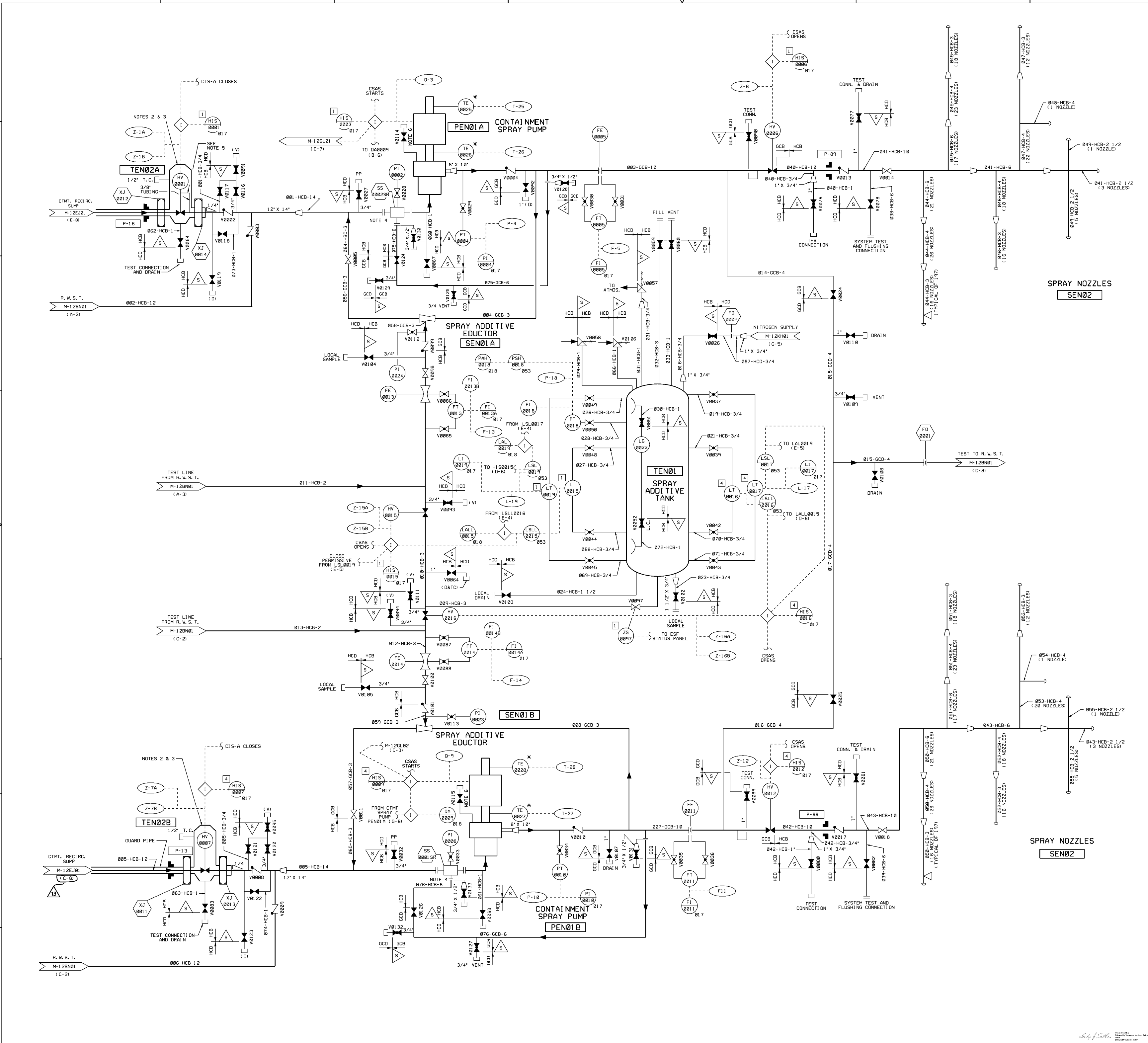


USAR FIG. 6.2.2-1-00

NOTES

1. DELETED.
2. DELETED.
3. SEAL WELDED CAP TO BE INSTALLED ON 1/2 INCH TEST CONNECTION AFTER HYDROTEST HAS BEEN PERFORMED.
4. REMOVABLE SPOOL WITH SPACER RING INSTALLED. (REPLACEMENT FOR START-UP STRAINER)
5. VALVE ENHV0001 IS EQUIPPED WITH AN ANTI PRESSURE LOCKING BYPASS. SEE M-225-00111.
6. VENDOR SUPPLIED/SKID MOUNTED SEAL PIPING (REF. M-088-00082). VENT VALVES ENV0114 & ENV0115 ADDED PER CHG. PKG. 09900.

ESSENTIAL DRAWING

⊗ REVISED / ○ ISSUED	INCORPORATED CHG. DOC. CR 00083426	CHANGE PKG. NO.	
THIS DWG. SUPERSEDED BY	REV.	THIS DWG. SUPERSEDES	REV.
REVISION NOTES:			

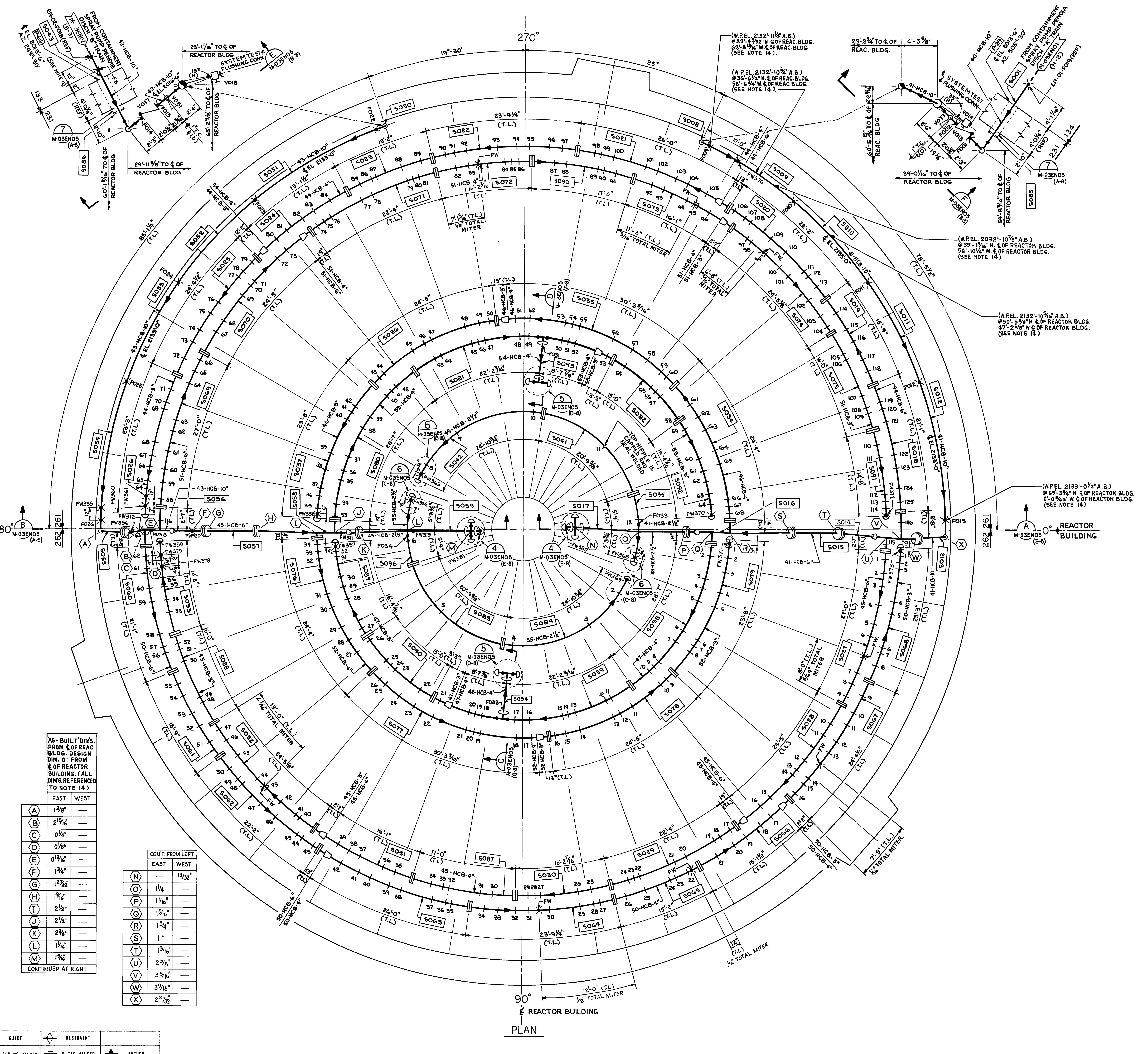
WOLF CREEK NUCLEAR OPERATING CORPORATION — ELECTRONIC APPROVAL

PIPING AND INSTRUMENTATION DIAGRAM CONTAINMENT SPRAY SYSTEM

SCALE	DRAWING NUMBER	SHEET	REV
NONE	M-12EN01		13

34X44 E SIZE

M-12EN01-1-13



NOTES:

1. FOR GENERAL NOTES AND REFERENCES SEE DRAWING M-03EN01.
2. FOR VALVE LIST SEE DRAWING M-03EN05.
3. ALL PIPE TERMINATIONS SHALL BE PIPE CAP OF THE SAME NOMINAL PIPE SIZE.
4. SPRAY NOZZLE, SEN02, TO BE SPRAYING SYSTEMS CO. NOZZLE NO. 15215-1C304556.3.
5. TEMPERATURE
   A) INJECTION - 100°F.
   B) RECIRCULATION - 270°F
6. WORK THIS DRAWING WITH DRAWINGS M-03EN01 M-03EN02, M-13EN04, & M-03EN05.
7. FOR REACTOR BLDG. PENETRATION DETAILS, REFER TO CIVIL DRAWINGS C-0L2903 AND C-0L2904.
8. ALL FLANGES ON M-03EN03 & M-13EN04 WILL BE 150# RAISED FACE SLIP ON.
9. ALL SPOOLS AND FIELD WELDS ON DRAWINGS M-03EN03 & M-03EN05 ARE SEQUENTIALLY NUMBERED AND WILL CARRY M-03EN03 AS THEIR PREVIX.
10. WHERE FIELD WELD LOCATIONS ARE NOT DIMENSIONED, USE RANDOM 20 FT. LENGTHS TO MAINTAIN OVERALL DIMENSIONS.
11. DELETED △2
12. SCH. 80 PUP PIECE COUNTER BORED AT ENDS TO SCH. 80S.
13. FOR AS BUILT ELEVATIONS AND RADII OF CONTAINMENT SPRAY RINGS, SEE DWG. M-13EN04 (Q).
14. ELEVATIONS, DIMENSIONS & LOCATING DIMENSIONS REFERENCED TO THIS NOTE REFLECT THE "AS-BUILT" (A.B.) CONDITION. ASSOCIATED DIMENSIONS THAT ARE WITHIN ALLOWABLE TOLERANCES HAVE NOT BEEN ADJUSTED.

"AS-BUILT" DIM'S. FROM ℄ OF REAC. BLDG. DESIGN DIM. 0" FROM ℄ OF REACTOR BUILDING. (ALL DIM'S. REFERENCED TO NOTE 14)

	EAST	WEST
A	1⅜"	—
B	2 15/16"	—
C	0¼"	—
D	0⅛"	—
E	0 13/16"	—
F	1¾"	—
G	1 27/32"	—
H	1 9/16"	—
I	2½"	—
J	2½"	—
K	2⅜"	—
L	1 1/16"	—
M	1 5/16"	—

CONTINUED AT RIGHT

CON'T. FROM LEFT

	EAST	WEST
N	—	13/32"
O	1¼"	—
P	1 1/16"	—
Q	1 5/16"	—
R	1¾"	—
S	1"	—
T	1 3/16"	—
U	2⅜"	—
V	3 5/16"	—
W	3 9/16"	—
X	2 21/32"	—

GUIDE	RESTRAINT	
SPRING HANGER	RIGID HANGER	ANCHOR
DIRECTION OF RESTRAINT	DIRECTION OF EXPANSION	SNUBBER

REV. NO.	ELEC.	CONT. SYS.	MECH.	CIVIL	P.D. LAYOUT	P.D. ENG.	ARCH.
2	N/R	N/R	N/R	N/R	[illegible]	[illegible]	N/R
1	N/R	N/R	N/R	N/R	[illegible]	[illegible]	N/R
0	N/R	N/R	N/R	N/R	[illegible]	[illegible]	N/R

COORDINATION SIGN-OFF

DOCUMENT IDENTIFICATION M-13EN03 (Q)

△3 USAR FIG. 6.2.2-2-01

ESSENTIAL DRAWING

⊗ REVISED ○ ISSUED INCORPORATED CHG. DOC. CHANGE PKG. NO.

