Volume: 1.4 million gallon net capacity

Surface area: 1 acre

Depth: Total 6 feet deep (4 feet liquid depth with 2 feet freeboard)

Type: Open with no cover

Liner material: High Density Polyethylene, 60 mils, two layers

Permeability: $1x10^{-7}$cm/sec

The evaporation pond contains treated liquid effluents in trace amounts that meet discharge requirements specified in 10 CFR 20 Appendix B, Table 2, and has radionuclide contents below that of the boric acid tank contents. Hence, the contamination level due to the failure of the evaporation pond is bounded by the failure of the boric acid tanks.

11.2.4 Combined License Information

Replace the content of DCD Subsection 11.2.4 with the following.

CP COL 11.2(1) ***11.2(1)*** *The mobile and temporary liquid radwaste processing equipment*

This combined license (COL) item is addressed in Subsection 11.2.1.6.

CP COL 11.2(2) ***11.2(2)*** *Site-specific information of the LWMS*

This COL item is addressed in Subsections 11.2.2 *and* 11.2.3.1.

CP COL 11.2(3) ***11.2(3)*** *The liquid containing tank failure*

This COL item is addressed in Subsection 11.2.3.2.

CP COL 11.2(4) ***11.2(4)*** *The site-specific dose calculation*

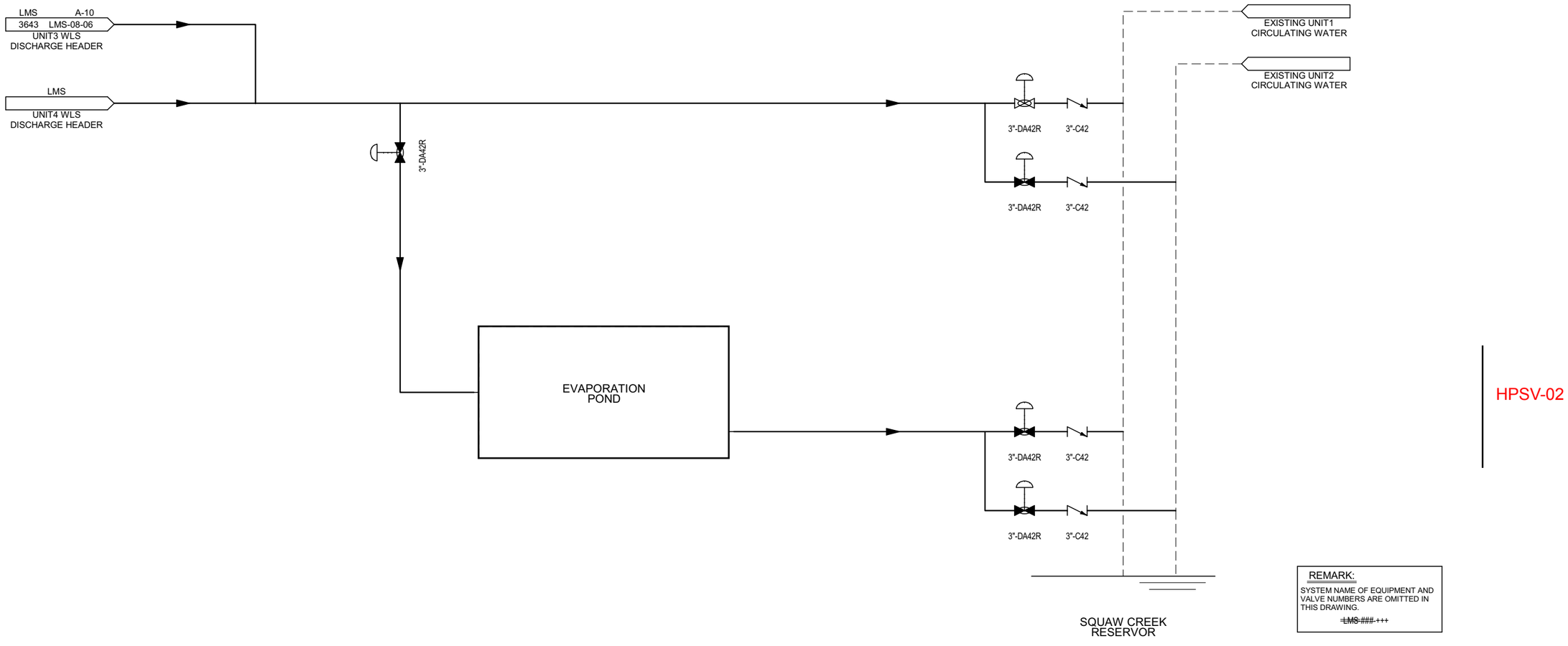
This COL item is addressed in Subsection 11.2.3.1*, Table 11.2-10R,* Table 11.2-11R, Table 11.2-12R, Table 11.2-13R, Table 11.2-14R *and* Table 11.2-15R.

CP COL 11.2(5) ***11.2(5)*** *Site-specific cost benefit analysis*

This COL item is addressed in Subsection 11.2.1.5.

CP COL 11.2(6) ***11.2(6)*** *Piping and instrumentation diagrams*

This COL item is addressed in Subsection 11.2.2 *and* Figure 11.2-201.



CP COL 11.2(6)

Figure 11.2-201 Liquid Waste Management System Piping and Instrumentation Diagram (Sheet 9 of 9)

CP COL 11.3(6) Replace the fifth and sixth paragraph in DCD Subsection 11.3.3.1 with the following.

The site-specific long-term annual average atmospheric dispersion factors (χ/Q) are given in Tables 2.3-340 through 2.3-346 are bounded by the value given in DCD Table 2.0-1 (1.6E-05 s/m^3). These values are calculated by methods presented in RG1.111. Therefore, also the radioactive concentrations at exclusion area boundary (EAB) are bounded by the values given in DCD Tables 11.3-5 through 11.3-7. The maximum individual doses are calculated using the GASPAR II Code (Reference 11.3-17) which implements the exposure methodology described in RG1.109. The site-specific parameters for the GASPAR II Code calculation are tabulated in Table 11.3-8R. Calculated doses are tabulated in Table 11.3-9R. The gamma dose in air is 5.77E-03 mrad/yr and the beta dose in air is 4.46E-02 mrad/yr, which are less than the criteria of 10 mrad/yr and 20 mrad/yr, respectively, that are required in 10 CFR 50, Appendix I. All of the dose to total body, the dose to skin, and the dose to organ are less than the criteria in 10 CFR 50, Appendix I: ~~4.72E-02~~3.69E-03 mrem/yr for 5 mrem/yr, ~~8.55E-02~~3.45E-02 mrem/yr for 15 mrem/yr, and 1.40E+00 mrem/yr [child's bone] for 15 mrem/yr, respectively. The compliance with 10 CFR 20.1302 is also demonstrated. HPSV-04

The population doses within the 50mi are calculated using the GASPAR II Code (Reference 11.3-17). The GASPAR II Code input parameters for the population dose are tabulated in Table 11.3-8R and Table 11.3-201. Calculated doses are 1.58 person-rem(Total body) and 1.98 person-rem(Thyroid).

