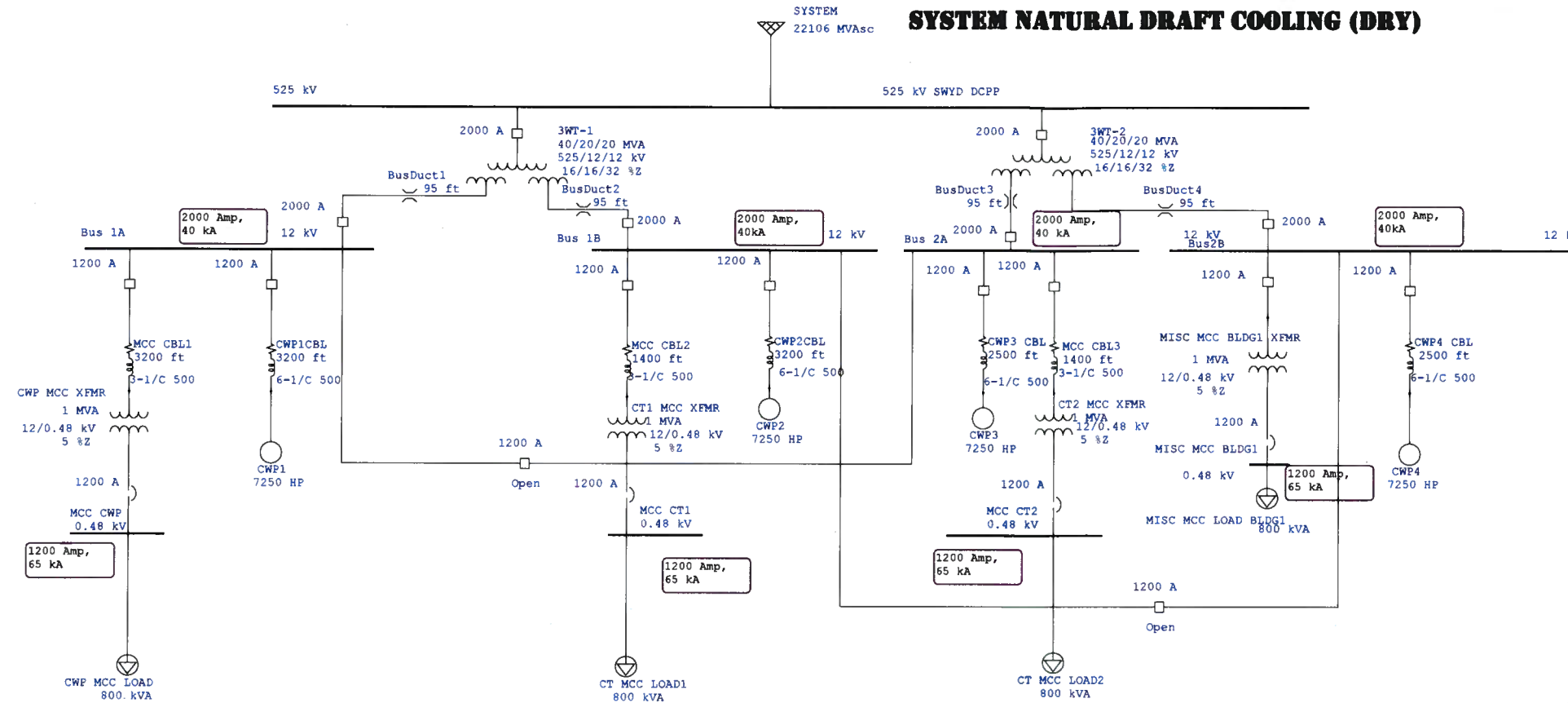


ONE LINE DIAGRAM : DCPD CIRCULATING WATER SYSTEM NATURAL DRAFT COOLING (DRY)



- NOTES :**
 1. THE NEW ELECTRICAL SYSTEM FOR UNIT 2 IS IDENTICAL
- REFERENCES :**
 1. MECHANICAL EQUIPMENT LIST MOX-YA-00001
 2. PIPING AND INSTRUMENTATION DIAGRAM M6K-WL-00001

- ELECTRICAL EQUIPMENT REQUIRED :**
- 1.) 3 WINDING TRANSFORMERS
 -QUANTITY; RATING : 2; 40MVA/20MVA/20MVA, 525KV/12KV/12KV
 - 2.) 2 WINDING TRANSFORMERS
 -QUANTITY; RATING : 4; 1MVA, 12KV/0.48KV
 - 3.) 13.8 KV SWITCHGEAR (OPERATED AT 12 KV)
 -QUANTITY; RATING : 4; 2000A, 40KA
 - 4.) 0.48KV MCC
 -QUANTITY; RATING : 2; 1200A, 65KA
- NOTE : CT MCC LOAD 1 AND CT MCC LOAD 2 IN VENDOR'S SCOPE. THEREFORE, NOT COUNTED HERE.**

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JOB NO. : 25762-110

DRAWING NO. : E1K-0000-00001

REVISION/DATE: B 7/29/13

REASON FOR ISSUE : FOR ESTIMATION

TITLE : ONE LINE DIAGRAM : DCPD CIRCULATING WATER SYSTEM NATURAL DRAFT COOLING (DRY)