THIS DWG. SUPERSEDED BY REV. THIS DWG. SUPERSEDES REV.

REVISION NOTES: REF. CR 2007-000952

WOLF CREEK NUCLEAR OPERATING CORPORATION — ELECTRONIC APPROVAL

PIPING ORTHOGRAPHIC
CONTAINMENT SPRAY SYSTEM
REACTOR BUILDING "A" & "B" TRAINS

SCALE	DRAWING NUMBER	SHEET	REV
NONE	M-13EN03		03

34X44 E SIZE

TABLE FOR PIPE NOZZLES

	SEQ. NO.	DET. NO.	POS. ON PIPE	PIPE SIZE	AZ.	℄ EL.	SEE NOTE 4
50-HCB-3" LOCATION-262 5TH RING	1	1	"B"	3"	4°-27'	EL.2165'-8"	-14°
	2		"A"		5°-27'		+16°
	3		"C"		6°-26'		-59°
	4		"B"		11°-25'		-14°
	5		"A"		13°-23'		+19°
	6		"C"		18°-22'		-58°
	7		"B"		19°-22'		-11°
	8		"A"		21°-22'		+17°
	9		"B"		26°-21'		-16°
	10		"A"		29°-18'		+15°
	11		"C"		31°-17'		-61°
	12		"B"		34°-16'		-17°
	13		"A"		36°-15'		+15°
	14		"B"		41°-15'		-19°
	15		"C"		42°-15'		-63°
	16		"A"	3"	44°-14'		+11°
50-HCB-4" LOCATION-262 5TH RING	17		"B"	4"	49°-10'		-17°
	18		"A"		51°-10'		+14°
	19		"C"		54°-10'		-62°
	20		"B"		56°-8		-16°
	21		"A"		59°-9'		+15°
	22		"B"		64°-10'		-15°
	23		"A"		66°-10'		+13°
	24		"C"		67°-10'		-60°
	25		"B"		71°-10'		-16°
	26		"A"		74°-11'		+14°
	27		"C"		78°-10'		-60°
	28		"B"		79°-10'		-16°
	29		"A"		81°-10'		+15°
	30		"B"		86°-10'		-15°
	31		"A"		89°-10'		+16°
	32		"C"		91°-10'		-57°
	33		"B"		94°-11'		-13°
	34		"A"		96°-11'		+17°
	35		"B"		101°-11'		-14°
	36		"C"		102°-11'		-58°
	37		"A"		104°-11'		+17°
	38		"B"		109°-10'		-14°
	39		"A"		111°-10'		-16°
	40		"C"		114°-8'		-58°
	41		"B"		116°-7'		-13°
	42		"A"	4"	119°-7'		+16°
50-HCB-6" LOCATION-262 5TH RING	43		"B"	6"	124°		-16°
	44		"A"		126°		+14°
	45		"C"		127°		-61°
	46		"B"		131°		-15°
	47		"A"		134°		+15°
	48		"B"		138°		-15°
	49		"C"		139°		-60°
	50		"A"		141°		+14°
	51		"B"		145°-55'		-16°
	52		"A"		148°-55'		+13°
	53		"C"		150°-55'		-60°
	54		"b"		153°-54'		-15°
	55		"A"		155°-54'		+15°
	56		"B"		160°-55'		-17°
	57		"C"		162°		-61°
	58		"A"		164°		+13°
	59		"B"		169°		-15°
	60		"A"		171°		+14°
	61		"C"		174°		-61°
	62		"B"		176°		-16°
	63	1	"A"	6"	179°	EL.2165'-8"	+20°
44-HCB-3" LOCATION-261 5TH RING	64	1	"B"	3"	184°-36'	EL.2165'-8"	-15°
	65		"A"		185°-36'		+12°
	66		"C"		186°-37'		-58°
	67		"B"		191°-36'		-13°
	68		"A"		193°-35'		+15°
	69		"C"		198°-34'		-58°
	70		"B"		199°-34'		-15°
	71		"A"		201°-34'		+16°
	72		"B"		206°-37'		-14°
	73		"A"		209°-31'		+16°
	74		"C"		211°-30'		-60°
	75		"B"		214°-29'		-14°
	76		"A"		216°-29'		+15°
	77		"B"		221°-27'		-16°
	78		"C"		222°-26'		-60°
	79		"A"	3"	224°-26'		+16°
44-HCB-4" LOCATION-261 5TH RING	80		"B"	4"	229°-25'		-13°
	81		"A"		231°-24'		+17°
	82		"C"		234°-24'		-58°
	83		"B"		236°-23'		-10°
	84		"A"		238°-38'		+12°
	85		"B"		244°-22'		-14°
	86		"A"		246°-22'		+16°
	87		"C"		247°-21'		-60°
	88		"B"		251°-20'		-14°
	89		"A"		254°-19'		+15°
	90		"C"		258°-16'		-60°
	91		"B"		259°-16'		-14°
	92		"A"		261°-16'		+15°
	93		"B"		266°-14'		-14°
	94		"A"		269°-14'		+17°
	95		"C"		271°-13'		-59°
	96		"B"		274°-12'		-14°
	97		"A"		276°-13'		+16°
	98		"B"		281°-12'		-12°
	99		"C"		282°-12'		-57°
	100		"A"		284°-13'		+19°
	101		"B"		289°-13'		-13°
	102		"A"		291°-13'		+18°
	103		"C"		294°-15'		-58°
	104		"B"		296°-16'		-12°
	105		"A"	4"	299°-16'		+19°
44-HCB-6" LOCATION-261 5TH RING	106		"B"	6"	304°-11'		-16°
	107		"A"		306°-12'		+12°
	108		"C"		307°-12'		-61°
	109		"B"		311°-11'		-15°
	110		"A"		314°-11'		+12°
	111		"B"		318°-10'		-16°
	112		"C"		319°-11'		-60°
	113		"A"		321°-11'		+13°
	114		"B"		326°-9'		-16°
	115		"A"		329°-9'		+14°
	116		"C"		331°-8'		-60°
	117		"B"		334°-10'		-17°
	118		"A"		336°-9'		+13°
	119		"B"		341°-8'		-15°
	120		"C"		342°-8'		-60°
	121		"A"		344°-9'		+15°
	122		"B"		349°-8'		-15°
	123		"A"		351°-9'		+15°
	124		"C"		354°-10'		-59°
	125		"B"		356°-9'		-15°
	126	1	"A"	6"	359°-12'	EL.2165'-8"	+18°

45-HCB-6" LOCATION-262 4TH RING	1	1	"C"	6"	4°-30'	EL.2170'-3"	-60°
	2	3	"H"		7°		-30°
	3	2	"E"		9°		+10°
	4	1	"C"		12°		-60°
	5	3	"H"		15°		-29°
	6	2	"E"		17°		+9°
	7	3	"H"		23°		-27°
	8	2	"E"		25°		+11°
	9	1	"C"		27°		-58°
	10	3	"H"		32°-11'		-27°
	11	2	"E"		34°-12'		+9°
	12	3	"H"		39°-11'		-29°
	13	2	"E"		41°-20'		+9°
	14	1	"C"		42°-14'		-59°
	15	3	"H"		47°-13'		-28°
	16	2	"E"	6"	49°-13'		+10°
45-HCB-4" LOCATION-262 4TH RING	17	3	"H"	4"	55°-9'		-29°
	18	2	"E"		57°-9'		+8°
	19	1	"C"		58°-9'		-59°
	20	3	"H"		63°-9'		-26°
	21	2	"E"		65°-9'		+8°
	22	3	"H"		71°-9'		-27°
	23	1	"C"		72°-9'		-59°
	24	2	"E"		73°-10'		+9°
	25	3	"H"		79°-9'		-29°
	26	2	"E"		81°-9'		+10°
	27	3	"H"		87°-11'		-26°
	28	1	"C"		88°-11'		-60°
	29	2	"E"		89°-11'		+8°
	30	3	"H"		95°-11'		-26°
	31	2	"E"		97°-11'		+10°
	32	1	"C"		102°-10'		-58°
	33	3	"H"		103°-10'		-28°
	34	2	"E"		105°-10'		+8°
	35	3	"H"		111°-7'		-27°
	36	2	"E"		113°-6'		+11°
	37	1	"C"		117°-4'		-55°
	38	3	"H"		119°		-29°
	39	2	"E"	4"	121°		+9°
45-HCB-3" LOCATION-262 4TH RING	40	3	"H"	3"	128°		-26°
	41	2	"E"		129°		+10°
	42	1	"C"		131°-46'		-57°
	43	3	"H"		134°-53'		-27°
	44	2	"E"		136°-54'		+12°
	45	3	"H"		142°-50'		-27°
	46	2	"E"		144°-49'		+10°
	47	1	"C"		146°-49'		-55°
	48	3	"H"		151°-46'		-26°
	49	2	"E"		152°-45'		+10°
	50	3	"H"		158°-42'		-28°
	51	2	"E"		160°-42'		+10°
	52	1	"C"		161°-43'		-57°
	53	3	"H"		166°-43'		-27°
	54	2	"E"		168°-43'		+10°
	55	3	"H"		174°-44'		-28°
	56	1	"C"		175°-46'		-57°
	57	2	"E"	3"	176°-26'	EL.2170'-3"	+10°
51-HCB-6" LOCATION-261 4TH RING	58	1	"C"	6"	184°-30'	EL.2170'-3"	-60°
	59	3	"H"		187°		-29°
	60	2	"E"		189°		+7°
	61	1	"C"		192°		-58°
	62	3	"H"		195°		-30°
	63	2	"E"		197°		+7°
	64	3	"H"		203°		-30°
	65	2	"E".		205°		+6°
	66	1	"C"		207°		-60°
	67	3	"H"		212°-8'		-28°
	68	2	"E"		214°-8'		+8°
	69	3	"H"		219°-7'		-28°
	70	2	"E"		221°-7'		+6°
	71	1	"C"		222°-8'		-59°
	72	3	"H"		227°-7'		-28°
	73	2	"E"	6"	229°-8'		+8°
51-HCB-4" LOCATION-261 4TH RING	74	3	"H"	4"	235°-8'		-29°
	75	2	"E"		237°-7'		+8°
	76	1	"C"		238°-7'		-60°
	77	3	"H"		243°-7'		-30°
	78	2	"E"		245°-8'		+7°
	79	3	"H"		251°-7'		-30°
	80	1	"C"		252°-7'		-60°
	81	2	"E"		253°-7'		+7°
	82	3	"H"		259°-5'		-30°
	83	2	"E"		261°-5'		+10°
	84	3	"H"		267°		-30°
	85	1	"C"		268°		-60°
	86	2	"E"		269°		+8°
	87	3	"H"		275°		-30°
	88	2	"E"		277°		+6°
	89	1	"C"		282°		-63°
	90	3	"H"		283°		-30°
	91	2	"E"		285°		+7°
	92	3	"H"		291°		-31°
	93	2	"E"		293°-5'		+7°
	94	1	"C"		297°-5'		-62°
	95	3	"H"		299°-6'		-32°
	96	2	"E"	4"	301°-7'		+6°
51-HCB-3" LOCATION-261 4TH RING	97	3	"H"	3"	308°		-32°
	98	2	"E"		309°		+7°
	99	1	"C"		312°-5"		-65°
	100	3	"H"		315°		-32°
	101	2	"E"		317°		+6°
	102	3	"H"		323°		-33°
	103	2	"E"		325°		+5°
	104	1	"C"		327°		-60°
	105	3	"H"		332°		-32°
	106	2	"E"		333°		+6°
	107	3	"H"		339°		-30°
	108	2	"E"		341°		+8°
	109	1	"C"		342°		-61°
	110	3	"H"		347°		-33°
	111	2	"E"		349°		+4°
	112	3	"H"		354°-55'		-32°
	113	1	"C"		355°-55'		-62°
	114	2	"E"	3"	356°-55'	EL.2170'-3"	+3°
52-HCB-3" LOCATION-262 3RD RING	1	1	"D"	3"	6°	EL.2195'-3"	-3°30'
	2	2	"F"		8°		-38°
	3	1	"C"		12°		-57°
	4	1	"D"		18°		-5°
	5	2	"F"		22°		-38°
	6	1	"D"		32°		-5°
	7	1	"C"		34°		-56°
	8	2	"F"		36°		-35°30'
	9	1	"D"		46°		-4°30'
	10	2	"F"		48°		-39°30'
	11	1	"C"		58°		-57°30'
	12	1	"D"		62°		+2°
	13	2	"F"		64°		-50°
	14	1	"D"		74°		-2°
	15	2	"F"		78°		-38°30'
	16	1	"C"	3"	82°	EL.2195'-3"	-57°