Additionally, the dose from the evaporation pond is also calculated using the GASPAR II Code (Reference 11.3-17). The half of the liquid effluent is assumed to be diverted into the evaporation pond. Conservatively, all of the radioactive nuclides in the evaporation pond are assumed to be discharged to atmosphere as aerosol and vapor. The annual release rates from the evaporation pond to atmosphere are listed in Table 11.3-202, and parameters for the GASPAR II Code calculation are listed in Table 11.3-203. Liquid effluents contain no noble gases. Therefore, noble gases are not presented in the evaporation pond. HPSV-02 Calculated individual doses are listed in Table 11.3-204 the maximum organ dose is 2.37E+00 mrem/yr (Adult's GI-Tract). HPSV-04 And population doses are 1.01 person-rem(Total body) and 0.995 person-rem(Thyroid). Moreover, the total of individual doses from the vent stack and the evaporation pond are listed in Table 11.3-205 the maximum organ dose is 2.48E+00 mrem/yr (Adult's GI-Tract). HPSV-04 And the total of population doses are 2.59 person-rem(Total body) and 2.97 person-rem(Thyroid). The results are well below the dose criteria in 10 CFR 50 Appendix I. According to NUREG-0543 (Reference 11.3-201), there is reasonable assurance that sites with up to four operating reactors that have releases within Appendix I design objective values are also in conformance with the EPA Uranium Fuel Cycle Standard, 40 CFR 190. Once the proposed CPNPP Units 3 and 4 are constructed, the Comanche Peak site will consist of four operating reactors.

11.4.2.1.1 Dry Active Wastes

CP COL 11.4(1) Replace the last paragraph in DCD Subsection 11.4.2.1.1 with the following.

Descriptions of wastes other than normally accumulated non-radioactive wastes such as wasted activated carbon from GWMS charcoal beds, solid wastes coming from component (Steam generator, Reactor vessel etc.) replacement activities, and other unusual cases will be described in the process control program and will be implemented in accordance with the milestone listed in Table 13.4-201.

11.4.2.2.1 Spent Resin Handling and De-watering Subsystem

STD COL 11.4(8) Add the following text at the end of the second paragraph in DCD Subsection 11.4.2.2.1.

The P&ID for the SWMS is provided in Figure 11.4-201.

11.4.2.3 Packaging, Storage, and Shipping

CP COL 11.4(1) Replace the last sentence of the fourth paragraph in DCD Subsection 11.4.2.3 with the following.

A common radwaste interim storage facility is provided between Units 3 and 4 and is designed to store classes A, B, and C wastes from all four CPNPP units for up to 10 years. The common radwaste facility is designed to maintain onsite and offsite radiological doses within the limits in 10 CFR Part 20 and to maintain occupational exposures ALARA. This common radwaste interim storage facility reflects the site-specific waste volume reduction requirements and the current waste disposal strategy of the State of Texas. As design proceeds, the interim storage facility design may be revised to meet future waste acceptance and disposal criteria.

The common radwaste interim storage facility also includes a separate storage area for mixed waste and temporary staging of large equipment items for maintenance.

Specially shielded above grade cell vaults capable of storing a number of containers each are provided in the Remote Handled waste storage bay for HPSV-09

very-high activity Class B, C waste. Facility shielding is designed to meet 10CFR 20 and 40 CFR 190 dose levels and minimize total facility construction costs. HPSV-09

The facility is designed to have separate control and equipment room ventilation, radiation monitoring, and fire protection systems designed to meet minimum essential requirements, and reduced capital cost.

The facility have remotely operated bridge crane with closed circuit television cameras and crane mounted storage bay lighting sources. Optimal crane designs are used to minimize total facility construction cost.

The radioactive mixed waste storage area is designed and constructed in accordance with permit application for its operation received from the State of Texas Commission on Environmental Quality.

Primary regulations and NRC/Industry guidance covering the design and operation of interim radioactive waste storage facilities are 10 CFR 20, 10 CFR 61, 10 CFR 71, 40 CFR 190, 49 CFR 173, NUREG-0800 SRP Appendix 11.4-A, Generic Letter 81-38, Information Notice No. 89-27 and SECY-94-0198.

This interim storage facility is provided with the knowledge that as of July 1, 2008, the low level radioactive waste disposal facility in Barnwell, South Carolina, is no longer accepting Class B and C wastes from sources in states such as Texas that are outside of the Atlantic Compact, and that the disposal facility in Clive, Utah, is still accepting Class A waste from out of state. Class B and C waste constitutes a small fraction of the total low level radioactive waste that will be generated by CPNPP.

CPNPP Units 3 and 4 are scheduled to load fuel and begin commercial operation no earlier than 2016. Therefore, these units will not be generating Class B and C waste prior to that time. Although the interim storage facility is designed to store the Class A, B and C wastes generated by CPNPP Units 1, 2, 3, and 4 for 10 years, the facility could store waste for a proportionally longer period of operation if only Class B and C wastes were to be stored in that facility. It is likely that another disposal facility will be available that will accept Class B and C waste from sources in Texas well before the storage space in the interim storage facility is filled. In particular, in 2004, Waste Control Specialists applied for a license from the Texas Commission on Environmental Quality to develop a disposal facility in Andrews County, Texas, for Class A, B, and C waste. In August 2008 Waste Control Specialists received a draft license from the Texas Commission on Environmental Quality. According to its website, Waste Control Specialists plans on opening the Andrews County site in about December of 2010. Notwithstanding this, if additional storage capacity were eventually to be needed, CPNPP could expand the interim storage facility or construct additional storage facilities in accordance with applicable NRC guidance, such as Regulatory Issue Summary 2008-12, Considerations for Extended Interim Storage of Low-Level Radioactive Waste by Fuel Cycle and Materials Licenses, and Standard Review Plan 11.4.

CP COL 11.5(4)
CP COL 11.5(5)

Replace the last sentence in DCD Subsection 11.5.2.8 with the following.

Site-specific procedures on equipment inspection, calibration, maintenance, and regulated record keeping, which meet the requirements of 10 CFR 20.1301, 10 CFR 20.1302, and 10 CFR 50 Appendix I, are prepared and implemented under the quality assurance program referenced in Chapter 17.

11.5.2.9 Offsite Dose Calculation Manual

Replace the first sentence in DCD Subection 11.5.2.9 with the following.

CP COL 11.5(2)
CP COL 11.5(1)

Fulfillment of the 10 CFR 50 Appendix I guidelines requires effluent monitor data. A description of the monitor controls and the calculation of the monitor setpoints are part of the ODCM. The ODCM also provides the rationale for compliance with the radiological effluent Technical Specifications and for the calculation of appropriate setpoints for effluent monitors. The ODCM follows the guidance of NEI 07-09. The ODCM and radiological effluent Technical Specifications, which reflect the new reactor units, are implemented in accordance with the milestone listed in Table 13.4-201. CPNPP ~~has~~ already ha~~d~~s an existing ODCM (Reference 11.5-201) that is to reflect the new reactor units. The ODCM will be re-written to apply to all four CPNPP units and to conform with the NEI template before receipt of radioactive material in Unit 3 in accordance with FSAR Table 13.4-201. HPSV-10

11.5.2.10 Radiological Environmental Monitoring Program

CP COL 11.5(3)

Replace the content of DCD Subsection 11.5.2.10 with the following.