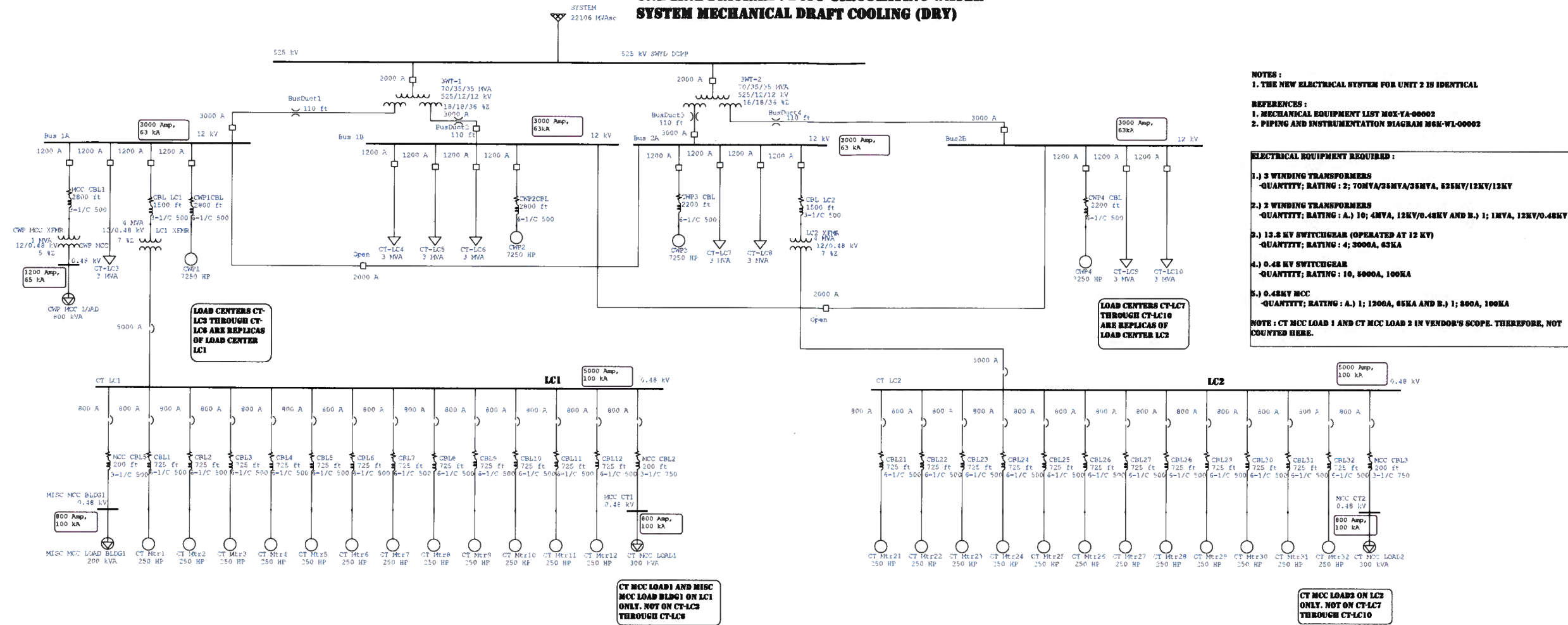
ORIGINATED BY : J.S.

VERIFIED BY : P.H.

EGS : J.R.

PE : A.E.L.

ONE LINE DIAGRAM : DCPD CIRCULATING WATER SYSTEM MECHANICAL DRAFT COOLING (DRY)



NOTES :
 1. THE NEW ELECTRICAL SYSTEM FOR UNIT 2 IS IDENTICAL

REFERENCES :
 1. MECHANICAL EQUIPMENT LIST MEX-YA-00002
 2. PIPING AND INSTRUMENTATION DIAGRAM MEX-WI-00002

ELECTRICAL EQUIPMENT REQUIRED :

- 1.) 3 WINDING TRANSFORMERS
 -QUANTITY; RATING : 2; 70MVA/35MVA/35MVA, 525KV/12KV/12KV
- 2.) 2 WINDING TRANSFORMERS
 -QUANTITY; RATING : A.) 10; 4MVA, 12KV/0.48KV AND B.) 1; 1MVA, 12KV/0.48KV
- 3.) 13.8 KV SWITCHGEAR (OPERATED AT 12 KV)
 -QUANTITY; RATING : 4; 3000A, 63KA
- 4.) 0.48 KV SWITCHGEAR
 -QUANTITY; RATING : 10, 5000A, 100KA
- 5.) 0.48KV MCC
 -QUANTITY; RATING : A.) 1; 1200A, 63KA AND B.) 1; 800A, 100KA

NOTE : CT MCC LOAD 1 AND CT MCC LOAD 2 IN VENDOR'S SCOPE. THEREFORE, NOT COUNTED HERE.