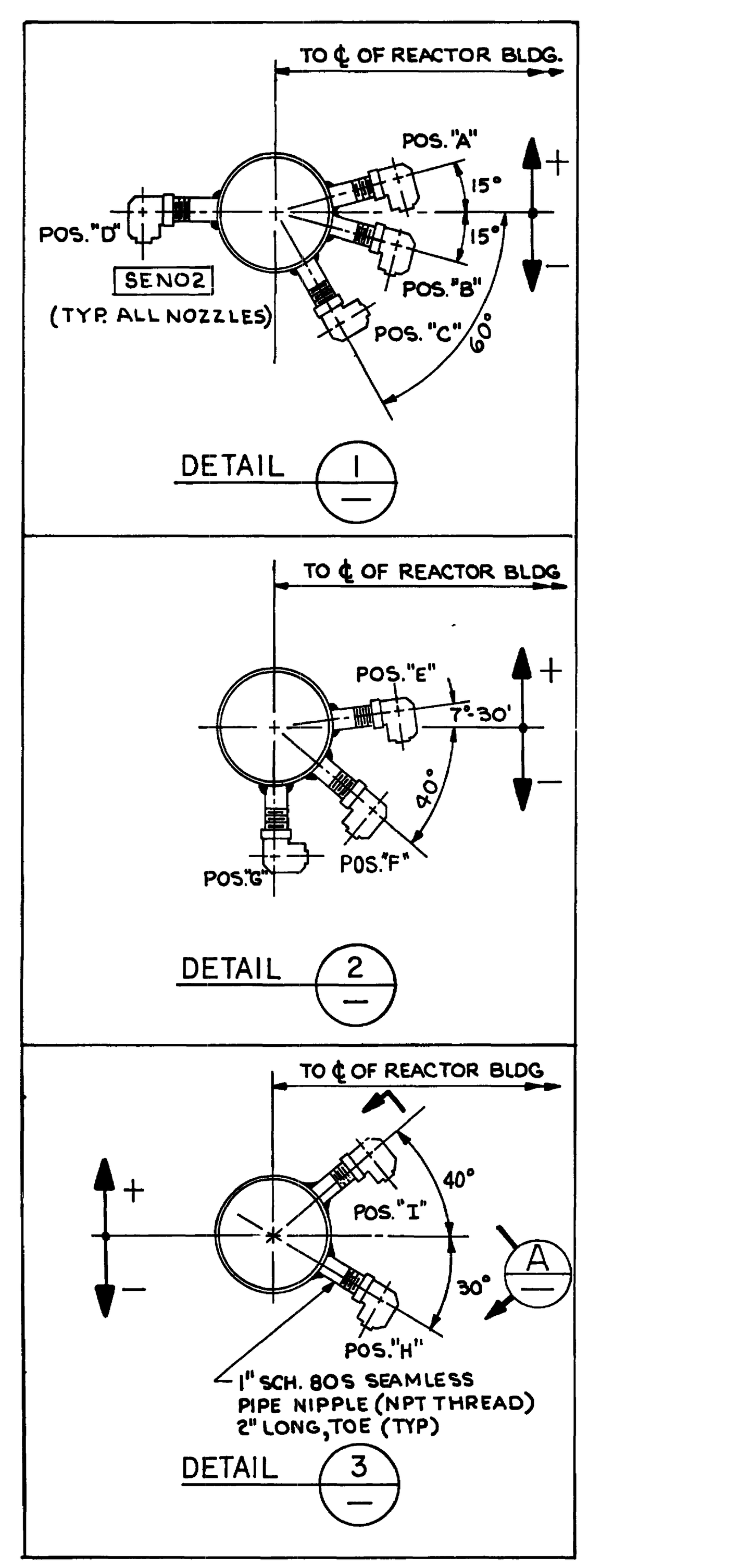
52-HCB-4" LOCATION-262 3RD RING	17	1	"D"	4"	88°	EL.2195'-3"	-0°30'
	18	2	"F"		92°		-36°30'
	19	1	"D"		101°-51'		-1°
	20	1	"C"		104°		-56°
	21	2	"F"		106°		-37°30'
	22	1	"D"		116°		-1°
	23	2	"F"		121°-49'		-37°
	24	1	"C"		126°-48'		-56°30'
	25	1	"D"		131°-47'		-1°
	26	2	"F"		133°-48'		-37°30'
	27	1	"D"		143°-49'		-3°-30'
	28	2	"F"		147°-49'		-38°
	29	1	"C"		151°-48'		-59°
	30	1	"D"		157°-47'		-2°30'
	31	2	"F"		161°-46'		-40°
	32	1	"D"		171°-45'		-3°
	33	2	"F"		173°-45'		-38°30'
	34	1	"C"	4"	175°-44'	EL.2195'-3"	-58°30'
46-HCB-3" LOCATION-261 3RD RING	35	1	"D"	3"	185°-13'	EL.2195'-3"	+5°
	36	2	"F"		187°-20'		-36°
	37	1	"C"		191°-21'		-56°
	38	1	"D"		197°-23'		-4°
	39	2	"F"		201°-23'		-37°30'
	40	1	"D"		211°-25'		-5°
	41	1	"C"		213°-26'		-56°30'
	42	2	"F"		215°-26'		-36°
	43	1	"D"		225°-29'		-3°
	44	2	"F"		227°-29'		-38°30'
	45	1	"C"		237°-35'		-58°
	46	1	"D"		241°-36'		-4°
	47	2	"F"		243°-38'		-38°30'
	48	1	"D"		253°-43'		-4°
	49	2	"F"		257°-45'		-37°30'
	50	1	"C"	3"	261°-45'		-59°30'
46-HCB-4" LOCATION-261 3RD RING	51	1	"D"	4"	267°-46'		-3°30'
	52	2	"F"		271°-46'		-38°
	53	1	"D"		281°-48'		-3°
	54	1	"C"		283°-48'		-57°30'
	55	2	"F"		285°-49'		-38°
	56	1	"D"		295°-51'		-4°
	57	2	"F"		301°-50'		-38°
	58	1	"C"		307°		-59°
	59	1	"D"		312°		-3°
	60	2	"F"		314°		-39°
	61	1	"D"		324°		-4°
	62	2	"F"		328°		-38°
	63	1	"C"		332°		-59°30'
	64	1	"D"		338°		-3°
	65	2	"F"		342°-10		-38°
	66	1	"D"		352°-11'		-2°30'
	67	2	"F"		354°-12'		-37°30'
	68	1	"C"	4"	356°-12'	EL.2195'-3'	-58°
47-HCB-4" LOCATION-262 2ND RING	1	2	"F"	4"	4°-10'	EL.2196'-10"	-37°
	2	1	"D"		8°-12'		-2°30'
	3	1	"C"		15°-7'		-59°
	4	2	"F"		18°-10'		-39°
	5	1	"D"		22°-8'		-3°30'
	6	2	"F"		32°-10'		-39°
	7	1	"D"		36°-10'		-2°
	8	1	"C"		44°-11'		-59-30'
	9	2	"F"		46°-11'		-37°30'
	10	1	"D"		48°-14'		-4°
	11	2	"F"		62°-11'		-40°
	12	1	"D"		64°-12'		-1°
	13	2	"F"		74°-13'		-40°
	14	1	"C"		76°-13'		-59°30'
	15	1	"D"		78°-16'		-1°
	16	2	"F"		88°-18'		-38°30'
	17	1	"D"		92°-19'		-1°-30'
	18	2	"F"		102°-29'		-39°30'
	19	1	"C"		104°-31'		-60°30'
	20	1	"D"	4"	106°-31'		-0°30'
47-HCB-3" LOC.-262 2ND RING	21	2	"F"	3"	116°-26'		-40°
	22	1	"D"		122°-29'		-2°30'
	23	2	"F"		132°-29'		-38°
	24	1	"D"		134°-27'		-3°
	25	1	"C"		136°-28'		-57°
	26	2	"F"		144°-24'		-38°
	27	1	"D"		148°-28'		-4°
	28	2	"F"		158°-27'		-36°30'
	29	1	"D"		162°-28'		-4°
	30	1	"C"		165°-28'		-56°
	31	2	"F"		172°-31'		-36°
	32	1	"D"	3"	174°-33'	EL.2196'-10'	-6°
53-HCB-4" LOCATION-261 2ND RING	33	2	"F"	4"	183°-37'	EL 2196'-10'	-39°
	34	1	"D"		187°-39'		-3°
	35	1	"C"		194°-34'		-57°30'
	36	2	"F"		197°-41'		-40°
	37	1	"D"		202°-9'		-1°-30'
	38	2	"F"		211°-36'		-38°30'
	39	1	"D"		215°-37'		-2°30'
	40	1	"C"		223°-44'		-59°
	41	2	"F"		225°-43'		-41°
	42	1	"D"		227°-44'		-3°30'
	43	2	"F"		242°		-41°
	44	1	"D"		244°		+1°30'
	45	2	"F"		254°-10'		-43°30'
	46	1	"C"		256°-12'		-63°
	47	1	"D"		258°-13'		+1°30'
	48	2	"F"		268°-26'		-42°
	49	1	"D"		272°-18'		+3°
	50	2	"F"		282°-18'		-40°30'
	51	1	"C"		284°-19'		-61°
	52	1	"D"	4"	286°-22'		-2°30'
53-HCB-3" LOC.-261 2ND RING	53	2	"F"	3"	296°-27'		-39°30'
	54	1	"D"		302°-30'		-1°
	55	2	"F"		312°-31'		-38°30'
	56	1	"D"		314°-33'		-1°
	57	1	"C"		316°-34'		-59°30'
	58	2	"F"		324°-36'		-39°30'
	59	1	"D"		328°-35'		-2°30'
	60	2	"F"		338°-36'		-42°30'
	61	1	"D"		342°-35'		-4°
	62	1	"C"		345°-37'		-59°
	63	2	"F"		352°-37'		-39°
	64	1	"D"	3"	354°-35'	EL.2196'-10"	-3°

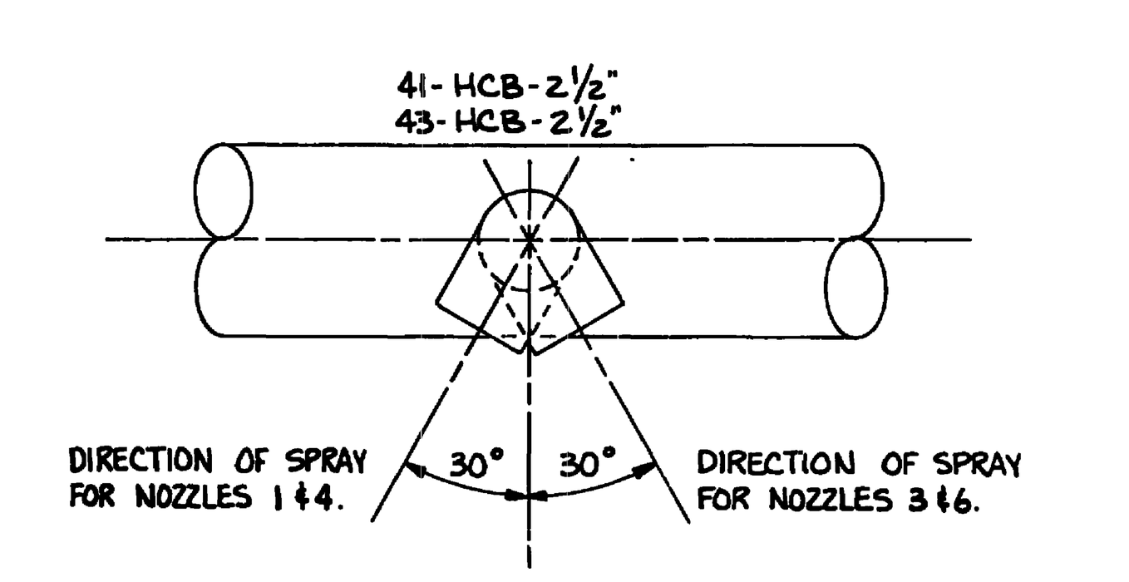
LOCATION-262 1ST RING	1	2	"G"	2½"	13°-10'	EL.2201'-6"	49-HCB-2½"	-92°30'
	2	3	"I"		36°-39'		55-HCB-2½"	+40°-30'
	3	3	"I"		57°-48'		55-HCB-2½"	+41°
	4	3	"I"		96°-59'		55-HCB-2½"	+41°
	5	3	"I"		135°-37'		55-HCB-2½"	+45°
	6	3	"I"		176°-4'		55-HCB-2½"	+47°-30'
	7	2	"G"		192°-35'		55-HCB-2½"	-92°
LOCATION-261 1ST RING	8	3	"I"		213°-12'		49-HCB-2½"	+40°
	9	3	"I"		234°-55'		49-HCB-2½"	+38°
	10	3	"I"		275°-14'		49-HCB-2½"	+40°-30'
	11	3	"I"		315°		49-HCB-2½"	+42°-30'
	12	3	"I"	2½"	356°-26'	EL 2201'-6"	49-HCB-2½"	+42°