CPNPP currently has a radiological environmental monitoring program for CPNPP Units 1 and 2 that is described in the plant Technical Specifications and the existing ODCM. The program for CPNPP Units 3 and 4 is going to be described in the plant Technical Specification of CPNPP Units 3 and 4 and the ODCM, which reflect the new reactor units, is implemented in accordance with the milestone listed in Table 13.4-201. This program measures direct radiation using thermoluminescent dosimeters as well as analyses of samples of the air, water, vegetation, and fauna in the surrounding area. The guidance outlined in NUREG-1301 (Reference 11.5-21) and NUREG-0133 (Reference 11.5-18) is to be used when developing the radiological environmental monitoring program.

Chapter 12

Chapter 12 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
DCD_12.01-2	12.1.3	12.1-2	Delete Outdated RG	Delete RG8.20, 8.26, and 8.32.	0
DCD_12.02-15	12.2.1.1.10	12.2-1	DCD_RAI 12.02-15	Add “40 CFR 190”.	0
CTS-00463	12.5	12.5-1	Clarification	Change description about entry into the interim waste storage building.	0
DCD_12.03-12.04-2	12.1.3	12.1-2	Reflect Response to DCD RAI No. 12.03-12.04-2	Add COL Items	3
CTS-00717	12.2.1.1.10	12.2-1	Clarification	Clarify description of Interim Radwaste Storage/Staging Building	4
HPSV-07	12.4.1.9.2.1	12.4-2	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Identified and added dose sources such as warehouse C, HIC yard.	4

12.2 RADIATION SOURCES

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

12.2.1.1.10 Miscellaneous Sources

CP COL 12.2(2) Replace the second and third sentences of the sixth paragraph in DCD Subsection 12.2.1.1.10 with the following.

CPNPP Units 3 and 4 have no additional storage space for radwaste inside the plant structures. ~~CPNPP Units 3 and 4 have a plan to store temporarily radioactive wastes/materials in Interim Radwaste Storage/Staging Building outside the plant structures.~~ An additional storage space for radwaste, to be named the Interim Radwaste Storage Building, is planned for the future construction outside the plant structures. The radiation protection program (see Section 12.5) associated with this additional radwaste storage space is in place to ensure compliance with Title 10, Code of Federal Regulations (CFR) Part 20, 40 CFR 190 and to be consistent with the recommendations of RG 8.8.

CTS-00717

DCD_12.02-15

CP COL 12.2(2) Replace the second sentence of the seventh paragraph in DCD Subsection 12.2.1.1.10 with the following.

CPNPP Units 3 and 4 have no additional radwaste facilities for dry active waste.

CP COL 12.2(1) Replace the last paragraph in DCD Subsection 12.2.1.1.10 with the following.

Any additional solid, liquid and gaseous radiation sources that are not identified in Subsection 12.2.1, including radiation sources used for instruments calibration or radiography, will be provided when such site-specific information would become available in the procurement phase.

12.2.3 Combined License Information

Replace the content of DCD Subsection 12.2.3 with the following.

CP COL 12.2(1) ***12.2(1)*** *Additional sources*

ISFSI decreases with distance from the source, varying as the inverse square of the distance. For a point source, the following relation expresses the inverse square spreading effect:

$$\phi = \frac{S}{4\pi R^2}$$

Where ϕ is the intensity at a surface of a sphere of radius R, and S is the source strength. The energy twice as far from the source is spread over 4 times the area; therefore, it has one-fourth the intensity. Any point source that spreads its influence equally in all directions without limits to its range would obey the inverse square law. The distance from the CPNPP Units 3 and 4 construction area to any potential ISFSI site is well over 1000 ft. For conservatism, a distance of 1000 ft is assumed. Neglecting attenuation in the air and applying the inverse square relation, a 5 mrem/hr dose rate within the confines of the ISFSI (at an assumed distance of 1 ft from the source) is reduced to 5.0E-06 mrem/hr at 1000 ft from the ISFSI facility. Considering an exposure period of 2500 hr/yr, the annual dose to a construction worker from direct radiation emanating from the ISFSI is 1.25E-02 mrem/yr.

HPSV-07

Other direct radiation sources could potentially affect construction workers at the proposed CPNPP Units 3 and 4 site locations and the modification to the existing Sanitary Sewage Treatment Facility. These other direct radiation sources include the existing Warehouse C Dry Active Waste and Fixed Contamination Tool area, the planned Outage Laydown Area east of the CPNPP Units 1 and 2 Fuel Building, and the existing Storage Level "D" Zone where Class B and C radioactive waste is stored.

All of these areas will be maintained at the fence area boundary with dose rates <2 mrem/hr in accordance with the current site Radiation Protection Program entitled "General Health Physics Plan" STA-650. Distances from these areas to the CPNPP Units 3 and 4 proposed construction area are much greater than 1000 feet. Distances between these facilities and a proposed modification to the Sanitary Sewage Treatment Facility to accommodate additional volume, range from approximately 1100 to 1600 feet. As a result, and considering that the dose rates will be maintained <2 mrem/hr at the source fence boundary, the construction worker will not be affected by any of these other direct radiation sources.

12.4.1.9.2.2 Gaseous Effluents

Some radioactive gaseous effluents are released on a batch basis from CPNPP Units 1 and 2 to the environment. Release pathways in this category include intentional discharges from the containment purge exhaust and the waste gas decay tanks via the plant vent stacks. Radioactive gaseous effluents are released continuously from CPNPP Units 1 and 2 to the environment from the fuel buildings, safeguards buildings, and auxiliary building (A/B) ventilation exhaust systems, and the condenser off-gas system via the plant vent stacks.

Chapter 13

Chapter 13 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00484	13.1	13.1-17 13.1-18	Editorial correction	Change location of “Table 13.1-201 (Sheet 5 of 5)”.	0
CTS-00486	13.5	13.5-4 13.5-7	Editorial correction	Delete reference 13.5-201.	0
CTS-00488	13AA Table of Contents	13AA-ii	Editorial correction	Modify dot lines in Table of Contents.	0
CTS-00723	13.6	13.6-1	Reflect new rule	Add the new rule for the Cyber Security Plan.	4
CTS-00724	13.6	13.6-1	Update	Delete reference to NEI-03-12 for the physical security plan	4
CTS-00725	13.7	13.7-1	Update	Incorporate latest Rev.4 of NEI 06-06, “Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites”.	4
HPSV-09	13.2.1.1.3	13.2-1	NRC information need at HP Safety Site Visit (June 23 and 24,2009)	Added a subsection requiring initial and refresher Hazard Awareness Training.	4

13.6 SECURITY

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

STD COL 13.6(1) Replace the first paragraph in the DCD Subsection 13.6 with the following:

The Security Plan consists of the physical security plan, training and qualification plan, and the safeguards contingency plan. The Security Plan and Cyber Security Plan are ~~is~~ submitted to the NRC as a separate licensing document to fulfill the requirements of 10 CFR 52.79(a)(35) and 10 CFR 52.79(a)(36). The Security Plan and Cyber Security Plan meets the requirements contained in 10 CFR 26 and 10 CFR 73 and will be maintained in accordance with the requirements of 10 CFR 52.98. The Security Plan is categorized as security safeguards Information and is withheld from public disclosure pursuant to 10 CFR 73.21. CTS-00723

~~The physical security plan during construction, including control of access to the new plant construction site, is consistent with NEI 03-12, Appendix F (Reference 13.6-201), which is currently under NRC review.~~ CTS-00724

13.6.4 Combined License Information

Replace the content of DCD Subsection 13.6.4 with the following.