LOAD CENTERS CT-LC3 THROUGH CT-LC6 ARE REPLICAS OF LOAD CENTER LC1

LOAD CENTERS CT-LC7 THROUGH CT-LC10 ARE REPLICAS OF LOAD CENTER LC2

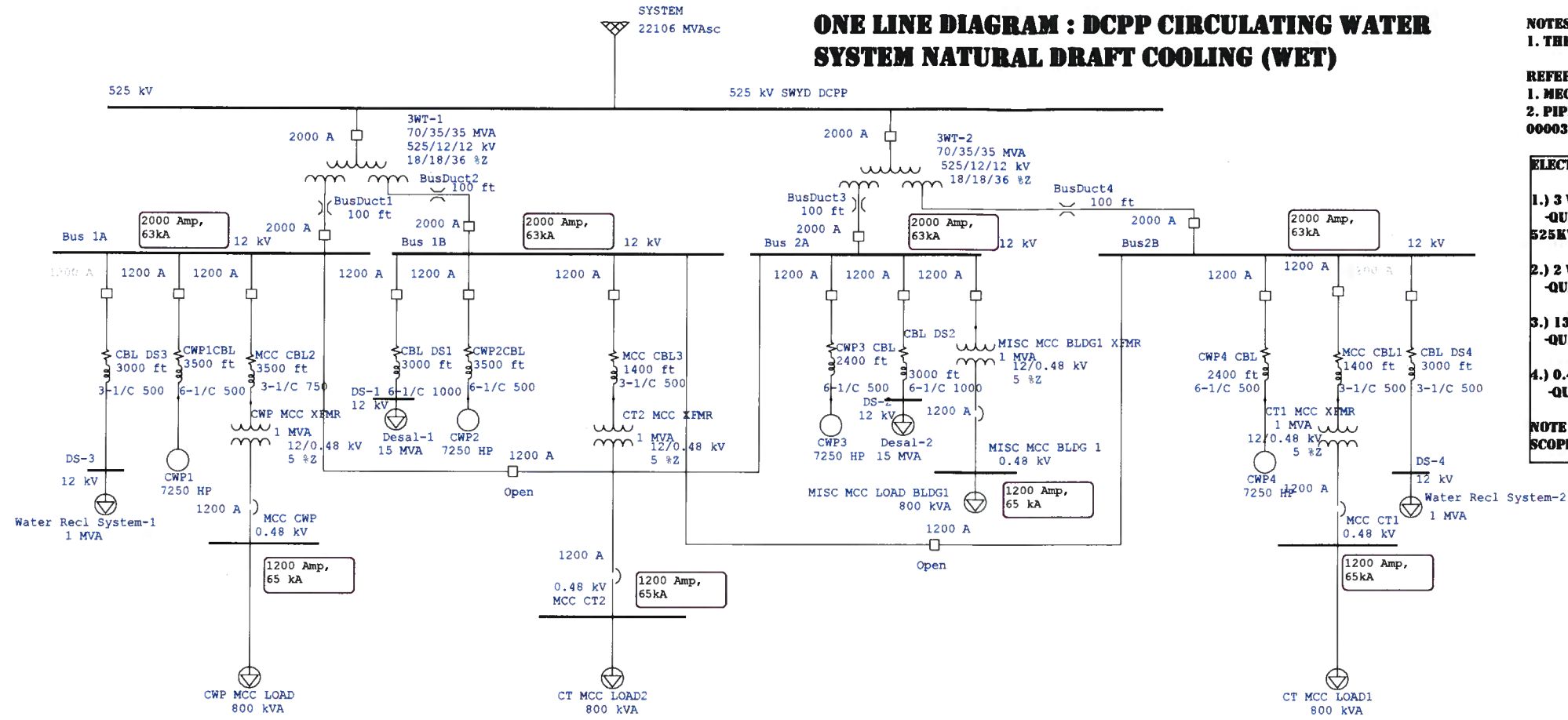
CT MCC LOAD1 AND MISC MCC LOAD BLDG1 ON LC1 ONLY. NOT ON CT-LC3 THROUGH CT-LC6

CT MCC LOAD2 ON LC2 ONLY. NOT ON CT-LC7 THROUGH CT-LC10

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JOB NO. : 25762-110
 DRAWING NO. : E1E-0000-00002
 REVISION/DATE: B 7/25/13
 REASON FOR ISSUE : FOR ESTIMATION
 TITLE : ONE LINE DIAGRAM : DCPD CIRCULATING WATER SYSTEM MECHANICAL DRAFT COOLING (DRY)
 ORIGINATED BY : J.S.
 VERIFIED BY : P.H.
 EGS :
 PE : D.E.D.



NOTES :
 1. THE NEW ELECTRICAL SYSTEM FOR UNIT 2 IS IDENTICAL

REFERENCES :
 1. MECHANICAL EQUIPMENT LIST : MOX-YA-00003
 2. PIPING AND INSTRUMENTATION DIAGRAM : M6K-WL-00003

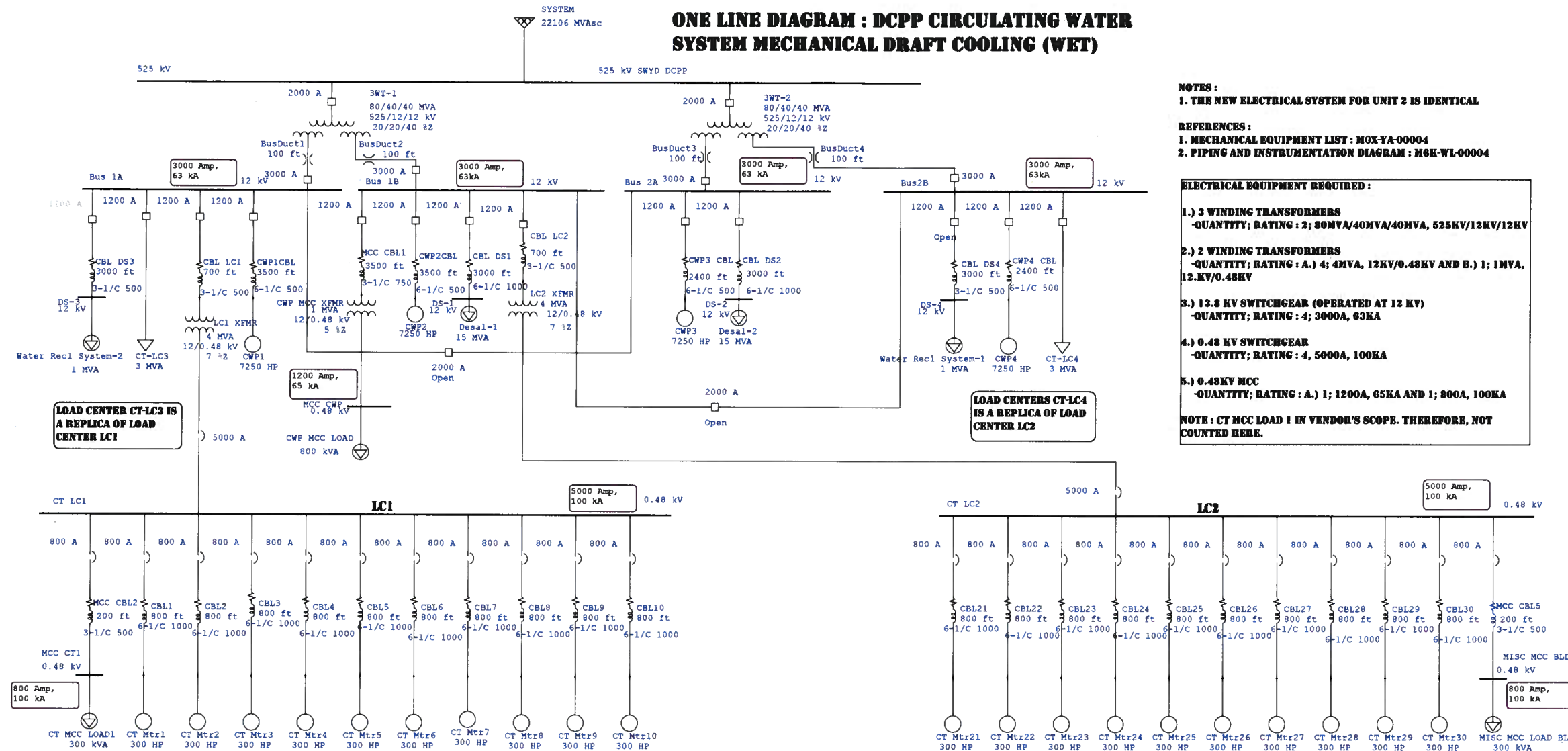
- ELECTRICAL EQUIPMENT REQUIRED :**
- 1.) 3 WINDING TRANSFORMERS
 -QUANTITY; RATING : 2; 70MVA/35MVA/35MVA, 525KV/12KV/12KV
 - 2.) 2 WINDING TRANSFORMERS
 -QUANTITY; RATING : 4; 1MVA, 12KV/0.48KV
 - 3.) 13.8 KV SWITCHGEAR (OPERATED AT 12 KV)
 -QUANTITY; RATING : 4; 2000A, 63KA
 - 4.) 0.48KV MCC
 -QUANTITY; RATING : 2; 1200A, 65KA
- NOTE : CT MCC LOAD 1 AND CT MCC LOAD 2 IN VENDOR'S SCOPE. THEREFORE, NOT COUNTED HERE.**