LOC. 262	1	2	"G"	4"	SEE DET. 5 (M-03EN05)	48-HCB-4'	
LOC. 261	2	2	"G"	4"	SEE DET. 5(M-03EN05)	54-HCB-4"	

LOC. 261	1	3	"I"	2½"	SEE DET. 4(M-03EN05)	41-HCB-2½"	
	2	2	"G"			41-HCB-2½"	
	3	3	"I"			41-HCB-2½'	
	4	3	"I"			43-HCB-2½"	
	5	2	"G"			43-HCB-2½"	
	6	3	"I"	2½"	SEE DET. 4(M-03EN05)	43-HCE-2½"	

	4 TH RING							
LOC 262	115	3	"H"	6"	1°-11'	EL. 2170'-3"	45-HCB-6"	-30°
LOC 261	116	3	"H"	6"	180°-55'	EL.2170'-3"	51-HCB-6"	-31°





SECTION A

AS BUILT PIPE ELEVATIONS OF CONTAINMENT SPRAY RINGS

	AZIMUTH	PIPE ℄ EL.	PIPE RAD. ℄
	1ST RING ℄ EL. 2201'-6"(REF.)		
49-HCB-2½" LOC. 262	10°-12'-37"	2201'-6¾"	19'-0 1/16"
55-HCB-2½" LOC. 262	30° 03' 35"	2201'-5"	19'-4 7/8"
	49°-58'-11"	2201'-5"	19'-5 3/8"
	70°-09'-32"	2201'-4 1/2"	19'-6"
	90°-02'-48"	2201'-3 5/8"	19'-6 13/16"
	109°-34'-33"	2201'-3 9/16"	19'-6 5/16"
	129°-42'-25"	2201'-3 9/16"	19'-6 11/16"
	149°-33'-47"	2201'-4 5/16"	19'-5 9/16"
49-HCB-2½" LOC. 261	189°-30'-41"	2201'-2 5/32"	19'-3 11/16"
	209°-37'-35"	2201'-3 11/16"	18'-10 1/2"
	229°-17'-38"	2201'-4 1/4"	18'-10 5/8"
	249°-35'-57"	2201'-4 3/8"	18'-10 5/16"
	269°-53'-58"	2201'-4 1/8"	18'-10 13/16"
	289°-55'-27"	2201'-4 15/16"	18'-10 1/2"
	310°-12'-35"	2201'-5 13/16"	18'-10 1/2"
	330°-19'-48"	2201'-5 3/4"	18'-11 7/16"
	2ND RING ℄ EL.2196'-10"(REF.)		
47-HCB-4" LOC. 262	9°-59'-23"	2196'-9 1/2"	30'-11 3/8"
	20°-05'-07"	2196'-9 7/8"	30'-11 15/16"
	30°-07'-39"	2196'-9 3/4"	31'-0 11/16"
	39°-58'-35"	2196'-9 9/16"	31'-0 5/16"
	50°-03'-48"	2196'-9 7/8"	30'-11 7/8"
	60°-07'-08"	2196'-9 7/16"	30'-11 3/4"
	70°-05'-48"	2196'-9 3/4"	30'-10 7/8"
	79°-56'-18"	2196'-9 3/4"	30'-9 3/4"
	90°-05'-00"	2196'-9 7/8"	30'-9 3/16"
	99°-50'-49"	2196'-9 5/8"	30'-9 3/8"
	109°-51'-56"	2196'-10"	30'-9 3/4"
47-HCB-3" LOC. 262	119°-58'-26"	2196'-9 3/16"	30'-11 1/8"
	129°-47'-09"	2196'-8 1/2"	31'-0 3/4"
	139°-45'-03"	2196'-8 9/16"	31'-1/2"
	149°-47'-46"	2196'-8 7/16"	30'-11 11/16"
	159°-40'-00"	2196'-8 5/16"	30'-11 9/16"
	169°-44'-21"	2196'-9 1/8"	30'-10 7/16"
53-HCB-4" LOC. 261	189°-56'-51"	2196'-8"	31'-2 3/16"
	199°-44'-16"	2196'-7 7/8"	31'-0 3/8"
	209°-45'-42"	2196'-8 1/16"	30'-11"
	219°-47'-19"	2196'-9 9/16"	30'-9 3/16"
	229°-48'-00	2196'-10"	30'-8"
	239°-55'-25"	2196'-10 5/8"	30'-7 5/8"
	249°-54'-56"	2196'-10 9/16"	30'-7 3/16"
	259°-51'-09"	2196'-10"	30'-7 5/16"
	269°-48'-08	2196'-9 3/4"	30'-7 11/16"
	279°-54'-01"	2196'-9 1/4"	30'-8 1/4"
	289°-55'-48"	2196'-9 3/8"	30'-9 7/16"
53-HCB-3" LOC. 261	300°-00'-32"	2196'-8 15/16"	30'-9 11/16"
	310°-03'-24"	2196'-9 5/16"	30'-10 11/16"
	320°-10'-45"	2196'-9 3/8"	30'-10 5/16"
	330°-12'-04"	2196'-9 1/4"	30'-11"
	340°-06-39"	2196'-9 3/8"	31'-0 1/2"
	350°-16'-31"	2196'-9 5/16"	31'-0 5/8"
	3RD RING ℄ EL.2195' 3"(REF.)		
52-HCB-3" LOC. 262	10°-01'-28"	2195'-2 13/16"	34'-0 5/8"
	20°-02'-36"	2195'-2 1/4"	34'-1 5/16"
	30°-04'-47"	2195'-1 3/8"	34'-1 1/4"
	40°-01'-09"	2195'-0 5/8"	34'-0 5/8"
	50°-04'-43"	2195'-2 7/16"	34'-0 1/8"
	60°-09'-10"	2195'-1 5/16"	34'-0 1/2"
	69°-59'-10"	2195'-1"	34'-0 9/16"
	79°-55'-53"	2195'-0 11/16"	34'-0 3/8"
52-HCB-4" LOC. 262	90°-00'-27"	2195'-0 1/16"	34'-0 9/16"
	99°-49'-03"	2194'-11 7/8"	34'-0 3/8"
	109°-52'-24"	2195'-0 7/16"	34'-1 1/2"
	119°-54'-02"	2195'-0 3/16"	34'-1 9/16"
	129°-44'-37"	2195'-0 3/4"	34'-0 11/16"
	139°-45'-48"	2195'-0 15/16"	34'-0 1/8"
	149°-48'-08"	2195'-0 13/16"	33'-11 11/16"
	159°-45'-57"	2194'-11 7/8"	33'-11 11/16"
46-HCB-3" LOC. 261	189°-43'-00"	2195'-1 9/16"	33'-9 11/16"
	199°-47'-22"	2195'-0 15/16"	33'-11 3/8"
	209°-48'-54"	2195'-0 13/16"	33'-11 7/16"
	219°-40'-40"	2195'-1 5/16"	33'-10 7/16"
	229°-44'-42"	2195'-1 3/8"	33'-8 7/16"
	239°-53'-26"	2195'-1 9/16"	33'-8 1/16"
	249°-52'-24"	2195'-1 15/16"	33'-8 7/8"
	259°-51'-38"	2195'-1 7/8"	33'-9 3/4"

46-HCB-4" LOC. 261	269°-58'-14"	2195'-1 5/16"	33'-9 7/8"
	279°-58'-45"	2195'-0 13/16"	33'-10"
	290°-00'-31"	2195'-0 13/16"	33'-10 9/16"
	300°-01'-09"	2195'-1 7/16"	33'-9 11/16"
	309°-58'-16"	2195'-2 1/8"	33'-9 1/8"
	320°-04'-10"	2195'-2 5/8"	33'-8 3/4"
	330°-08'-44"	2195'-2 7/16"	33'-9 1/16"
	340°-01'-42"	2195'-2 5/16"	33'-9 13/16"
	4TH RING ℄ EL. 2170'-3"(REF.)		
45-HCB-6" LOC. 262	9°-59'-50"	2170'-1 3/4"	59'-4 3/4"
	19°-59'-20"	2170'-1 3/8"	59'-5 7/8"
	29°-51'-56"	2170'-1 15/16"	59'-6 1/4"
	39°-58'-50"	2170'-1 7/8"	59'-7 9/16"
	49°-55'-50"	2170'-2"	59'-7 3/16"
45-HCB-4" LOC. 262	59°-47'-20"	2170'-1 11/16"	59'-8 3/8"
	69°-50'-56"	2170'-1 5/8"	59'-6 1/8"
	79°-52'-50"	2170'-1 13/16"	59'-3 7/8"
	89°-55'-50"	2170'-1 11/16"	59'-2 3/4"
	99°-58'-14"	2170'-1 5/8"	59'-8 3/8"
	109°-59'-56"	2170'-2 1/16"	59'-11 5/16"
	119°-58'-14"	2170'-1 1/2"	60'-1 1/16"
45-HCB-3" LOC. 262	129°-53'-38"	2170'-1 15/16"	60'-1 3/4"
	139°-53'-38"	2170'-2 1/16"	60'-0 13/16"
	149°-46-44"	2170'-1 7/8"	60'-0"
	159°-47'-56"	2170'-1 13/16"	59'-8 3/16"
	169°-52'-26"	2170'-2"	59'-5 3/8"
	177°-23'-44"	2170'-1 7/8"	58'-11 9/16"
51-HCB-6" LOC. 261	189°-57'-02"	2170'-3 1/2"	59'-1 3/16"
	199°-57'-02"	2170'-3 7/8"	59'-3 1/4"
	209°-57'-44"	2170'-1 7/16"	59'-3 15/16"
	219°-51'-56'	2170'-2 3/8"	59'-5"
	229°-55'-02"	2170'-4 1/4"	59'-4 3/8"
51-HCB-4" LOC. 261	239°-54'-50"	2170'-4 1/4"	59'-6 5/16"
	249°-51'-56"	2170'-4 1/16"	59'-7 7/16"
	259°-55'-38"	2170'-4 1/16"	59'-6 13/16"
	269°-51'-50"	2170'-4 7/16"	59'-7 9/16"
	279°-56'-44"	2170'-1 7/16"	59'-5 7/8"
	289°-59'-02"	2170'-3 3/4"	59'-2 9/16"
	300°-00'-20"	2170'-3 11/16"	59'-4 1/16"
51-HCB-3" LOC. 261	310°-07'-50"	2170'-4 1/16"	59'-5 11/16"
	319°-59'-50"	2170'-3 13/16"	59'-8 3/16"
	330°-03'-08"	2170'-3 15/16"	59'-9 9/16"
	339°-58'-02"	2170'-3 15/16"	59'-9 3/8"
	349°-59'-50"	2170'-4 5/16"	59'-9 5/8"
	357°-27'-50"	2170'-4 5/16"	59'-6 1/4"
	5TH RING ℄ EL. 2165'-8"(REF.)		
50-HCB-3" LOC. 262	2°-28'-30"	2165'-8 1/4"	62'-1 9/16"
	10°-00'-00"	2165'-7 13/16"	62'-4 1/8"
	19°-58'-05"	2165'-8"	62'-3 5/8"
	29°-49'-03"	2165'-8 3/16"	62'-5"
	39°-55'-57"	2165'-7 15/16"	62'-3 3/4"
50-HCB-4" LOC. 262	49°-47'-06"	2165'-8 7/16"	62'-4 1/4"
	59°-44'-25"	2165'-7 15/16"	61'-11 15/16"
	69°-48'-38"	2165'-8 1/16"	61'-11 1/16"
	79°-55'-25"	2165'-8"	61'-11 5/16"
	90°-00'-55"	2165'-8"	61'-10 7/8"
	99°-52'-58"	2165'-8 1/4"	62'-2 3/16"
	109°-58'-19"	2165'-8 1/8"	62'-3 3/4"
	119°-56'-50"	2165'-8"	62'-3 13/16"
LOC. 262 50-HCB-6"	129°-50'-45"	2165'-7 15/16	62'-4 5/16"
	139°-52'-45"	2165'-8"	62'-4 1/16"
	149°-41'-44"	2165'-8 3/8"	62'-2 7/8"
	159°-48'-00"	2165'-8 5/8"	62'-0"
	169°-52'-00"	2165'-8 5/16"	61'-9 5/8"
LOC. 261 44-HCB-3"	182°-21'-51"	2165'-6 5/8"	62'-0 1/8"
	189°-56'-11"	2165'-6 5/8"	62'-1 3/8"
	199°-56'-06"	2165'-6 3/4"	62'-1 15/16"
	209°-57'-56"	2165'-6 7/8"	62'-3 1/4"
	219°-53'-56"	2165'-6 7/8"	62'-4"
LOC. 261 44-HCB-4"	229°-53'-51"	2165'-6 13/16"	62'-2 1/4"
	239°-55'-56"	2165'-6 13/16"	62'-4 1/4"
	249°-51'-01"	2165'-6 7/8"	62'-3 7/16"
	259°-55'-44"	2165'-7 3/8"	62'-3 5/16"
	269°-50'-56"	2165'-7 3/8"	62'-2 3/4"
	279°-56'-06"	2165'-7 1/8"	61'-11 11/16"
	289°-58'-06"	2165'-7 1/8"	61'-11 3/4"
	299°-59'-56"	2165'-7"	62'-0 3/4"
44-HCB-6"	310°-05'-26"	2165'-7 1/8"	62'-0 3/4"
	319°-59'-26"	2165'-6 3/4"	62'-0 1/2"