STD COL 13.6(1) ***13.6(1)*** *The plant overall security plan and implementation schedule*
This COL item is addressed in Section 13.6.

~~**13.6.5 References**~~ CTS-00724

~~Add the following reference after the last reference in DCD Subsection 13.6.5.~~

~~13.6-201 Nuclear Energy Institute, *Security Measures during New Reactor Construction*, NEI 03-12, Appendix F, Revision 2, 2007.~~

13.7 FITNESS FOR DUTY

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

STD COL 13.7(1) Replace the contents of DCD Section 13.7 with the following.

The fitness for duty program is implemented and maintained in two phases - the construction phase program and the operating phase program. The phases are implemented as indicated in Table 13.4-201. The construction phase program is consistent with NEI 06-06 (Reference 13.7-201). Luminant commits to an operating phase program as described in 10 CFR 26.

13.7.1 Combined License Information

Replace the content of DCD Subsection 13.7.1 with the following.

STD COL 13.7(1) ***13.7(1)*** *Operating and construction plant fitness-for-duty programs*
This COL item is addressed in Section 13.7.

13.7.2 References

Add the following reference after the last reference in DCD Subsection 13.7.2.

13.7-201 Nuclear Energy Institute, Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites, NEI 06-06, Revision ~~3~~4, February 200~~8~~9. CTS-00725

13.2 TRAINING

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

STD COL 13.2(1)
STD COL 13.2(2)
STD COL 13.2(3)
STD COL 13.2(4)
STD COL 13.2(5)

Add the following text to the end of DCD Section 13.2.

NEI 06-13A, "Template for an Industry Training Program Description" Revision 1 which includes Appendix A – Cold License Training Plan (Reference 13.2-201), including all subsections, is incorporated by reference. NEI 06-13 provides a complete generic program description for use with COL applications. The document reflects guidance provided by the NRC and by Industry-NRC discussions on training-related issues. A main objective of this program is to assist in expediting NRC review and issuance of the combined license. Chapter 1 of NEI 06-13 states "The results of reviews of operating experience are incorporated into training and retraining programs in accordance with the provisions of TMI Action Item I.C.5, Appendix 1A."

13.2.1.1 Program Description

Replace the content of DCD Subsection 13.2.1.1 with the following.

The content of this subsection is discussed above.

13.2.1.1.1 Licensed Plant Staff Training Program

Replace the content of DCD Subsection 13.2.1.1.1 with the following.

The content of this subsection is discussed above.

13.2.1.1.2 Non-Licensed Plant Staff Training Program (to be verified during construction)

Replace the content of DCD Subsection 13.2.1.1.2 with the following.

The content of this subsection is discussed above.

Add the following Subsection after DCD Subsection 13.2.1.1.2. HPSV-09

13.2.1.1.3 Hazards Awareness Training

Workers and operators will receive initial and annual refresher training for protection from chemical hazards and confined space entry in accordance with 29 CFR 1910.

Chapter 14

Chapter 14 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00635	14.2.2	14.2-1	Editorial correction	Change "Replace the last paragraph" to "Replace the last sentence of the second paragraph". Change "Appendix 14AA provides a description ...." to " A description .... are reconciled in Appendix 14AA".	0
RCOL2_14.03-1	14.2.12 14.2.12.1 14.2.13 Table 14.2-201	14.2-3 14.2-7 14.2-8	Responses to RAI No. 1 Luminant Letter TXNB-09010 Dated 5/1/2009	Add new item to ensure verification that local offsite fire departments utilize hose threads or adapters capable of connecting with onsite hydrants, hose couplings, and standpipe risers.	-
DCD_14.02-114	14.2.3 14.2.8.2.1 14.2.13	14.2-1 14.2-2 14.2-7	Reflect Response to DCD RAI No. 271.	Add description of STD COL 14.2(11) and STD COL 14.2(12) in accordance with DCD RAI No.271.	3
DCD_14.02-23	14.2.8.1 14.2.13	14.2-2 14.2-7	Reflect Response to DCD RAI No. 31.	Add description of STD COL 14.2(11) in accordance with DCD RAI No.31.	3
DCD_14.02-8	ACRONYMS AND ABBREVIATIONS	14-iv	Reflect Response to DCD RAI No.27	Add “Station Operations Review Committee”	4
	14.2.1	14.2-1	Reflect Response to DCD RAI No.27	Delete Subsection 14.2.1.	4
	14.2.2	14.2-1	Reflect Response to DCD RAI No.27	Delete reference to Appendix 14AA and revise text.	4
	14.2.3	14.2-1	Reflect Response to	Delete Subsection 14.2.3	4

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
			DCD RAI No.27		
	14.2.4 14.2.5 14.2.6	14.2-1 14.2-2	Reflect Response to DCD RAI No.27	Delete Subsection 14.2.4, 14.2.5 and 14.2.6.	4
	14.2.11	14.2-3	Reflect Response to DCD RAI No.27	Change COL information number	4
	14.2.13	14.2-7	Reflect Response to DCD RAI No.27	Revise COL information.	4
	Appendix 14AA		Reflect Response to DCD RAI No.27	Delete Appendix 14AA.	4
DCD_14.02-90	14.2.12	14.2-3	Reflect Response to DCD RAI No.93	Revise the description of replaced portion for COL information	4

ACRONYMS AND ABBREVIATIONS (Continued)

SORC	Station Operations Review Committee	DCD_14.02-8
SSC	structure, system, and component	
UHS	ultimate heat sink	

14.2 INITIAL PLANT TEST PROGRAM

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

~~14.2.1 Summary of Test Program and Objectives~~

DCD_14.02-8

STD COL 14.2(1) ~~Replace the last two paragraphs in DCD Subsection 14.2.1 with the following.~~

~~The initial test program (ITP) described in this chapter addresses both US-APWR and site-specific systems and components. The test program includes administrative controls for testing components and systems, which are described in this chapter.~~

14.2.2 Organization and Staffing

CP COL 14.2(2) Replace the last sentence of the second paragraph in DCD Subsection 14.2.2 with the following.

CTS-00635

The site-specific organization, organizational titles, organization responsibilities, and reporting relationships are consistent with US-APWR Test Program Description Technical Report, MUAP-08009 (Reference 14.2-29) with the following reconciliations.

DCD_14.02-8

Replace the fourth bullet in Section 3.4 of MUAP-08009 with the following.

- Mitsubishi Heavy Industries, Ltd. (MHI) and/or Mitsubishi Nuclear Energy Systems, Inc (MNES) (for preoperational testing performed on the nuclear steam support system and associated auxiliary systems)

Replace the second paragraph in Section 3.5 of MUAP-08009 with the following.

The test review group functions as a subcommittee of the Station Operations Review Committee (SORC) defined in Subsection 13.1.1.2.1 for initial startup testing matters. The test review group is charged with reviewing initial startup test activities and advising the SORC on the disposition of those items reviewed. The SORC may perform the test review group functions in lieu of the test review

group. The primary function of the test review group is the review and approval of initial startup program test procedures, procedure revisions, and test results. DCD_14.02-8

Replace the fourth bullet of the third paragraph in Section 3.5 of MUAP-08009 with the following.

- MHI and/or MNES

Replace the first sentence in Section 8.2 of MUAP-08009 with the following.