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JOB NO. : 25762-110
DRAWING NO. : E1K-0000-00003
REVISION/DATE: B 7/25/13
REASON FOR ISSUE : FOR ESTIMATION
TITLE : ONE LINE DIAGRAM : DCPD CIRCULATING WATER SYSTEM NATURAL DRAFT COOLING (WET)
ORIGINATED BY : JS
VERIFIED BY : [Signature]
EGS : [Signature]
PE : [Signature]

ONE LINE DIAGRAM : DCPD CIRCULATING WATER SYSTEM MECHANICAL DRAFT COOLING (WET)



- NOTES :**
1. THE NEW ELECTRICAL SYSTEM FOR UNIT 2 IS IDENTICAL
- REFERENCES :**
1. MECHANICAL EQUIPMENT LIST : MOX-YA-00004
 2. PIPING AND INSTRUMENTATION DIAGRAM : M6K-WI-00004
- ELECTRICAL EQUIPMENT REQUIRED :**
- 1.) 3 WINDING TRANSFORMERS
-QUANTITY; RATING : 2; 80MVA/40MVA/40MVA, 525KV/12KV/12KV
 - 2.) 2 WINDING TRANSFORMERS
-QUANTITY; RATING : (A.) 4; 4MVA, 12KV/0.48KV AND (B.) 1; 1MVA, 12.KV/0.48KV
 - 3.) 13.8 KV SWITCHGEAR (OPERATED AT 12 KV)
-QUANTITY; RATING : 4; 3000A, 63KA
 - 4.) 0.48 KV SWITCHGEAR
-QUANTITY; RATING : 4; 5000A, 100KA
 - 5.) 0.48KV MCC
-QUANTITY; RATING : (A.) 1; 1200A, 65KA AND 1; 800A, 100KA
- NOTE : CT MCC LOAD 1 IN VENDOR'S SCOPE. THEREFORE, NOT COUNTED HERE.**

LOAD CENTER CT-LC3 IS A REPLICA OF LOAD CENTER LC1

LOAD CENTERS CT-LC4 IS A REPLICA OF LOAD CENTER LC2

CT MCC LOAD1 ON LC1 ONLY. NOT ON CT-LC3

MISC LOAD BLDG1 ON LC2 ONLY. NOT ON CT-LC4

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JOB NO. : 25762-110

DRAWING NO. : EIK-0000-00004

REVISION/DATE: B 7/28/13

REASON FOR ISSUE : FOR ESTIMATION

TITLE : ONE LINE DIAGRAM : DCPD CIRCULATING WATER SYSTEM MECHANICAL DRAFT COOLING (WET)

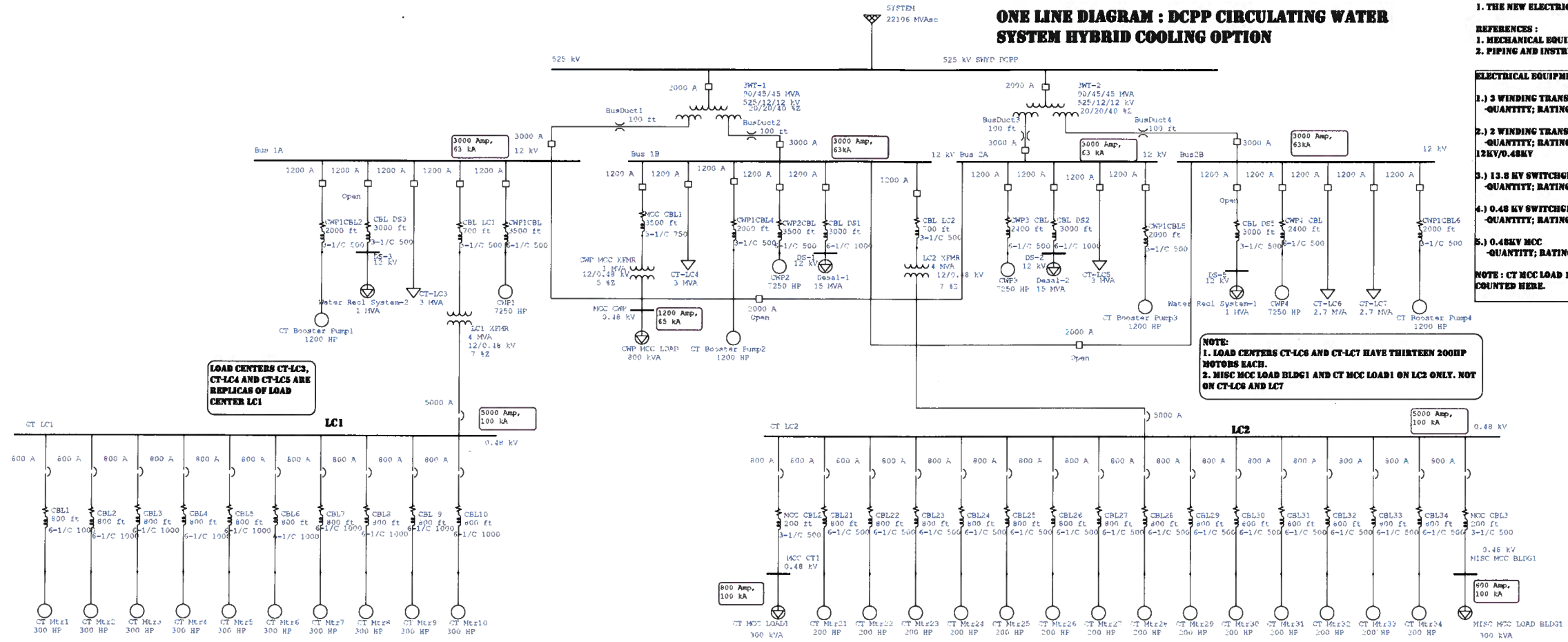
ORIGINATED BY : J.S.

VERIFIED BY : P.H.

EGS : P.H.

PE : O.G.L.