LOC. 261 44-HCB-6"	330°-01'-51"	2165'-6 3/16"	62'-0 3/8"
	339°-56'-51"	2165'-5 5/16"	62'-1"

NOTES:

1. FOR GENERAL NOTES AND REFERENCES SEE DWG. M-03EN01.
2. WORK THIS DRAWING WITH M-03EN03 & M-03EN05.
3. THE FOLLOWING PROCEDURE SHALL BE USED BY THE CONSTRUCTOR WHEN INSTALLING CONTAINMENT SPRAY NOZZLES: NOZZLE SHALL BE THREADED ONTO NIPPLE, TURNING CLOCKWISE BY HAND UNTIL SNUG. USING A CRESCENT WRENCH OR STANDARD 1½" WRENCH, NOZZLE SHALL BE TIGHTENED CLOCKWISE UNTIL REQUIRED NOZZLE ORIENTATION IS OBTAINED. ONCE LOCATED PROPERLY AN INDEXING MARK SHALL BE SCRIBED ON THE NIPPLE AND NOZZLE TO INDICATE THE PROPER ALIGNMENT AND ORIENTATION. SHOULD ANY NOZZLES BE TIGHTENED BEYOND SPECIFIED ORIENTATION IT WILL THEN BE NECESSARY TO BACK OFF TO DESIGN ORIENTATION AND TACK WELD TWO PLACES TO ASSURE THAT NOZZLE WILL NOT BECOME LOOSE. A ± 2° TOLERANCE WILL BE PERMITTED WHEN POSITIONING NOZZLES.
4. AS BUILT ANGLES OF NOZZLES AS COMPARED TO DETAILS 1, 2 & 3. "+" ANGLE IS IN DEGREES ABOVE HORIZONTAL ℄; "−" ANGLE IS IN DEGREES BELOW HORIZONTAL ℄.
5. FOR ORIGINAL DESIGN LOCATIONS OF SPRAY NOZZLES SEE DWG. M-03EN04 REV. 1.

2 USAR FIG. 6.2.2-2-02

ESSENTIAL DRAWING

⊗ REVISED ○ ISSUED | INCORPORATED CHG. DOC. | CHANGE PKG. NO.

THIS DWG. SUPERSEDED BY | REV. | THIS DWG. SUPERSEDES | REV.

REVISION NOTES: REF. CR 2007-000952

WOLF CREEK NUCLEAR OPERATING CORPORATION | ELECTRONIC APPROVAL

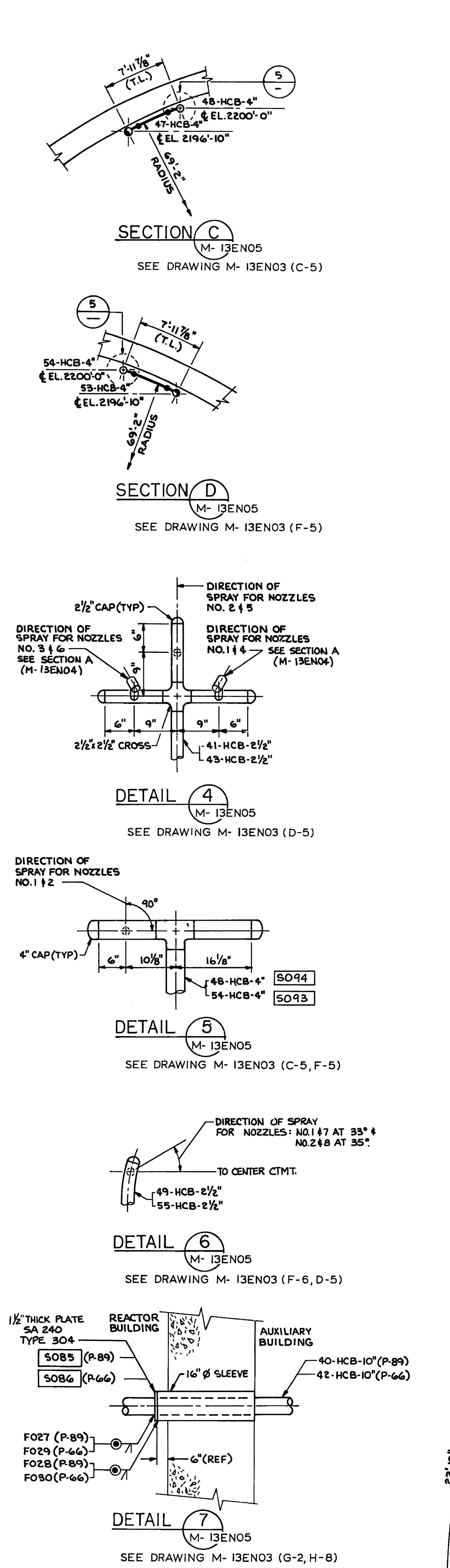
PIPING ORTHOGRAPHIC
CONTAINMENT SPRAY SYSTEM
REACTOR BUILDING "A" & "B" TRAINS

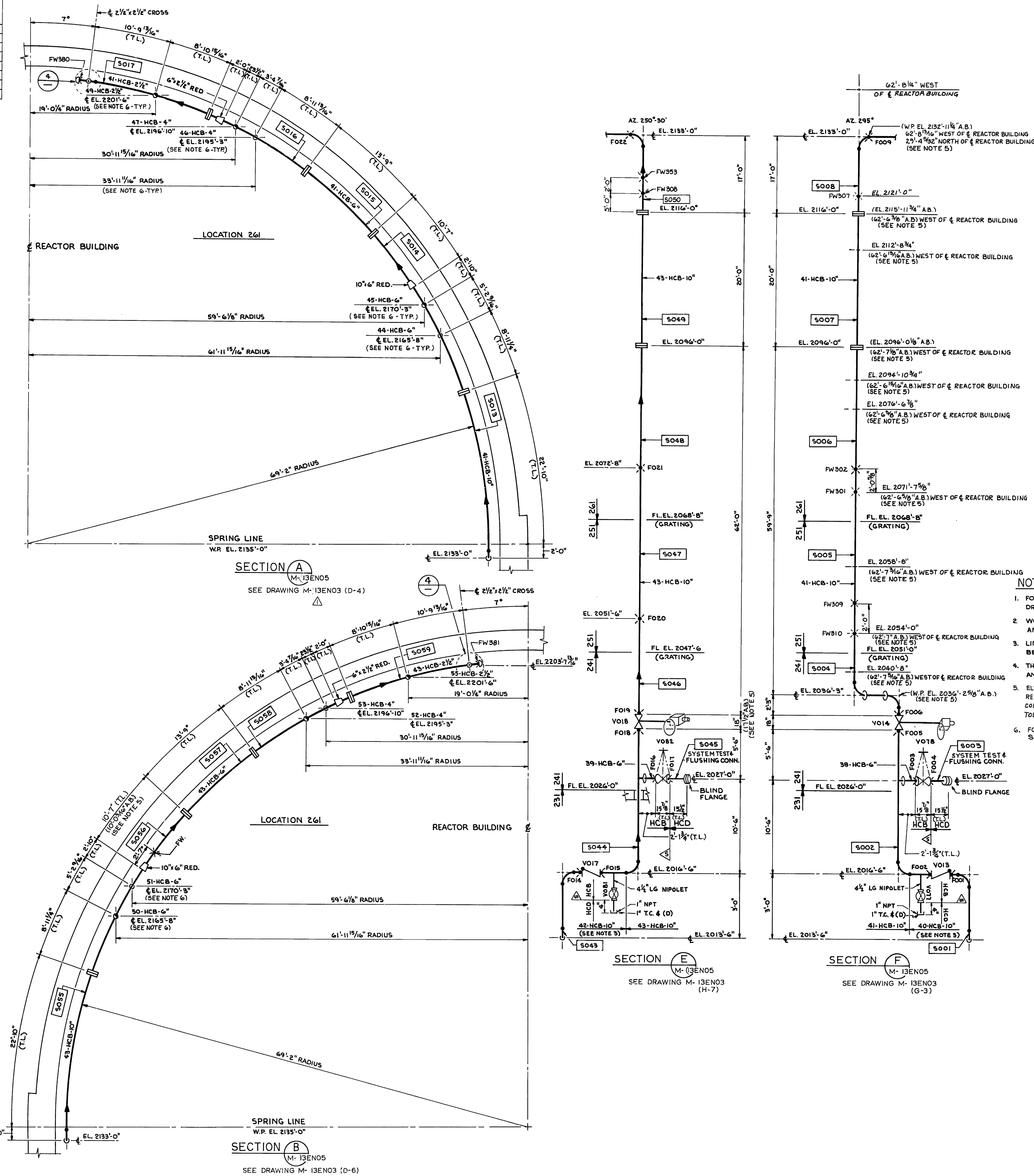
SCALE: NONE | DRAWING NUMBER: M-13EN04 | SHEET | REV: 02

34X44 E SIZE

VALVE NO.	CTR. OF GRAVITY LOC. FOR VALVE & OPR.			VALVE WEIGHT	VENDOR PRINT NO.	VALVE IDENT.	P.O. ITEM NO.
	X	Y	Z				
V082	—	+8 5/8"	—	150	M-221-00081	BECHTEL	2.07
V078	—	+8 5/8"	—	150	M-221-00081	BECHTEL	2.07
V018	+24 1/8"	+5/8"	-5 3/4"	605	M-221-040	BECHTEL	2.02
V017	-3/8"	+3 3/16"	+5/16"	408	M-221-054	BECHTEL	6.02
V014	+19 7/8"	+5/8"	+14 3/4"	605	M-221-040	BECHTEL	2.02
V013	+7/16"	+3 3/16"	+5/16"	408	M-221-054	BECHTEL	6.02
V077	—	—	—	7 1/2	M-231A-102	BECHTEL	2.23
V081	—	—	—	7 1/2	M-231A-102	BECHTEL	2.23

Table: VALVE INFORMATION TABLE





NOTES:

1. FOR GENERAL NOTES AND REFERENCES SEE DRAWING M-13EN01.
2. WORK THIS DRAWING WITH DRAWING M-13EN03 AND M-13EN04.
3. LINE NUMBERS 40-HCB-10" AND 42-HCB-10" SHALL BE SCHEDULE 80S.
4. THIS DRAWING WAS EXPANDED FROM M-13EN03 AND M-13EN04.
5. ELEVATIONS, DIMENSIONS, & LOCATING DIMENSIONS REFERENCED TO THIS NOTE REFLECT THE "AS-BUILT" (A.B.) CONDITION. ASSOCIATED DIMS. THAT ARE WITHIN ALLOWABLE TOLERANCES HAVE NOT BEEN ADJUSTED.
6. FOR AS-BUILT ELEVATIONS AND RADII OF SPRAY RINGS, SEE DWG. M-13EN04 (Q).