Test procedures are, at a minimum, reviewed by MHI or MNES engineering, Testing, Operations, Quality Assurance, Maintenance, and Licensing.

~~Appendix 14AA provides a description of the organizations responsible for all phases of the ITP, and a description of the administrative controls that assure that experienced and qualified supervisory personnel and other principal participants are responsible for managing, developing, and conducting the ITP.~~ CTS-00635 CTS-00635

14.2.3 Test Procedures

~~CP COL 14.2(3)~~ ~~Replace the last two paragraphs in DCD Subsection 14.2.3 with the following.~~ DCD_14.02-8

~~The process used to develop test specifications and test procedures is described in Appendix 14AA. Table 13.4-201 provides the milestone for the implementation of the ITP.~~

STD COL 14.2(12) Add the following sentence at the end of DCD Subsection 14.2.3. DCD_14.02-114

Approved test procedures for satisfying testing requirements of Section 14.2 are made available to the NRC approximately 60 days prior to their intended use.

~~14.2.4 Conduct of Test Program~~ DCD_14.02-8

~~CP COL 14.2(4)~~ ~~Replace the last paragraph in DCD Subsection 14.2.4 with the following.~~

~~Appendix 14AA provides a description of the administrative controls that govern the conduct of the test program. These controls include requirements that govern the activities of the startup organization and their interface with other organizations.~~ DCD_14.02-8

~~14.2.5 Review, Evaluation, and Approval of Test Results~~

CP COL 14.2(5) ~~Replace the last paragraph in DCD Subsection 14.2.5 with the following.~~

~~Appendix 14AA provides a description of the specific controls for the review, evaluation, and approval of the test results of the test program by appropriate personnel and/or organizations, including the methods and schedules for approval of test data for each major phase.~~

~~14.2.6 Test Records~~

CP COL 14.2(6) ~~Replace the last paragraph in DCD Subsection 14.2.6 with the following~~

~~Appendix 14AA provides a description of the specific controls for the preparation and retention of test records.~~

14.2.8.1 Preoperational and/or Startup Testing for Unique or First-of-a-Kind Principal Design Features

DCD_14.02-23

STD COL 14.2(11) Replace the last sentence of the second paragraph in DCD Subsection 14.2.8.1 with the following.

First-plant-only and prototype tests are either performed in accordance with Subection 14.2.8 or a justification is provided prior to initial fuel loading that the results of the First-plant-only test and prototype test are applicable to a subsequent plant and are not required to be repeated.

DCD_14.02-114

14.2.8.2.1 Natural Circulation Testing

STD COL 14.2(11) Add the following text at the end of DCD Subsection 14.2.8.2.1.

Natural circulation test is performed in accordance with Subsection 14.2.12.2.3.9 or a justification is provided based on Subsection 14.2.8.2.1 prior to initial fuel load that the results of the US-APWR prototype test are applicable to a subsequent plant and are not required to be repeated.

14.2.9 Trial Testing of Plant Operating and Emergency Procedures

CP COL 14.2(7) Replace the last paragraph in DCD Subsection 14.2.9 with the following.

A schedule for the development of plant procedures required for use during preoperational testing will be provided to the U.S. Nuclear Regulatory Commission (NRC) 12 months prior to the start of the corresponding preoperational tests. A schedule for the development of plant procedures required for use during startup testing is provided to the NRC 12 months prior to the start of fuel loading. The schedules provide sufficient detail to assure that the procedures required to support testing are available for test procedure preparation, review and performance.

14.2.11 Test Program Schedule

CP COL 14.2(~~8~~7) Replace the first and second sentences of the last paragraph in DCD Subsection 14.2.11 with the following. DCD_14.02-8

An event-based schedule for conducting each major phase of the test program for the Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4, relative to the start of fuel loading, will be provided to the NRC six months prior to the start of preoperational testing. The schedule will be periodically updated to reflect actual progress. Schedule preparation will include an assessment of overlapping test program schedules between CPNPP Units 3 and 4 and provide assurance that CPNPP Unit 3 will be given priority during the period when testing and plant staff personnel will be working on both units.

CP COL 14.2(~~9~~7) Replace the third sentence of the last paragraph in DCD Subsection 14.2.11 with the following. DCD_14.02-8

Preoperational tests which satisfy inspections, tests analyses, and acceptance criteria (ITAAC) test requirements, and ITAAC test requirements which can be incorporated into preoperational tests, are correlated in Table 14.2-202. This correlation is used to assure that ITAAC test requirements are included in the development of preoperational testing procedures.

14.2.12 Individual Test Descriptions

CP COL 14.2(10) Replace the first sentence of the last paragraph ~~and bullet~~ in DCD Subsection 14.2.12 with the following. DCD_14.02-90

Testing outside the scope of the certified design is addressed in Subsections 14.2.12.1.112, 14.2.12.1.113, and 14.2.12.1.114. Additional testing for the Fire Protection System Preoperational Test is identified in Subsection 14.2.12.1.90. Table 14.2-201 shows the comprehensive list for the new added subsections. RCOL2_14.03-1

14.2.12.1 Preoperational Tests

STD COL 14.2(10) Add new item after item C.7 in DCD Subsection 14.2.12.1.90 as follows. RCOL2_14.03-1

8. Verify that local offsite fire departments utilize hose threads or adapters capable of connecting with onsite hydrants, hose couplings, and standpipe risers.

Add new subsections after DCD Subsection 14.2.12.1.111 as follow.

STD COL 14.2(10) **14.2.12.1.112 Personnel Monitors and Radiation Survey Instruments Preoperational Test**

A. Objective

1. To demonstrate the operation, indication, and alarm functions of radiological personnel monitors and radiation survey instruments.

B. Prerequisites

1. Required construction testing is completed.
2. Test instrumentation is available and calibrated.

2. Component testing and instrument calibration are completed.

3. Test instrumentation is available and calibrated.

4. Required support systems are available.

C. Test Method

1. Simulate interlock signals for each exhaust fan and verify operation and annunciation.

2. Verify that alarms and status indications are functional.

3. Verify design airflow.

D. Acceptance Criteria

1. UHS ESW pump house ventilation system operates on the proper signal (see Subsection 9.4.5).

2. All alarms annunciate properly.

14.2.13 Combined License Information

Replace the content of DCD Subsection 14.2.13 with the following.

~~STD COL 14.2(1)~~ ***14.2(1)*** ~~*Summary of test program*~~*Deleted from the DCD* DCD_14.02-8

~~This Combined License (COL) item is addressed in Subsection 14.2.1 and Appendix 14AA.~~

CP COL 14.2(2) ***14.2(2)*** *Organization and staffing*

This COL item is addressed in Subsection 14.2.2~~ and Appendix 14AA~~. DCD_14.02-8

~~CP COL 14.2(3)~~ ***14.2(3)*** ~~*Test specifications and test procedures*~~

~~*This COL item is addressed in Subsection 14.2.3 and Appendix 14AA.*~~*Deleted from the DCD.*

~~CP COL 14.2(4)~~ ***14.2(4)*** ~~*Conduct of test program*~~

~~*This COL item is addressed in Subsection 14.2.4 and Appendix 14AA.*~~*Deleted from the DCD.*

~~CP COL 14.2(5)~~ ***14.2(5)*** ~~*Review, evaluation, and approval of test results*~~

~~This COL item is addressed in Subsection 14.2.5 and Appendix 14AA.~~Deleted from the DCD. DCD_14.02-8

CP COL 14.2(6) ***14.2(6)*** ~~*Test records*~~

~~This COL item is addressed in Subsection 14.2.6 and Appendix 14AA.~~Deleted from the DCD.