ONE LINE DIAGRAM : DCPD CIRCULATING WATER SYSTEM HYBRID COOLING OPTION



LOAD CENTERS CT-LC3, CT-LC4 AND CT-LC5 ARE REPLICAS OF LOAD CENTER LC1

NOTE:
1. LOAD CENTERS CT-LC6 AND CT-LC7 HAVE THIRTEEN 200HP MOTORS EACH.
2. MISC MCC LOAD BLDG1 AND CT MCC LOAD1 ON LC2 ONLY. NOT ON CT-LC6 AND LC7

- NOTES :**
1. THE NEW ELECTRICAL SYSTEM FOR UNIT 2 IS IDENTICAL
- REFERENCES :**
1. MECHANICAL EQUIPMENT LIST MEX-7A-00005
2. PIPING AND INSTRUMENTATION DIAGRAM MEX-WL-00005
- ELECTRICAL EQUIPMENT REQUIRED :**
- 1.) 3 WINDING TRANSFORMERS
- QUANTITY; RATING : 2; 90MVA/45MVA/15MVA, 525KV/12KV/12KV
 - 2.) 2 WINDING TRANSFORMERS
- QUANTITY; RATING : A.) 7; 4MVA, 12KV/0.48KV AND B.) 1; 1MVA, 12KV/0.48KV
 - 3.) 13.8 KV SWITCHGEAR (OPERATED AT 12 KV)
- QUANTITY; RATING : 4; 3000A, 63KA
 - 4.) 0.48 KV SWITCHGEAR
- QUANTITY; RATING : 7, 5000A, 100KA
 - 5.) 0.48KV MCC
- QUANTITY; RATING : A.) 1; 800A, 100KA AND B.) 1; 1200A, 65KA
- NOTE : CT MCC LOAD 1 IN VENDOR'S SCOPE. THEREFORE, NOT COUNTED HERE.

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JOB NO. : 25762-110

DRAWING NO. : E1K-0000-00005

REVISION/DATE: B 7/25/13

REASON FOR ISSUE : FOR ESTIMATION

TITLE : ONE LINE DIAGRAM : DCPD CIRCULATING WATER SYSTEM HYBRID COOLING OPTION

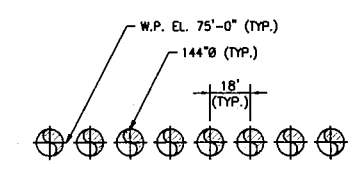
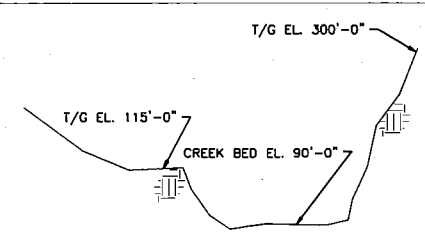
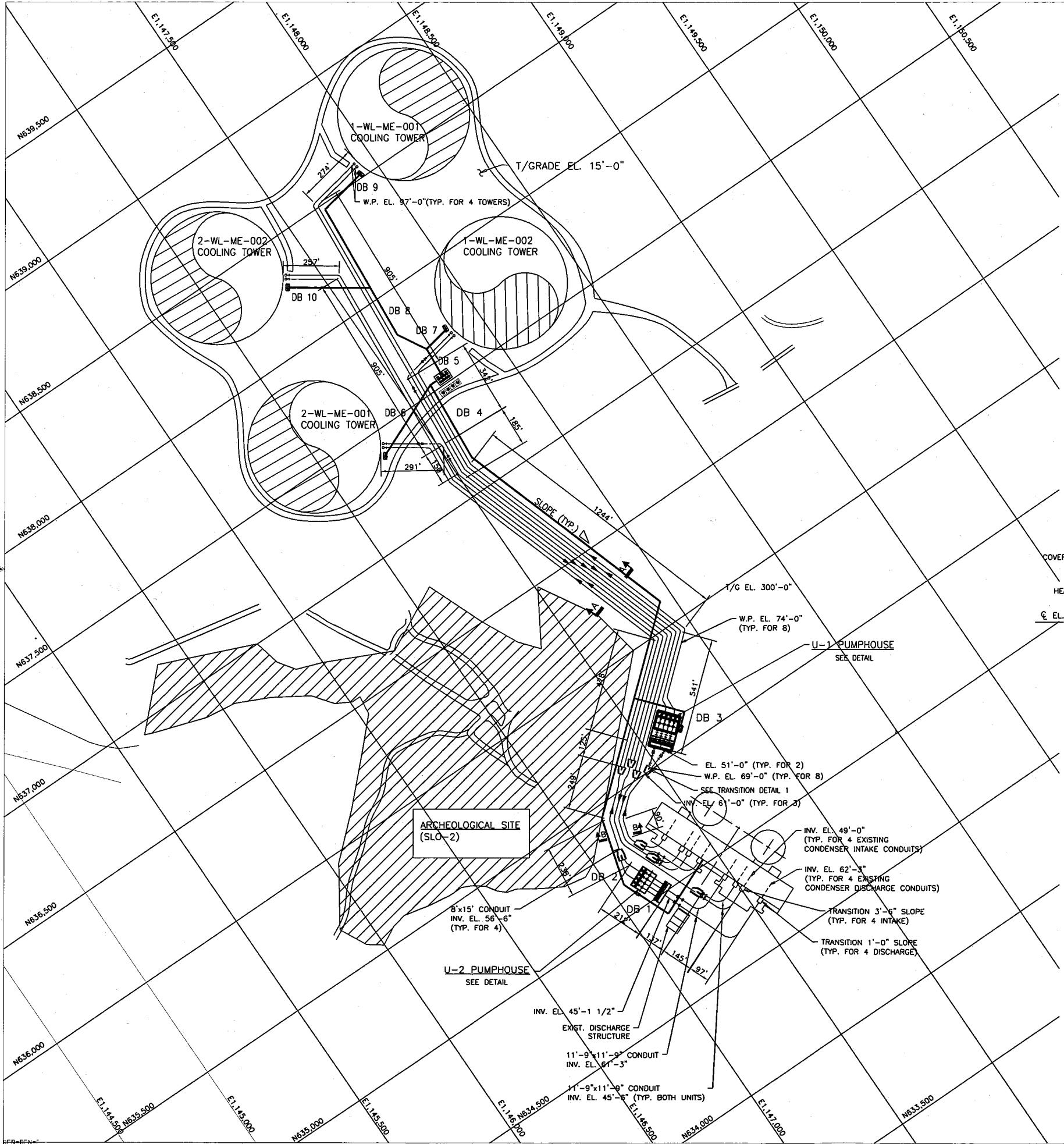
ORIGINATED BY : J.S.