2 USAR FIG. 6.2.2-2-03

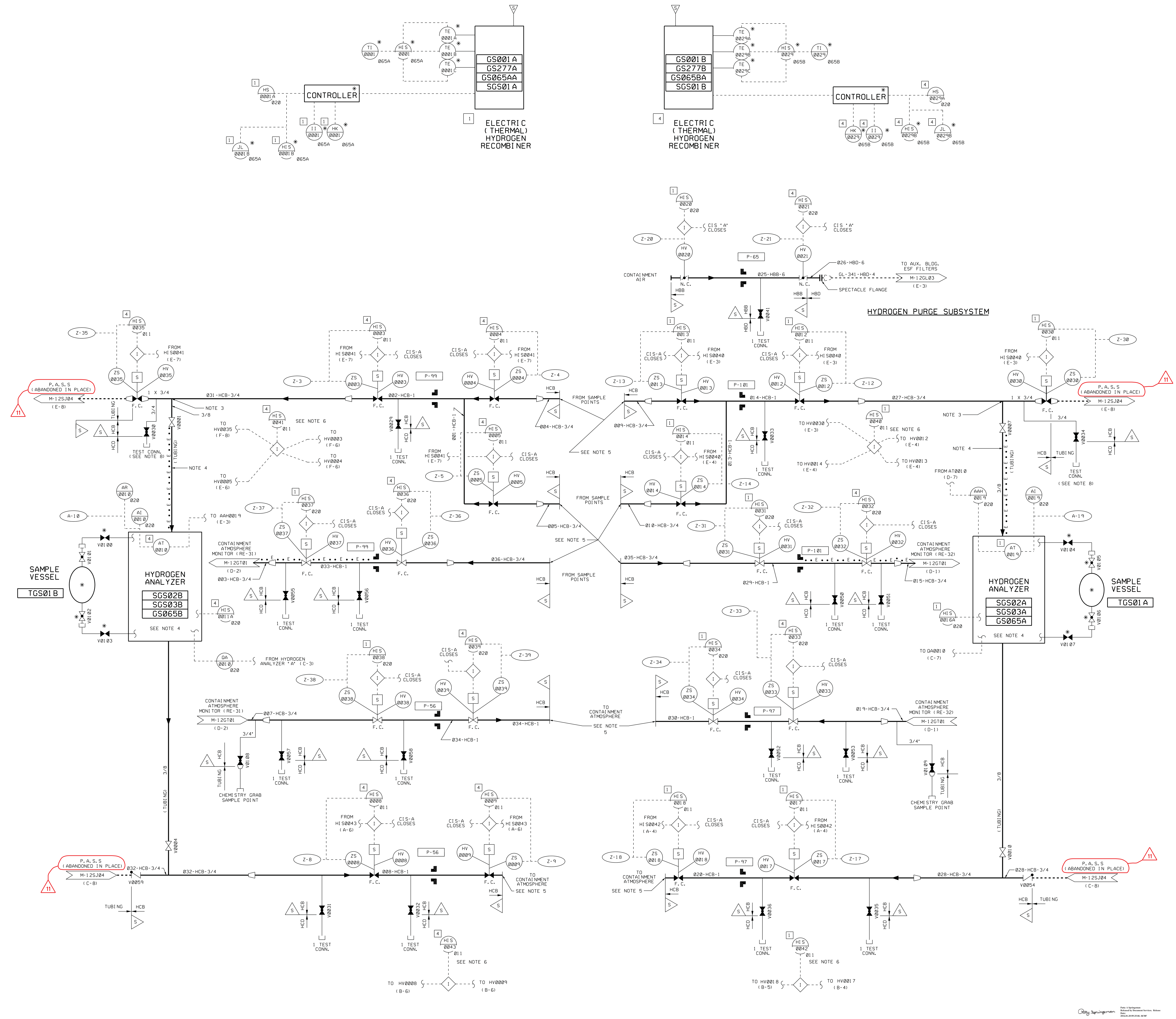
ESSENTIAL DRAWING

⊗ REVISED ○ ISSUED	INCORPORATED CHG. DOC.	CHANGE PKG. NO.
THIS DWG. SUPERSEDED BY REV.	THIS DWG. SUPERSEDES M-13EN05(0)	REV. 01
REVISION NOTES: REF. CR 2007-000952		
WOLF CREEK NUCLEAR OPERATING CORPORATION		ELECTRONIC APPROVAL

PIPING ORTHOGRAPHIC CONTAINMENT SPRAY SYSTEM REACTOR BUILDING "A"&"B" TRAINS

SCALE	DRAWING NUMBER	SHEET	REV
NONE	M-13EN05		02

34X44 E SIZE



NOTES

1. THE HYDROGEN PURGE MAKEUP SUPPLY AIR IS SUPPLIED BY THE COMPRESSED AIR SYS. AND IS SHOWN ON P & I.D. M-12KA01.
2. THE HYDROGEN MIXING FANS ARE SHOWN ON THE CONTAINMENT COOLING SYS. P & I.D. M-12GN01.
3. THIS CONNECTION WILL BE LOCATED AS CLOSE AS POSSIBLE TO THE CONTAINMENT ISOLATION VALVE.
4. FOR HYDROGEN ANALYZERS & HEAT TRACING. SEE VENDOR P & ID PRINT NO. J-359-00016.
5. THREADED END FOR USE DURING VALVE LEAK TESTING.
6. FOUR ISOLATION SWITCHES ARE PROVIDED ON THE MAIN CONTROL BOARD FOR POWER LOCKOUT. SWITCH LOCKOUTS ARE AS INDICATED.
7. CONTROL PANELS GS065A & GS065B ARE SUPPLIED BY HYDROGEN ANALYZER VENDOR (J-359). HYDROGEN RECOMBINER PANEL INSERTS GS065AA & GS065BA ARE SUPPLIED BY THE HYDROGEN RECOMBINER VENDOR (M-637). CONTROL PANEL INSERTS ARE MOUNTED ON HYDROGEN ANALYZER PANELS GS065A & GS065B.
8. THIS VALVE SHALL NOT BE USED FOR CHEMISTRY SAMPLING (REF. PIR 99-1978).

USAR FIG. 6.2.5-1

ESSENTIAL DRAWING

(X) REVISED / ( ) ISSUED	INCORPORATED CHG. DOC.	CHANGE PKG. NO.	06187
THIS DWG. SUPERSEDED BY	REV.	THIS DWG. SUPERSEDES	REV.

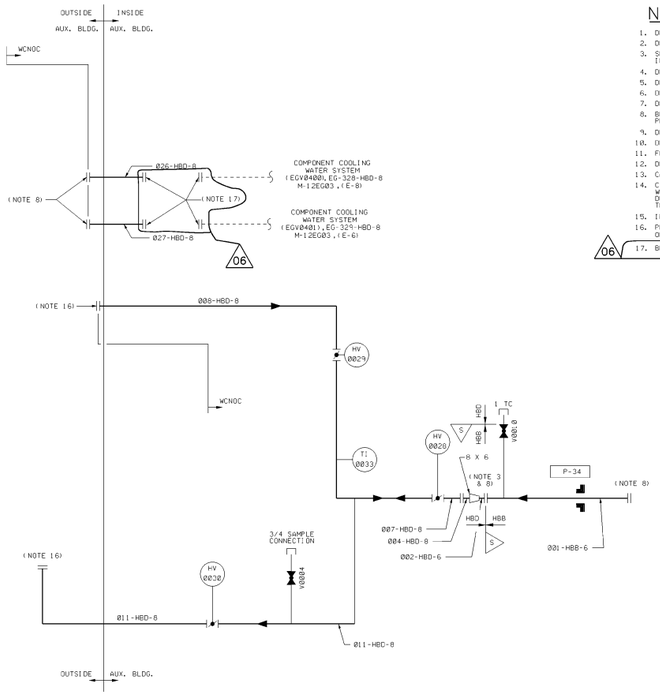
REVISION NOTES: REF. WIP-M-12GS01-008-A-1 PER CP #06187; CHANGES REINSTATED FROM REVISION 09;

WOLF CREEK NUCLEAR OPERATING CORPORATION — ELECTRONIC APPROVAL

PIPING & INSTRUMENTATION DIAGRAM CONTAINMENT HYDROGEN CONTROL SYSTEM

SCALE	DRAWING NUMBER	SHEET	REV
NONE	M-12GS01		11

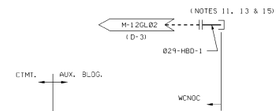
34X44 E SIZE

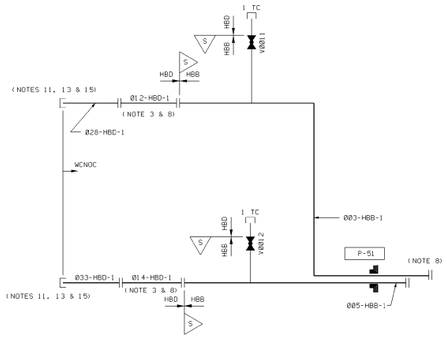


NOTES

1. DELETED.
2. DELETED.
3. SPOOL PIECE INSTALLED ONLY DURING ILRT AND CCW. IF CCW IS TO BE USED FOR COOLING.
4. DELETED.
5. DELETED.
6. DELETED.
7. DELETED.
8. BLIND FLANGES TO BE INSTALLED FOR NORMAL PLANT OPERATION.
9. DELETED.
10. DELETED.
11. FLEX. HOSE INSTALLED DURING ILRT.
12. DELETED.
13. CAP TO BE INSTALLED FOR NORMAL PLANT OPERATION.
14. CTMT. TEMPERATURE MONITORS TE-44 THRU TE-56 ARE PURCHASED BY WCNOC AND ARE USED FOR AMBIENT TEMPERATURE MONITORING DURING OPERATION AND MAY BE DISCONNECTED DURING ILRT. MONITOR TE-52 MAY BE INSTALLED AT A FUTURE DATE.
15. INSTRUMENTATION TO BE PROVIDED BY WCNOC AT THE TIME OF ILRT.
16. PRESSURIZATION EQUIPMENT TO BE PROVIDED BY WCNOC AT THE TIME OF ILRT.
17. BLIND FLANGES TO BE INSTALLED, SPOOL PIECES REMOVED.

06





USAR FIG. 6.2.6-1-00

ESSENTIAL DRAWING

◉ REVISED ○ ISSUED	INCORPORATED CHG. DOC.	CR#00003872	CHANGE PKG. NO.
THIS DWG. SUPERSEDES	REV.	THIS DWG. SUPERSEDED BY	REV.
REVISION NOTES:			