CP COL 14.2(7) ***14.2(7)*** ~~*Trial testing of plant operating and emergency procedures*~~*Initial test program schedule and cross-reference of test abstracts with ITAAC*

*This COL item is addressed in Subsection*s *14.2.9, 14.2.11 and Table 14.2-202*

CP COL 14.2(8) ***14.2(8)*** ~~*Test program schedule*~~

~~This COL item is addressed in Subsection 14.2.11.~~Deleted from the DCD.

CP COL 14.2(9) ***14.2(9)*** ~~*Cross-reference between each test and ITAAC requirements*~~

~~This COL item is addressed in Subsection 14.2.11 and Table 14.2-202.~~Deleted from the DCD.

CP COL 14.2(10)
STD COL 14.2(10) ***14.2(10)*** *Site-specific test abstracts*

This *COL item is addressed in Subsections 14.2.12.1.90.C.8, 14.2.12.1.112, 14.2.12.1.113, and 14.2.12.1.114*, Table 14.2-201, and Appendix 14A. RCOL2_14.03-1

STD COL 14.2(11) ***14.2(11)*** *First-plant only test and prototype test* DCD_14.02-23

This COL item is addressed in Subsections 14.2.8.1 and 14.2.8.2.1.

STD COL 14.2(12) ***14.2(12)*** *Approved Test procedures* DCD_14.02-114

This COL item is addressed in Subsection 14.2.3

CP COL 14.2(2)
CP COL 14.2(3)
CP COL 14.2(4)
CP COL 14.2(5)
CP COL 14.2(6)

APPENDIX 14AA TEST PROGRAM DESCRIPTION

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APPENDIX 14AA

TEST PROGRAM DESCRIPTION

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APPENDIX 14AA TEST PROGRAM DESCRIPTION

14AA.1 PURPOSE

The purpose of this appendix is to provide an outline of the administrative control program used to develop and administer the ITP as defined by Section 14.2. This appendix supplements the program description in Section 14.2. The general terms the "startup organization" or "startup program" used in Section 14.2 are described as the test organization and test program, respectively, in this appendix.

14AA.2 SCOPE

This appendix describes the organizational structure of the test organization and organizational interfaces with the plant operating organization, construction organization, engineering design organization, and vendors during turnover from construction, construction installation testing, preoperational testing, and startup testing.

This appendix provides a description of the processes and controls employed for development of ITP test specifications and test procedures, test procedure performance, test results report development, test results acceptance, and test closeout. A description of the joint test group and test review group charters and membership is included. The milestone for the implementation of the ITP is shown in Table 13.4-201.

14AA.3 ORGANIZATION AND RESPONSIBILITIES

This section presents a description of the basic functional and programmatic responsibilities of organizations involved with the ITP. The final organizations, position titles, and responsibilities will be defined in the test administrative manual.

14AA.3.1 Construction

The construction organization, hereafter referred to as Construction, is responsible for installation and fabrication of the plant, performance of construction acceptance tests, and the preparation of structures, systems, and components (SSCs) for turnover to the test organization. Construction provides support to the test organization during construction installation testing, preoperational and acceptance testing, and startup testing.

14AA.3.2 Testing

The test organization, hereafter referred to as Testing, is responsible for the construction turnover process, construction installation testing, preoperational and acceptance testing, and startup testing.

The Test Manager reports to the Plant Manager and has the overall responsibility for administration of the test program, scheduling test evolutions, and staffing the test organization. The Test Manager coordinates testing activities with support organizations including plant staff, engineering, licensing, construction, and equipment vendors. DCD_14.02-8

The Construction Installation Test Manager reports to the Test Manager. The construction installation testing group is responsible for scheduling and managing the construction turnover process and timely completion of construction installation tests to ensure system readiness for preoperational and acceptance testing.

The Preoperational and Acceptance Test Manager reports to the Test Manager. The preoperational and acceptance test group is responsible for scheduling and managing preoperational and acceptance test procedure preparation, performance and closure activities. The Preoperational and Acceptance Test Manager is a member of the joint test group.

The Startup Manager reports to the Test Manager. The startup group is responsible for scheduling and managing startup test procedure preparation, performance, and closure activities for fuel load, initial criticality, low power testing, and power ascension testing. The Startup Manager is a member of the test review group.

The Test Program Manager reports to the Test Manager and is responsible for maintaining the test administrative manual, test personnel certification and qualification, and oversight of the test program administration.

Test Engineers report to their respective test group manager and are responsible for the preparation, performance and closure of test procedures.

14AA.3.3 Plant Staff

The organizational structure and responsibilities of the plant staff are described in Section 13.1. Specific responsibilities of plant staff organizations during the ITP are described below.

The Plant Manager is responsible for providing direction and guidance to the Test Manager and overall coordination of test support during the ITP. The Plant Manager provides the final approval of startup test procedures and startup test results and authorizes proceeding to higher power levels following completion of major power plateau testing.

The Director, Operations, and the Operations Department, hereafter referred to as Operations, are responsible for the coordination of operator support with the test organization during the ITP.

The Director, Maintenance, and the Maintenance Department, hereafter referred to as Maintenance, are responsible for performing preventative and corrective

maintenance on mechanical and electric equipment, instrumentation and controls following completion of construction installation testing.

DCD_14.02-8

The Nuclear Training Manager is responsible for directing the nuclear training programs for test personnel in order to provide personnel with the requisite skills and knowledge for effectively performing ITP test activities.

14AA.3.4 Joint Test Group

The joint test group is comprised of certain station supervisory and technical personnel and is charged with reviewing preoperational test activities and oversight of the construction installation testing process. The joint test group advises the Test Manager on the disposition of those items reviewed.

The primary function of the joint test group is the review and approval of preoperational test procedures, procedure revisions, and test results. The joint test group includes managers, supervisors, or technical representatives from the organizations listed below.

- Testing
- Operations
- Nuclear Engineering and Support
- Mitsubishi Heavy Industries, Ltd. (MHI) and/or Mitsubishi Nuclear Energy Systems, Inc. (MNES) (for preoperational testing performed on the nuclear steam support system and associated auxiliary systems)
- Quality Assurance

The members and their alternates, including the chairman, are designated in writing by the appropriate level of cognizant management.

In addition to the above, representatives of other organizations participate as requested by the chairman.

14AA.3.5 Test Review Group

The test review group is comprised of certain station supervisory and technical personnel. The test review group functions as a subcommittee of the Station Operations Review Committee for initial startup testing matters. The test review group is charged with reviewing initial startup test activities and advising the operations review committee on the disposition of those items reviewed. The operations review committee may perform the test review group functions in lieu of the test review group. The primary function of the test review group is the review and approval of initial startup program test procedures, procedure revisions, and test results.