VERIFIED BY : [Signature]

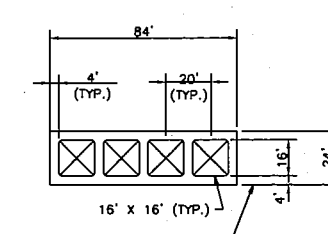
EGS : [Signature]

PE : [Signature]

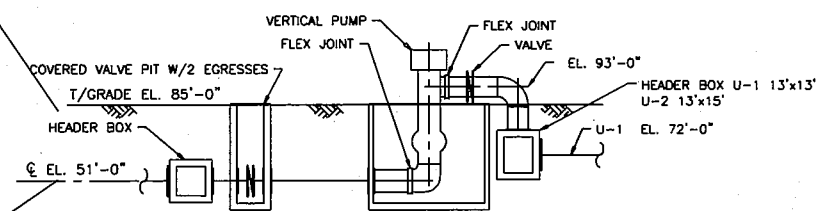
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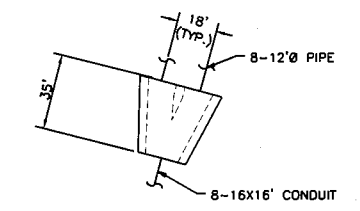
SECTION A-A
(NTS)



SECTION B-B
(NTS)

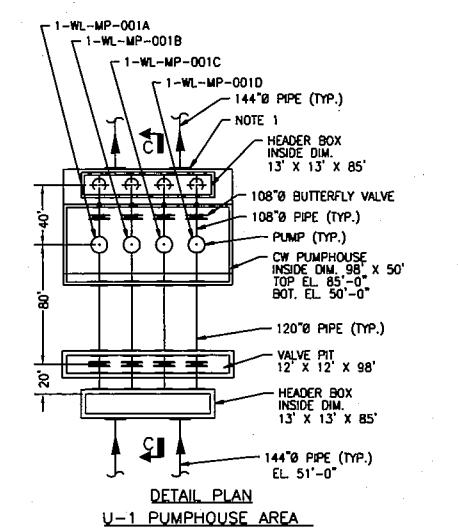


SECTION C-C
(NTS)

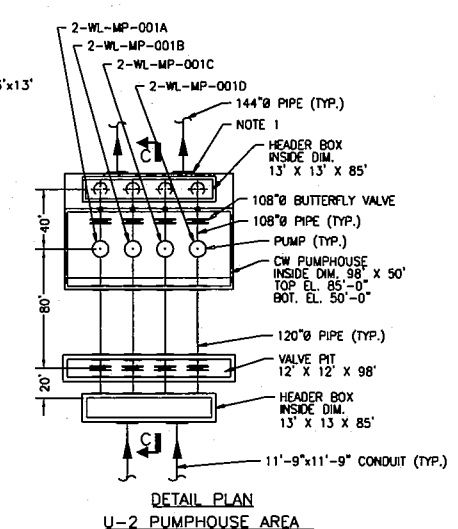


TRANSITION DETAIL 1
(N.T.S.)

REFERENCE DRAWING(S):
25762-110-PIK-WL-00010 GENERAL ARRANGEMENT



DETAIL PLAN
U-1 PUMPHOUSE AREA



DETAIL PLAN
U-2 PUMPHOUSE AREA

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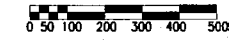
<small>BECHTEL CONFIDENTIAL © 2013 BECHTEL POWER CORPORATION (BECHTEL) CONTAINS INFORMATION CONFIDENTIAL AND PROPRIETARY TO BECHTEL AND ITS AFFILIATED COMPANIES THAT IS NOT TO BE USED, REPRODUCED, OR REPRODUCED IN ANY FORM BY ANY NON-BECHTEL PARTY WITHOUT BECHTEL'S PRIOR WRITTEN PERMISSION. ALL RIGHTS RESERVED.</small>										
NO.	DATE	REVISIONS	BY	CHK.	DESIGN	ENGR.	FRS2	ENGR.	FRS2	ENGR.
SCALE	DESIGNED	DRAWN	CHIEF ENGR.							