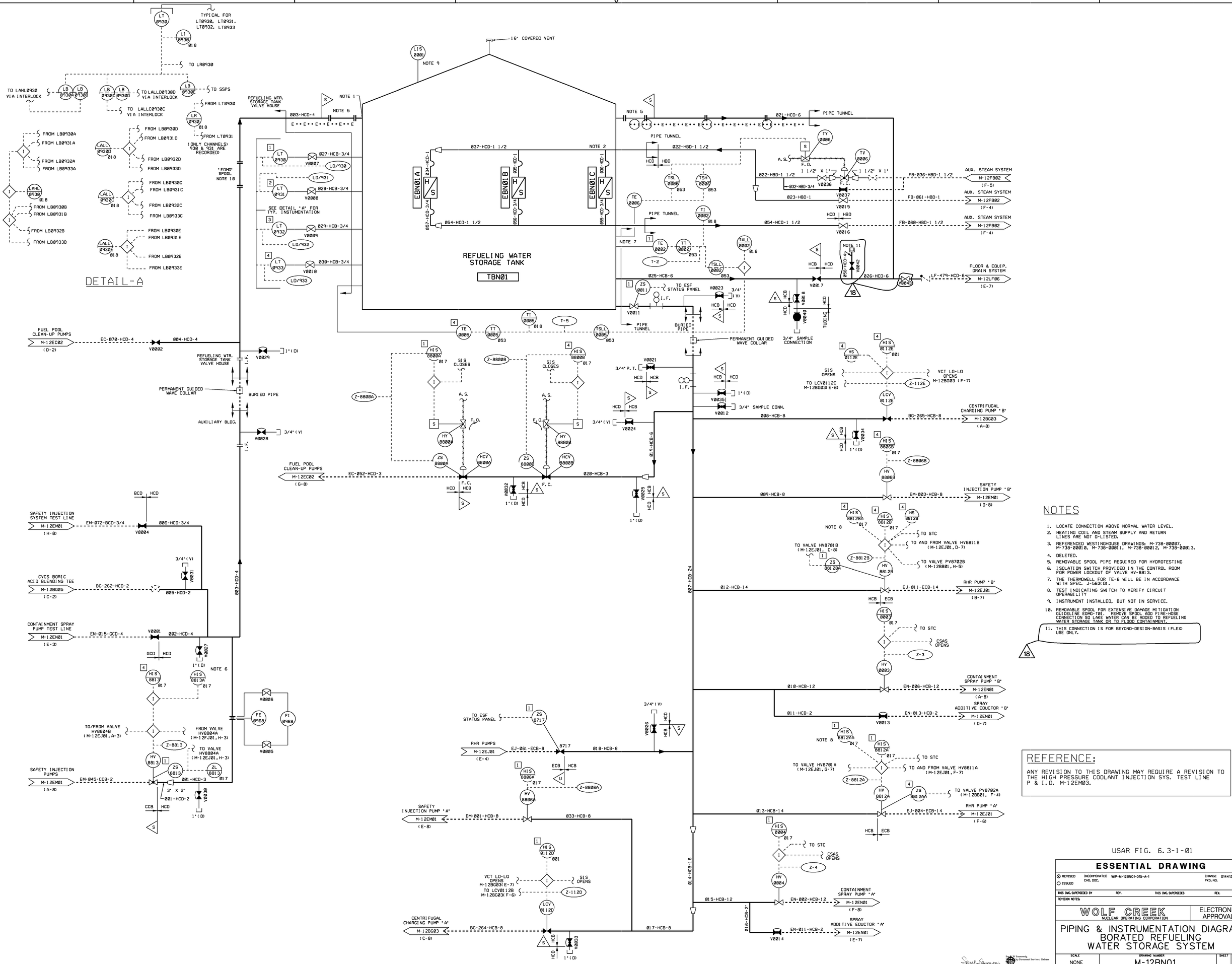
WOLF CREEK NUCLEAR OPERATING CORPORATION — ELECTRONIC APPROVAL

PIPING & INSTRUMENTATION DIAGRAM CONTAINMENT INTEGRATED LEAK RATE TEST

SCALE	DRAWING NUMBER	SHEET	REV
NONE	M-12GP01		06

34344 E SIZE

M-12GP01-1-06



NOTES

1. LOCATE CONNECTION ABOVE NORMAL WATER LEVEL.
2. HEATING COIL AND STEAM SUPPLY AND RETURN LINES ARE NOT D-LISTED.
3. REFERENCED WESTINGHOUSE DRAWINGS: M-738-00007, M-738-00010, M-738-00011, M-738-00012, M-738-00013.
4. DELETED.
5. REMOVABLE SPOOL PIPE REQUIRED FOR HYDROTESTING
6. ISOLATION SWITCH PROVIDED IN THE CONTROL ROOM FOR POWER LOCKOUT OF VALVE HV-8813.
7. THE THERMOWELL FOR TE-6 WILL BE IN ACCORDANCE WITH SPEC. J-563(Q).
8. TEST INDICATING SWITCH TO VERIFY CIRCUIT OPERABILITY
9. INSTRUMENT INSTALLED, BUT NOT IN SERVICE.
10. REMOVABLE SPOOL FOR EXTENSIVE DAMAGE MITIGATION GUIDELINE EDMG-T01. REMOVE SPOOL ADD FIRE-HOSE CONNECTION SO LAKE WATER CAN BE ADDED TO REFUELING WATER STORAGE TANK OR TO FLOOD CONTAINMENT.
11. THIS CONNECTION IS FOR BEYOND-DESIGN-BASIS (FLEX) USE ONLY.

18

REFERENCE:

ANY REVISION TO THIS DRAWING MAY REQUIRE A REVISION TO THE HIGH PRESSURE COOLANT INJECTION SYS. TEST LINE P & I.D. M-12EM03.

USAR FIG. 6.3-1-01

ESSENTIAL DRAWING

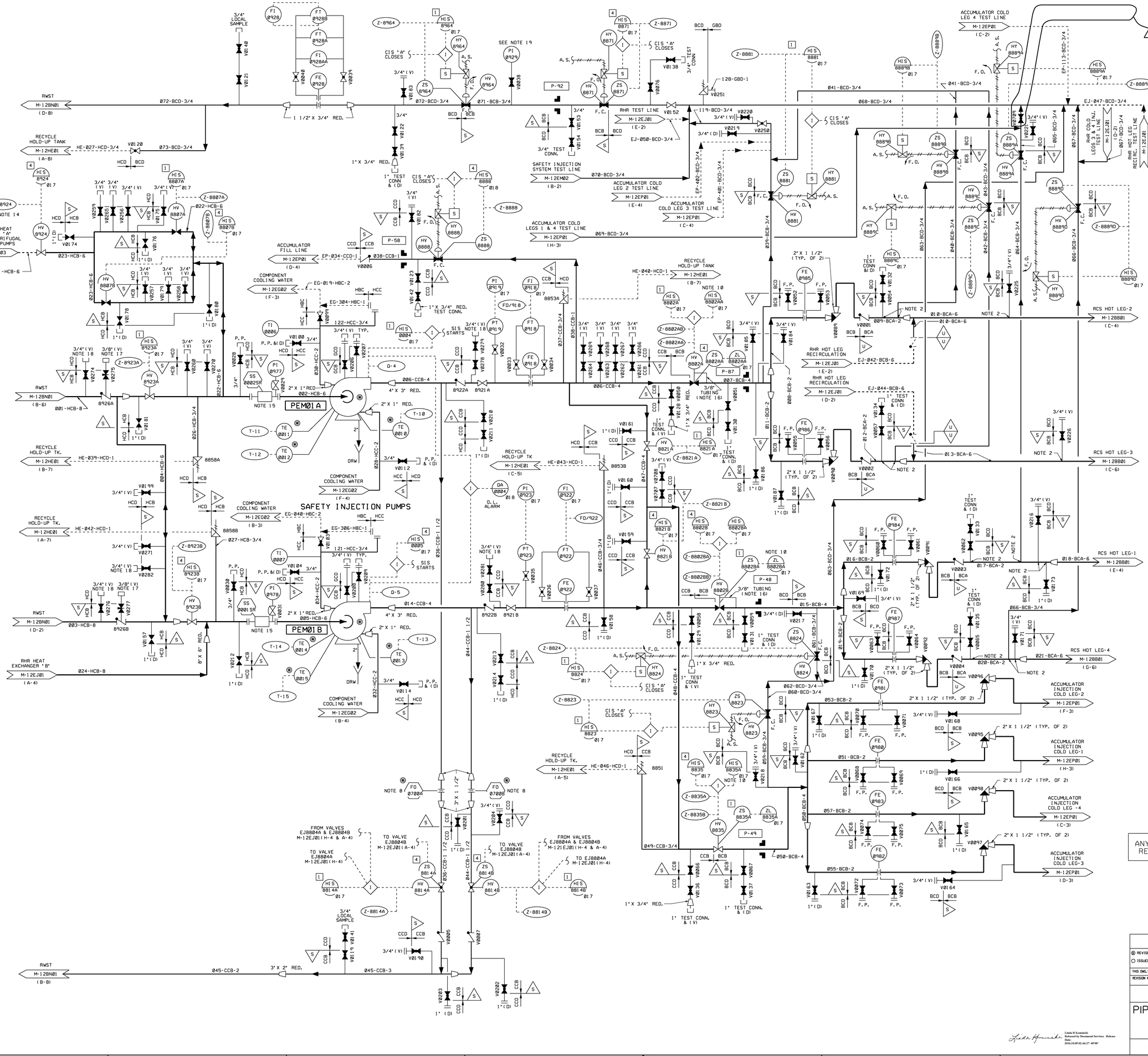
⊗ REVISED ○ ISSUED	INCORPORATED CHG. DOC.	WP-M-12BN01-015-A-1	CHANGE PKG. NO. 014413
THIS DWG. SUPERSEDED BY	REV.	THIS DWG. SUPERSEDES	REV.
REVISION NOTES:			

WOLF CREEK NUCLEAR OPERATING CORPORATION — ELECTRONIC APPROVAL

PIPING & INSTRUMENTATION DIAGRAM BORATED REFUELING WATER STORAGE SYSTEM

SCALE	DRAWING NUMBER	SHEET	REV
NONE	M-12BN01		18

34X44 E SIZE



USAR FIG. 6.3-1-02

ESSENTIAL DRAWING

REVISED ⊗ INCORPORATED CHG. DOC. WIP-M-12EM01-041-A-1 CHANGE PKG. NO. 014917
ISSUED ○

THIS DWG. SUPERSEDED BY REV. THIS DWG. SUPERSEDES REV.

REVISION NOTES: ADDED VALVE EM-V0709 & REMOVED TMO 15-015-EM-00.