The test review group includes managers, supervisors, or technical representatives from the organizations listed below:

DCD_14.02-8

- ~~Testing~~
- ~~Operations~~
- ~~Nuclear Engineering and Support~~
- ~~MHI and/or MNES~~
- ~~Quality Assurance~~

~~The members and their alternates, including the chairman, are designated in writing by the Plant Manager and appropriate level of cognizant management.~~

~~In addition to the above, representatives of other organizations participate as requested by the chairman.~~

~~14AA.4 TEST PROGRAM~~

~~14AA.4.1 Construction Installation Tests~~

~~During plant installation and erection, Construction performs construction acceptance tests to verify proper installation and code compliance. These tests include hydrostatic tests, HVAC integrity tests, and cable integrity tests. Some of these tests also satisfy the test requirement identified in ITAAC such as hydrostatic, pressure integrity and preoperational nondestructive examination (NDE) requirements.~~

~~Performance of construction installation tests are controlled and directed by Testing. This phase of testing includes verification that the plant is configured in accordance with the design by piping walkdowns, equipment verifications, and electrical scheme checks. Component level testing is performed on plant equipment to verify functionality and controls interface, including initial energization of electrical distribution systems, motor rotation verification, instrument calibrations, control device setups, and proper functionality. System cleanliness is established through flushing, air blows, and steam blows, etc. and verified to meet RG 1.37 cleanliness criteria. The guidance provided in RG 1.68 Appendix C, Section 1.a is considered in development of construction installation test requirements.~~

~~Construction installation testing is performed using approved procedures based on equipment provider specifications, installation/setup manuals, applicable industry standards, engineering design, and system operating requirements. Procedures are developed for specific equipment types or repetitive activities, where possible, and used to perform testing on multiple components, with each usage documented independently.~~

~~The performance of these tests is controlled by Testing. The results of these tests are reviewed and approved by the Construction Installation Test Manager or designee. Construction installation tests which satisfy ITAAC requirements are identified.~~

Specification of required construction installation tests is identified for each system and tracked to completion as prerequisites for preoperational tests. DCD_14.02-8

This process is defined and procedurally controlled in the test administrative manual, including controls for the preparation, review, approval, closeout, and records retention of construction installation test procedures.

14AA.4.2 Acceptance Testing Program

System level and integrated testing performed on systems or components that are outside of the scope of the ITP and, therefore, not controlled as preoperational or startup tests are identified as acceptance tests. Although outside of the scope of the ITP as defined in Section 14.2, these tests are prepared and performed by Testing with appropriate level of reviews and approvals.

This process is defined and procedurally controlled in the test administrative manual, including controls for the preparation, review, approval, closeout, and records retention of test procedures. Acceptance test activities which satisfy ITAAC requirements are identified.

14AA.4.3 Test Administrative Manual

The test administrative manual consists of administrative procedures that implement the requirements specified in Section 14.2 and this appendix. The test administrative manual includes procedures for the following:

- Test program administration (provides a description of the test organization, roles, and responsibilities of its members, applicability of the test program and interfacing organizations and responsibilities)
- Joint test group and test review group review committees (charter, membership, and responsibilities)
- Construction turnover process
- Preparation, review, and approval of construction installation test procedures
- Preparation, review, and approval of preoperational, acceptance and startup test procedures
- Conduct of testing, including test log entries, pre-test briefings, test change requests, test deficiency reports, and retests
- Test closure process, including test data packages, test results reports, test open items, and records preparation
- Control of post-modification and post-maintenance testing
- Test engineer and supervisor certification and qualification

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14AA.5 JURISDICTIONAL CONTROLS

14AA.5.1 Turnover from Construction to Testing

Transfer of jurisdictional control of the plant occurs in a phased approach as the installation, and construction acceptance tests, of plant equipment, systems, subsystems or areas are completed by Construction. The transfer of jurisdictional control from Construction to Testing, known as construction turnover, is a formal process utilizing turnover scoping drawings to define turnover scope and boundaries. Turnover readiness is verified by Testing through walkdowns, punchlisting, and review of construction records.

During the turnover process, systems and components are reviewed for completeness, installation damage, and conformance with appropriate installation and/or design documents. Outstanding construction document and test deficiencies are identified and controlled prior to fuel load. Hydrostatic, pressure integrity and preoperational NDE testing which satisfies ITAAC requirements are identified.

Administrative control of the construction turnover process and formal acceptance of turnovers is controlled by Testing.

This process includes administrative controls to transfer jurisdictional control back to construction for rework or modifications. Upon completion of construction work, the impacts of work performed on completed testing, or additional testing required due to modifications, are identified, and tracked to completion.

This process is defined and procedurally controlled in the test administrative manual.

14AA.5.2 Turnover from Test Organization to Operations

Jurisdictional control is transferred to Operations upon the acceptance of preoperational or acceptance testing. Preoperational test activities which satisfy ITAAC test requirements must be completed prior to transfer of jurisdictional control to the plant operating staff. This process is defined and procedurally controlled in the test administrative manual.

14AA.6 WORK CONTROLS

Plant administrative procedures establish controls for the issuance of work permits, tracking of work permits to completion and maintaining plant status control during all phases of the ITP.

Testing will review, authorize field performance, and review the results of all field work on SSCs turned over from construction to ensure impacts on testing and plant conditions are carefully monitored and controlled and the as-tested status of SSCs is maintained.

Configuration control of SSCs turned over to Testing is established and maintained following turnover during all phases of testing and maintenance.

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14AA.7 TEST SPECIFICATIONS

Test specifications provide the technical requirements and acceptance criteria that are to be incorporated into the preoperational and startup test procedures. Upon approval, they are issued as controlled documents. Approved test specifications are required to be available during the preparation and review of preoperational and startup test procedures.

In addition to the requirements in this section, test specifications affecting the safety-related and non-safety related SSCs within the scope of the reliability assurance program are prepared and reviewed in accordance with Subsection 17.4.4.

The preparation, review, and approval of test specifications is defined and procedurally controlled by the engineering design organization responsible for the system or systems.

14AA.7.1 Preparation of Test Specifications

Test specifications are prepared by the engineering design organization responsible for the system or systems(s).

Test specifications include the following:

- Test objectives
- Test prerequisites
- Initial conditions and plant configuration during testing
- Special considerations to be addressed during preparation or performance of testing
- Acceptance criteria
- Test methods
- Data collection requirements
- Test results evaluation methods (as applicable)
- Test restoration requirements (as applicable)

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14AA.8 TEST PROCEDURES

The preparation, review, approval, performance of test procedures is defined and procedurally controlled in the test administrative manual.

In addition to the requirements in this section, test procedures affecting the safety-related and nonsafety-related SSCs within the scope of the reliability assurance program are prepared and reviewed in accordance with Subsection 17.4.4.

14AA.8.1 Preparation of Test Procedures

Test procedures are prepared based on formats specified by the test administrative manual, consistent with Subsection 14.2.3.5. These standard formats help ensure that each procedure contains the information and instructions required to satisfactorily perform and document the test. Preoperational test activities which satisfy ITAAC test requirements are identified in the test procedures.

14AA.8.2 Review and Approval of Test Procedures

Test procedures are, at a minimum, reviewed by MHI or MNES engineering, Testing, Operations, Quality Assurance, Maintenance, and Licensing.

Preoperational test procedures are reviewed and approved by the joint test group.

Acceptance test procedures are approved by the Test Manager.

Startup test procedures are approved by the test review group and the Plant Manager.

Revisions to test procedures are reviewed and approved by the same organizations and committees that initially approved the document.

Preoperational and startup test procedures are provided to the NRC for review in accordance with Subsection 14.2.3.