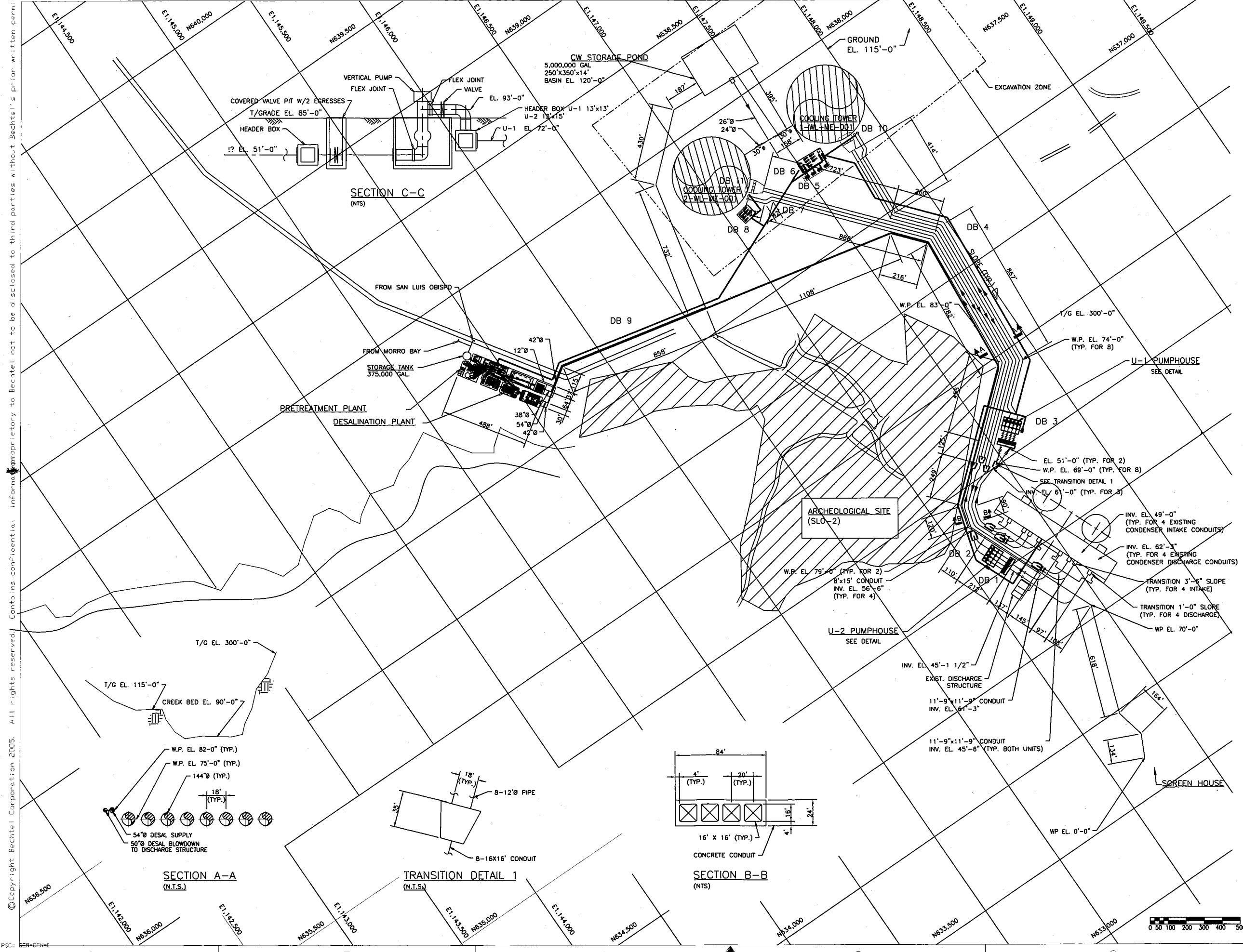
BECHTEL
FREDERICK, MARYLAND

PACIFIC GAS AND ELECTRIC
DIABLO CANYON POWER PLANT

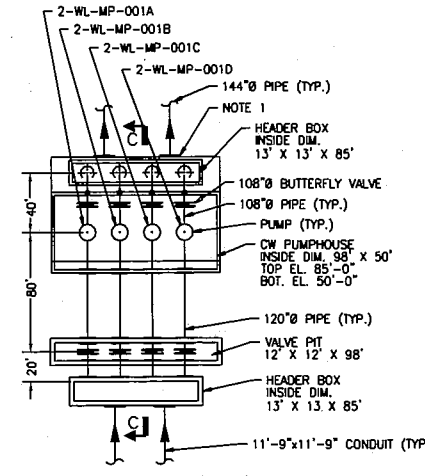
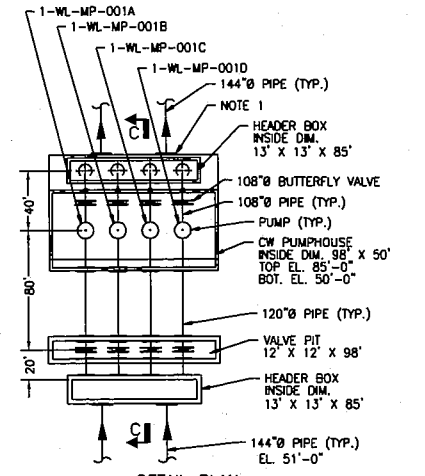
CIRCULATING WATER SYSTEM
DRY NATURAL DRAFT COOLING TOWER
RACEWAY LAYOUT

JOB NO.	DRAWING NO.	REV.
25762-110	ERK-WL-00010	A





REFERENCE DRAWING(S):
25762-110-P1K-WL-00030 GENERAL ARRANGEMENT



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REVISIONS table with columns: NO, DATE, REVISIONS, BY, CHK, DESIGN, ENGR, PROJ. Includes a signature and date.

BECHTEL FREDERICK, MARYLAND
PACIFIC GAS AND ELECTRIC
DIABLO CANYON POWER PLANT
CIRCULATING WATER SYSTEM
HYBRID DRAFT COOLING TOWER
RACEWAY LAYOUT
JOB NO. 25762-110 ERK-WL-00030
DRAWING NO. ERK-WL-00030
REV. A

JUOTC - DIABLO CANYON

Preliminary Mechanical Equipment List Dry Natural Draft Cooling

25762-110-M0X-YA-00001

00C	9/12/2013	Re-Issued for Estimate Report	RP		RP
00B	7/24/2013	Issued for Estimate Report	RP	-	RP
00A	7/10/2013	Issued for Estimate	RP	-	RP
Rev	Date	Reason for Revision	Originator	Checked	Approved

JUOTC - DIABLO CANYON
Preliminary Mechanical Equipment List

25752-110-M0X-YA-00001, Rev. 00C

System Codes

Commodity Codes

PF	Fire Protection	ME	Heat Exchange Component (Cooling Tower, Heat Exchanger)
WL	Circulating Water	MP	Pump
WO	Sea Water	MT	Tank

NOTES:

1. Commodity Codes shown are Bechtel standard codes. Bechtel Commodity codes have been assigned to existing plant equipment numbers to aid in equipment list sorts.

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC Study Dry Natural Draft Cooling