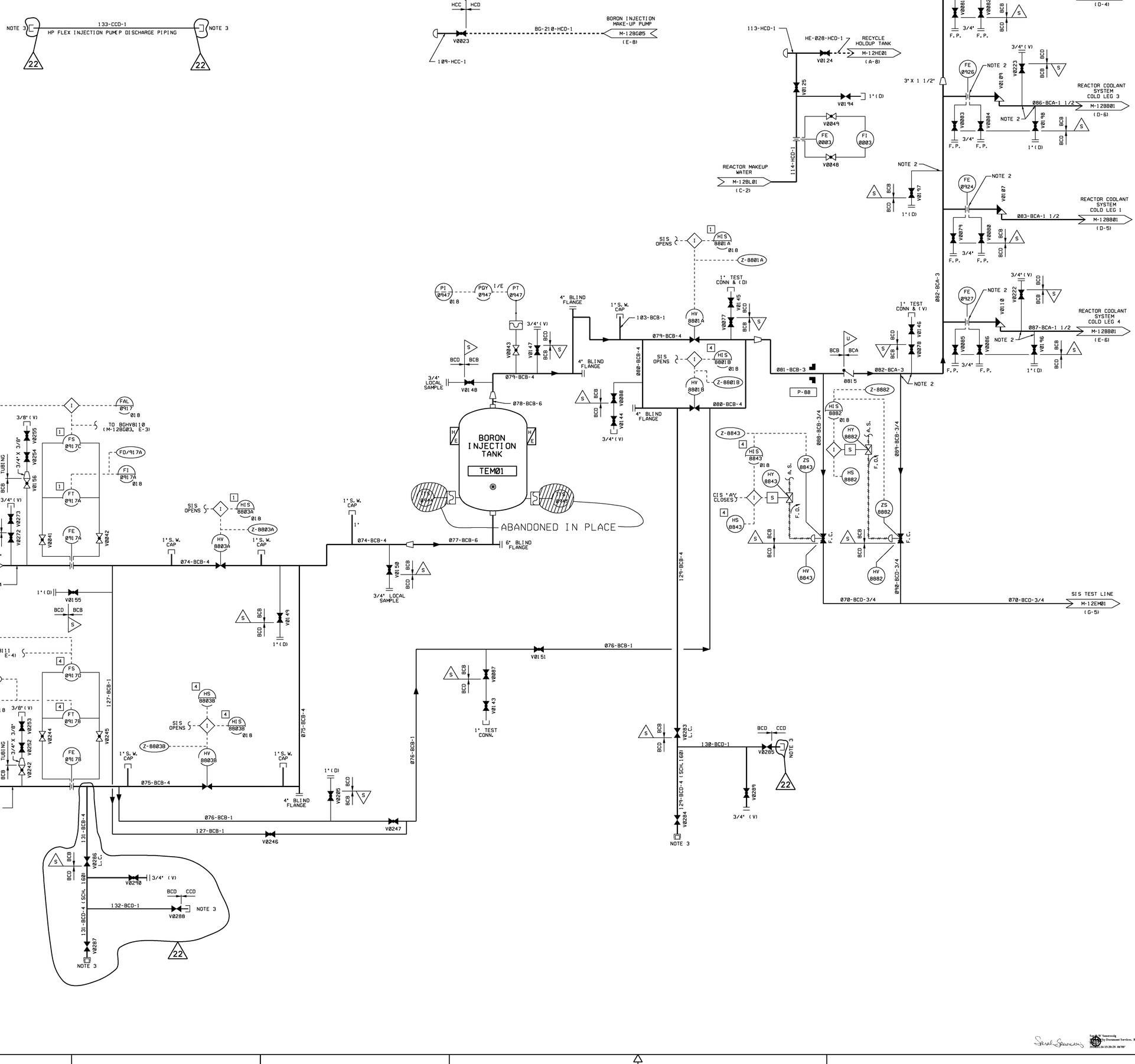
WOLF CREEK NUCLEAR OPERATING CORPORATION — ELECTRONIC APPROVAL

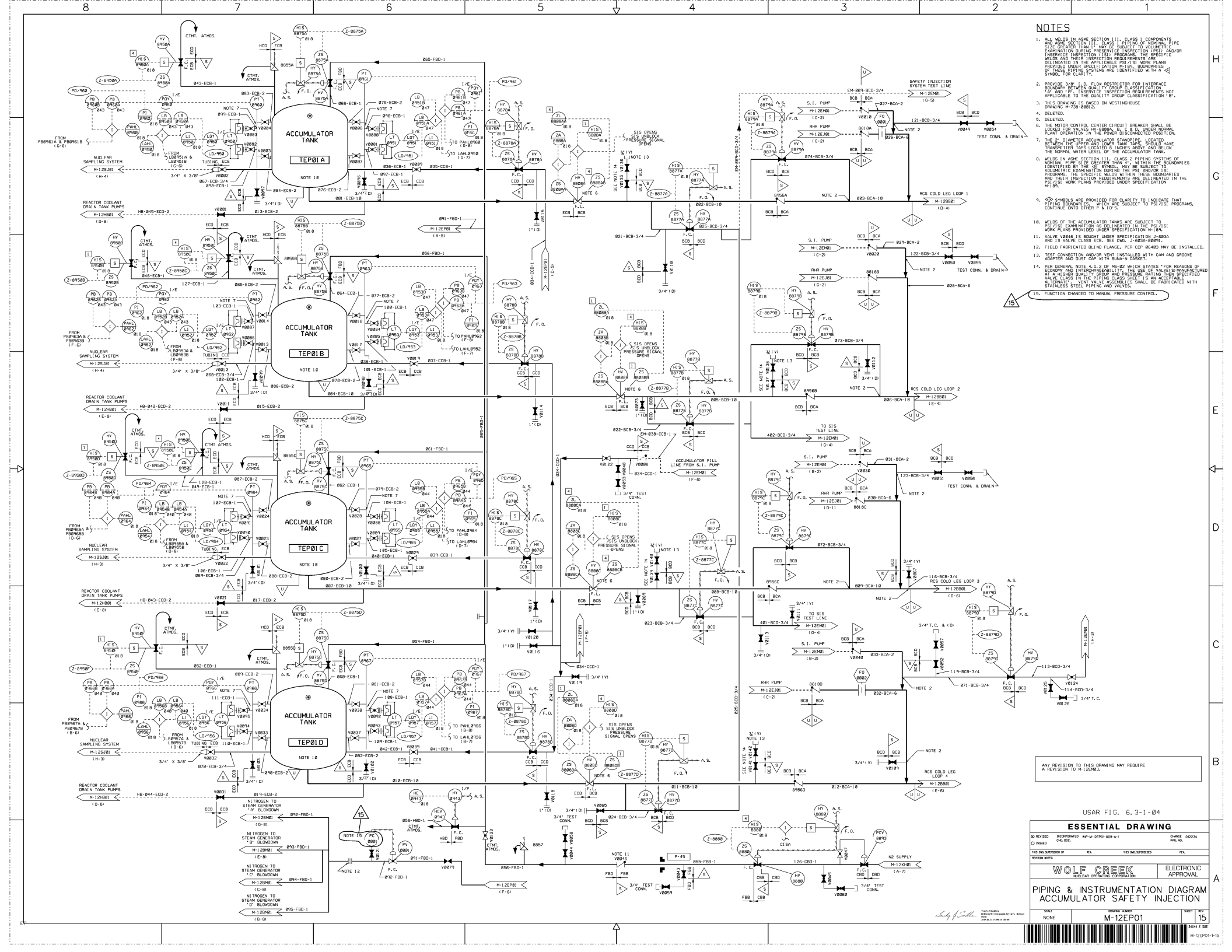
Linda R Kaminski
Released by Document Services. Release Date: 2016.10.05 02:44:27 -05'00'

PIPING & INSTRUMENTATION DIAGRAM HIGH PRESSURE COOLANT INJECTION SYSTEM

SCALE	DRAWING NUMBER	SHEET	REV
NONE	M-12EM01	1	43

34X44 E SIZE


NOTE 3
133-CCD-1
HP FLEX INJECTION PUMP DISCHARGE PIPING
NOTE 3
22
22
HCC
HCD
BG-210-HCD-1
BORON INJECTION MAKE-UP PUMP
M-12BG05
(E-8)
109-HCC-1
113-HCD-1
HE-028-HCD-1
RECYCLE HOLDUP TANK
M-12HE01
(A-8)
V0124
V0125
V0194
1"(D)
V0049
FE 0003
FI 0003
V0048
114-HCD-1
REACTOR MAKEUP WATER
M-12BL01
(C-2)
3" X 1 1/2"
FE 0925
NOTE 2
V0108
V0081
V0082
3/4" F.P.
084-BCA-1 1/2
REACTOR COOLANT SYSTEM COLD LEG 2
M-12BB01
(D-4)
FE 0926
V0109
V0223
V0083
V0084
V0198
086-BCA-1 1/2
REACTOR COOLANT SYSTEM COLD LEG 3
M-12BB01
(D-6)
V0197
FE 0924
V0107
V0079
V0080
083-BCA-1 1/2
REACTOR COOLDANT SYSTEM COLD LEG 1
M-12BB01
(D-5)
FE 0927
V0110
V0222
V0085
V0086
V0196
087-BCA-1 1/2
REACTOR COOLANT SYSTEM COLD LEG 4
M-12BB01
(E-6)
082-BCA-3
1" TEST CONN & (V)
V0146
V0078
8815
081-BCB-3
P-88
Z-8882
HIS 8882
HY 8882
HS 8882
ZS 8882
F.O.
A.S.
F.C.
089-BCB-3/4
088-BCB-3/4
129-BCB-4
070-BCD-3/4
SIS TEST LINE
M-12EM01
(G-5)
NOTES
1. FOR GENERAL NOTES & REFERENCES SEE DWG. M-12EM01.
2. SEE DRAWINGS M-13EM02, M-13EM09 AND M-13EM10 FOR EQUIPMENT NOT SHOWN ON THIS DRAWING THAT HAS BEEN PERMANENTLY REMOVED FROM SERVICE.
3. THESE CONNECTIONS ARE FOR BEYOND-DESIGN-BASIS (FLEX) REACTOR COOLANT SYSTEM MAKE-UP.
PI 0947
PDY 0947
I/E
PT 0947
018
4" BLIND FLANGE
1" S.W. CAP
103-BCB-1
3/4" (V)
V0147
V0043
3/4" LOCAL SAMPLE
V0148
079-BCB-4
078-BCB-6
HV 8801A
HIS 8801A
Z-8801A
SIS OPENS
1" TEST CONN & (D)
V0145
V0077
HV 8801B
HIS 8801B
Z-8801B
080-BCB-4
V0088
V0144
3/4" (V)
BORON INJECTION TANK
TEM01
ABANDONED IN PLACE
Z-8843
HIS 8843
HY 8843
HS 8843
ZS 8843
A.S.
F.C.
CIS "A" CLOSES
FAL 0917
TO BGHV8110 (M-12BG03, E-3)
3/8" (V)
V0255
3/4" X 3/8"
TUBING
V0256
FS 0917C
FT 0917A
FE 0917A
FD/917A
FI 0917A
V0272
V0273
V0041
V0042
CENTRIFUGAL CHARGING PUMP "A"
M-12BG03
(B-3)
074-BCB-4
077-BCB-6
6" BLIND FLANGE
V0150
3/4" LOCAL SAMPLE
V0155
V0149
TO BGHV8111 (M-12BG03, E-4)
FS 0917D
FT 0917B
FE 0917B
FD/917B
FI 0917B
V0244
V0245
V0705
V0706
V0252
V0253
V0242
CENTRIFUGAL CHARGING PUMP "B"
M-12BG03
(A-4)
075-BCB-4
127-BCB-1
4" BLIND FLANGE
V0205
V0246
V0247
076-BCB-1
V0151
V0087
V0143
1" TEST CONN.
V0283
L.C.
130-BCD-1
V0285
V0284
V0289
NOTE 3
131-BCB-4
V0286
V0290
132-BCD-1
V0288
V0287
ANY REVISION TO THIS DRAWING MAY REQUIRE A REVISION TO M-12EM03.
USAR FIG. 6.3-1-03
ESSENTIAL DRAWING
REVISED
ISSUED
INCORPORATED CHG. DOC.
WIP-M-12EM02-020-A-1, REV.03
CHANGE PKG. NO. 014413
THIS DWG. SUPERSEDED BY
REV.
THIS DWG. SUPERSEDES
REV.
REVISION NOTES:
WOLF CREEK NUCLEAR OPERATING CORPORATION
ELECTRONIC APPROVAL
PIPING & INSTRUMENTATION DIAGRAM HIGH PRESSURE COOLANT INJECTION SYSTEM
SCALE
NONE
DRAWING NUMBER
M-12EM02
SHEET
REV
22
34X44 E SIZE
EM


ACCUMULATOR TANK TEP01A
ACCUMULATOR TANK TEP01B
ACCUMULATOR TANK TEP01C
ACCUMULATOR TANK TEP01D
NOTES
1. ALL WELDS IN ASME SECTION III, CLASS 1 COMPONENTS AND ASME SECTION III, CLASS 1 PIPING OF NOMINAL PIPE SIZE GREATER THAN 1" MAY BE SUBJECT TO VOLUMETRIC EXAMINATION DURING PRESERVICE INSPECTION (PSI) AND/OR INSERVICE INSPECTION (ISI) PROGRAMS. THE SPECIFIC WELDS AND THEIR INSPECTION REQUIREMENTS ARE DELINEATED IN THE APPLICABLE PSI/ISI WORK PLANS PROVIDED UNDER SPECIFICATION M-189. BOUNDARIES OF THESE PIPING SYSTEMS ARE IDENTIFIED WITH A ◁ SYMBOL FOR CLARITY.
2. PROVIDE 3/8" I.D. FLOW RESTRICTOR FOR INTERFACE BOUNDARY BETWEEN QUALITY GROUP CLASSIFICATION 'A' AND 'B'. INSERVICE INSPECTION REQUIREMENTS NOT APPLICABLE TO THE QUALITY GROUP CLASSIFICATION 'B'.
3. THIS DRAWING IS BASED ON WESTINGHOUSE DRAWING M-730-00012.
4. DELETED.
5. DELETED.
6. THE MOTOR CONTROL CENTER CIRCUIT BREAKER SHALL BE LOCKED FOR VALVES HV-8808A, B, C & D, UNDER NORMAL PLANT OPERATION IN THE POWER DISCONNECTED POSITION.
7. THE 2" DIAMETER ACCUMULATOR STANDPIPE, LOCATED BETWEEN THE UPPER AND LOWER TANK TAPS, SHOULD HAVE TRANSMITTER TAPS LOCATED 8 INCHES ABOVE AND BELOW THE NORMAL WATER LEVEL OF THE ACCUMULATOR TANK.
8. WELDS IN ASME SECTION III, CLASS 2 PIPING SYSTEMS OF NOMINAL PIPE SIZE GREATER THAN 4", WITHIN THE BOUNDARIES IDENTIFIED BY THE ◁ SYMBOL, MAY BE SUBJECT TO VOLUMETRIC EXAMINATION DURING THE PSI AND/OR ISI PROGRAMS. THE SPECIFIC WELDS WITHIN THESE BOUNDARIES AND THEIR INSPECTION REQUIREMENTS ARE DELINEATED IN THE PSI/ISI WORK PLANS PROVIDED UNDER SPECIFICATION M-189.
9. ◁ SYMBOLS ARE PROVIDED FOR CLARITY TO INDICATE THAT PIPING BOUNDARIES, WHICH ARE SUBJECT TO PSI/ISI PROGRAMS, CONTINUE ONTO OTHER P & I.D.S.
10. WELDS OF THE ACCUMULATOR TANKS ARE SUBJECT TO PSI/ISI EXAMINATION AS DELINEATED IN THE PSI/ISI WORK PLANS PROVIDED UNDER SPECIFICATION M-189.
11. VALVE V0046 IS BOUGHT UNDER SPECIFICATION J-603A AND IS VALVE CLASS ECB. SEE DWG. J-603A-00001.
12. FIELD FABRICATED BLIND FLANGE, PER CCP 06403 MAY BE INSTALLED.
13. TEST CONNECTION AND/OR VENT INSTALLED WITH CAM AND GROOVE ADAPTER AND DUST CAP WITH BUNA-N GASKET.
14. PER GENERAL NOTE 4.G.2 OF MS-02 WHICH STATES 'FOR REASONS OF ECONOMY AND INTERCHANGEABILITY, THE USE OF VALVES MANUFACTURED AT A HIGHER QUALITY GROUP AND PRESSURE RATING THEN SPECIFIED FOR A VALVE CLASS IN THE PIPING CLASS SHEET IS AN ACCEPTABLE ALTERNATIVE." VENT VALVE ASSEMBLIES SHALL BE FABRICATED WITH STAINLESS STEEL PIPING AND VALVES.
15. FUNCTION CHANGED TO MANUAL PRESSURE CONTROL.
ANY REVISION TO THIS DRAWING MAY REQUIRE A REVISION TO M-12EM03.
USAR FIG. 6.3-1-04
ESSENTIAL DRAWING
WOLF CREEK NUCLEAR OPERATING CORPORATION
ELECTRONIC APPROVAL
PIPING & INSTRUMENTATION DIAGRAM ACCUMULATOR SAFETY INJECTION
SCALE NONE
DRAWING NUMBER M-12EP01
SHEET 15
REV A
M-12EP01-1-15