14AA.9 CONDUCT OF TESTING

The test administrative manual includes controls for the performance of test procedures.

14AA.9.1 Configuration Controls

Configuration controls within test procedures provide for documenting the installation and removal of test jumpers, lifted leads, test equipment and off-normal system configurations and ensure restoration to a prescribed configuration at the conclusion of the test.

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14AA.9.2 Test Coordination

Testing is responsible for coordination of testing activities, including the completion of test prerequisites, assessment of the potential impacts of simultaneous tests on multiple systems, test boundaries, and off-normal conditions during testing.

The test administrative manual includes controls relating to the methods used for initial review of individual parts of multiple tests (e.g., hot functional testing) in order to assure coordination of plant conditions related to these tests.

14AA.9.3 Procedure Control

Only one official test copy will be issued for use in the field. Test change requests are immediately incorporated into the official test copy.

14AA.9.4 Procedure Changes

Changes that are required to test procedures during test performance are documented on a test change request form. Major changes which affect the intent of the test or affect test acceptance criteria are reviewed and approved by the original approvers of the procedure. Changes not classified as major are reviewed and approved by the cognizant test supervisor. Changes are incorporated into the official test copy prior to the resumption of testing. Test change requests are numbered uniquely, logged, and maintained with the working copy of the test.

14AA.9.5 Procedure performance

The test administrative manual includes controls for documenting completion of prerequisites, pre-test briefings, test interruptions and restarts, retesting, documenting of test discrepancies, continuation of testing following discovery of test discrepancies, shift turnovers, and required entries into test logs.

14AA.9.6 Test Discrepancies

Test discrepancies are documented on test discrepancy reports, which include a statement of the discrepancy, recommended, and completed corrective actions, retesting requirements and results. Approval requirements for continuation of testing, corrective actions, and closure are specified in the test administrative manual. Test discrepancies are noted at the appropriate test step, logged, and tracked to closure within the Official Test Copy of the test procedure.

14AA.10 TEST RESULTS

Following each major phase of the test program, test results and/or test status are reviewed to ensure that required tests have been performed and that the test results have been evaluated.

This evaluation ensures that required systems are operating properly and that testing for the next major phase can be conducted in a safe and efficient manner. This type of review is performed to the extent required before major test phases such as fuel load, initial criticality, and power escalation. During the power escalation phase, review and evaluation of startup test procedure results is completed for each major power plateau prior to proceeding with power ascension testing to the next plateau. DCD_14.02-8

14AA.10.1 Review and Approval of Test Results Reports

Following completion of a particular test, a test engineer assembles the test data package for evaluation. A test results report is prepared and included in the test data package. The test results report summarizes the scope and objectives of the test, test deficiencies and their resolution, test changes or revisions, and test acceptance criteria and results showing that each criterion was satisfied.

Construction installation tests do not require test results reports. Results are reviewed and approved by the cognizant test supervisor (approval of results for ITAAC closure is performed under a separate program).

Acceptance test results are reviewed by the Nuclear Engineering and Support organization and approved by the Preoperational and Acceptance Test Manager (approval of results for ITAAC closure is performed under a separate program).

Preoperational test results are reviewed and approved by appropriate members of the joint test group (approval of results for ITAAC closure is performed under a separate program).

Startup test results are reviewed and approved by appropriate members of the test review group.

Each test data package is reviewed to ensure that the test has been performed in accordance with the written approved procedure and that required data, checks, and signatures have been properly recorded and that system performance meets the approved acceptance criteria.

Completed preoperational test activities which satisfy ITAAC test requirements are identified for ITAAC closure documentation.

Deficiencies identified in the review process are resolved to the satisfaction of the appropriate review group. If the evaluation indicates that deficiencies in the test method are responsible for unsatisfactory test results, the test procedure is modified accordingly before retesting is initiated. Whenever an evaluation of test results indicates deficiencies in system performance, the problem is referred to the appropriate engineering organization for evaluation.

The responsibility for final approval of preoperational test results rests with the Test Manager.

~~The responsibility for final approval of initial startup test results and authorization to proceed to higher power level following completion of major power plateau testing (i.e., 0-5 percent, 50 percent and 75 percent) rests with the Plant Manager.~~ DCD_14.02-8

~~This process is defined and procedurally controlled in the test administrative manual.~~

~~14AA.10.2 Open Deficiencies~~

~~Unresolved test deficiencies, open items requiring testing, or deficiencies identified with test methods or conduct that are identified during the test procedure closure process shall be identified as test open items.~~

~~The resolution of test open items shall be reviewed and approved by the joint test group for preoperational tests and the test review group for startup tests.~~

~~This process is defined and procedurally controlled in the test administrative manual.~~

~~14AA.10.3 Test Closure and Test Records~~

~~Completed test packages are assembled for submittal as life of plant records in accordance with Subsection 14.2.6. The assembled test package includes:~~

- ~~The completed test procedure with all attachments, data sheets, test logs, test deficiency reports, and test change requests~~
- ~~Data collection records~~
- ~~Test specifications referenced by the procedure~~
- ~~Approved test results report~~

~~This process is defined and procedurally controlled in the test administrative manual.~~

~~14AA.11 CERTIFICATION AND QUALIFICATION OF TEST PERSONNEL~~

~~14AA.11.1 Test Engineer Certification and Qualification~~

~~Test engineer qualification is accomplished within the framework of the QAPD described in Chapter 17. Records shall be maintained providing evidence of education, experience, plant specific training, and level of certification.~~

~~14AA.11.2 Training~~

~~Test engineers, supervisors and managers are indoctrinated in the use of applicable administrative procedures, test procedures and familiarized with applicable quality assurance requirements.~~

~~Test engineers, supervisors, and managers complete systems training to provide familiarization with system and component operations unique to the design of pressurized water reactor (PWR) nuclear power plants.~~ DCD_14.02-8

~~14AA.11.3 Supervisory Qualifications~~

~~Personnel who are responsible for the review and approval of preoperational or initial startup test procedures and results, and who direct or supervise the conduct of preoperational or initial startup tests shall meet the qualification and training requirements of RG 1.8 Revision 3, May 2000. Qualification of supervisors and managers is accomplished within the framework of the QAPD described in Chapter 17.~~

Chapter 15

Chapter 15 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R

Chapter 16

Chapter 16 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R

Chapter 17

Chapter 17 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
CTS-00490	17.3	17.3-1	Editorial correction	Change description about quality assurance program.	0

Chapter 18

Chapter 18 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R

Chapter 19

Chapter 19 Tracking Report Revision List

Change ID No.	Section	FSAR Rev. 0 Page	Reason for change	Change Summary	Rev. of FSAR T/R
MAP-19-001	19.1.5.1.1	19.1-8 19.3-1	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 19.3(5)	0
MAP-19-002	19.2.5	19.2-1 19.3-1	Deletion of COL item. Letter MHI Ref:UAP-HF-08259, dated on Nov.7, 2008	Delete COL 19.3(6)	0
CTS-00491	ACRONYMS AND ABBREVIATIONS	19-v	Erratum	Change “Westuinghouse” to “Westinghouse”.	0
CTS-00714	19.2.5 19.2.7 19.3.3	19.2-1 19.2-4 19.3-1	Restoration of COL item. Letter MHI Ref: UAP-HF-09305 dated June10,2009	Restoration COL 19.3(6)	3