25762-110-M0X-YA-0001, Revision 00C

Quantity	Bidder Quote to be Used	Unit	Sys Code	Com. Code ¹	Seq. No.	New/ Existing	Description	Type	Capacity (% - Per Unit)	Drive Motor Size HP (or kW)	Comments	Rev.
1	Xylem Quote	1	WL	MP	001A	New	CIRCULATING WATER PUMP - Unit 1	Fabricated volute, 215,700 gpm, 115 ft TDG	1 X 25%	7250	Pump to be located in new Unit 1 house	00B
1	Xylem Quote	1	WL	MP	001B	New	CIRCULATING WATER PUMP - Unit 1	Fabricated volute, 215,700 gpm, 115 ft TDG	1 X 25%	7250	Pump to be located in new Unit 1 house	00B
1	Xylem Quote	1	WL	MP	001C	New	CIRCULATING WATER PUMP - Unit 1	Fabricated volute, 215,700 gpm, 115 ft TDG	1 X 25%	7250	Pump to be located in new Unit 1 house	00B
1	Xylem Quote	1	WL	MP	001D	New	CIRCULATING WATER PUMP - Unit 1	Fabricated volute, 215,700 gpm, 115 ft TDG	1 X 25%	7250	Pump to be located in new Unit 1 house	00B
1	Xylem Quote	2	WL	MP	001A	New	CIRCULATING WATER PUMP - Unit 2	Fabricated volute, 215,700 gpm, 115 ft TDG	1 X 25%	7250	Pump to be located in new Unit 1 house	00B
1	Xylem Quote	2	WL	MP	001B	New	CIRCULATING WATER PUMP - Unit 2	Fabricated volute, 215,700 gpm, 115 ft TDG	1 X 25%	7250	Pump to be located in new Unit 1 house	00B
1	Xylem Quote	2	WL	MP	001C	New	CIRCULATING WATER PUMP - Unit 2	Fabricated volute, 215,700 gpm, 115 ft TDG	1 X 25%	7250	Pump to be located in new Unit 1 house	00B
1	Xylem Quote	2	WL	MP	001D	New	CIRCULATING WATER PUMP - Unit 2	Fabricated volute, 215,700 gpm, 115 ft TDG	1 X 25%	7250	Pump to be located in new Unit 1 house	00B
1	GEA - CT	1	WL	ME	001A	New	NATURAL DRAFT COOLING TOWER - Unit 1	Hyperbolic, metal tower, 590 ft diameter	1 X 33%		Tower may be located adjacent to each other with minimal spacing	00A
1	GEA - CT	1	WL	ME	001B	New	NATURAL DRAFT COOLING TOWER - Unit 1	Hyperbolic, metal tower, 590 ft diameter	1 X 33%		Tower may be located adjacent to each other with minimal spacing	00A
1	GEA - CT	2	WL	ME	001B	New	NATURAL DRAFT COOLING TOWER - Unit 2	Hyperbolic, metal tower, 590 ft diameter	1 X 33%		Tower may be located adjacent to each other with minimal spacing	00A
1	GEA - CT	2	WL	ME	001C	New	NATURAL DRAFT COOLING TOWER - Unit 2	Hyperbolic, metal tower, 590 ft diameter	1 X 33%		Tower may be located adjacent to each other with minimal spacing	00A
1	GEA - CT	1	WL	MP		New	COOLING TOWER STORATE TANK TRANSFER PUMPS - UNIT 1	TBD	1 X 25%	100 hp	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MP		New	COOLING TOWER STORATE TANK TRANSFER PUMPS - UNIT 1	TBD	1 X 25%	100 hp	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MP		New	COOLING TOWER STORATE TANK TRANSFER PUMPS - UNIT 1	TBD	1 X 25%	100 hp	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MP		New	COOLING TOWER STORATE TANK TRANSFER PUMPS - UNIT 1	TBD	1 X 25%	100 hp	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MP		New	COOLING TOWER STORATE TANK TRANSFER PUMPS - UNIT 2	TBD	1 X 25%	100 hp	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MP		New	COOLING TOWER STORATE TANK TRANSFER PUMPS - UNIT 2	TBD	1 X 25%	100 hp	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MP		New	COOLING TOWER STORATE TANK TRANSFER PUMPS - UNIT 2	TBD	1 X 25%	100 hp	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 1	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC Study Dry Natural Draft Cooling

25762-110-M0X-YA-0001, Revision 00C

Quantity	Bidder Quote to be Used	Unit	Sys Code	Com. Code ¹	Seq. No.	New/ Existing	Description	Type	Capacity (% - Per Unit)	Drive Motor Size HP (or kW)	Comments	Rev.
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	DRAIN TANKS FOR COOLING TOWERS - UNIT 2	Underground, 53,000 gal, 7 per tower, Dimensions TBD	1 x 7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 1	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 1	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 1	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 1	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 1	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 2	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 2	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 2	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 2	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MT		New	HEAD TANKS FOR COOLING TOWERS - UNIT 2	Underground, 12,500 gal, 3 per tower, Dimensions TBD	1 x 16.7 %	N/A	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MP		New	COOLING TOWER WASH SYSTEM CLEANING PUMP - UNIT 1		1 X 50%	30 hp	Included in Tower vendor's scope	00A
1	GEA - CT	1	WL	MP		New	COOLING TOWER WASH SYSTEM CLEANING PUMP - UNIT 1		1 X 50%	30 hp	Included in Tower vendor's scope	00A
1	GEA - CT	2	WL	MP		New	COOLING TOWER WASH SYSTEM CLEANING PUMP - UNIT 2		1 X 50%	30 hp	Included in Tower vendor's scope	00A

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC Study Dry Natural Draft Cooling

25762-110-M0X-YA-0001, Revision 00C

Quantity	Bidder Quote to be Used	Unit	Sys Code	Com. Code ¹	Seq. No.	New/ Existing	Description	Type	Capacity (% - Per Unit)	Drive Motor Size HP (or kW)	Comments	Rev.
1	GEA - CT	2	WL	MP		New	COOLING TOWER WASH SYSTEM CLEANING PUMP - UNIT 2		1 X 50%	30 hp	Included in Tower vendor's scope	00A
1	Estimating	1	WL	MP	002A		COOLING TOWER MAKEUP PUMP - UNIT 1	Horizontal Centrifugal: 500 gpm, 100 TDH	1 x 100%	25	Make up from existing plant water source	00A
1	Estimating	1	WL	MP	002B		COOLING TOWER MAKEUP PUMP - UNIT 1	Horizontal Centrifugal: 500 gpm, 100 TDH	1 x 100%	25	Make up from existing plant water source	00A
1	Estimating	2	WL	MP	002A		COOLING TOWER MAKEUP PUMP - UNIT 2	Horizontal Centrifugal: 500 gpm, 100 TDH	1 x 100%	25	Make up from existing plant water source	00A
1	Estimating	2	WL	MP	002B		COOLING TOWER MAKEUP PUMP - UNIT 2	Horizontal Centrifugal: 500 gpm, 100 TDH	1 x 100%	25	Make up from existing plant water source	00A
1	ITT-Goulds/Flowsolve	1	WO	MP	001A	New	SALT WATER COOLING PUMP - UNIT 1	Vertical Turbine: 10,200 gpm, TDH: 100 feet	1 x 100%	350	New pumps to be located in intake structures to service only the service water heat exchangers and the condensate cooler	00B
1	ITT-Goulds/Flowsolve	1	WO	MP	001B	New	SALT WATER COOLING PUMP - UNIT 1	Vertical Turbine: 10,200 gpm, TDH: 100 feet	1 x 100%	350	New pumps to be located in intake structures to service only the service water heat exchangers and the condensate cooler	00B
1	ITT-Goulds/Flowsolve	2	WO	MP	001A	New	SALT WATER COOLING PUMP - UNIT 2	Vertical Turbine: 10,200 gpm, TDH: 100 feet	1 x 100%	350	New pumps to be located in intake structures to service only the service water heat exchangers and the condensate cooler	00B
1	ITT-Goulds/Flowsolve	2	WO	MP	001B	New	SALT WATER COOLING PUMP - UNIT 2	Vertical Turbine: 10,200 gpm, TDH: 100 feet	1 x 100%	350	New pumps to be located in intake structures to service only the service water heat exchangers and the condensate cooler	00B
1	GEA - CT	1	WL	HV		New	TOWER MOV ISOLATION VALVE - UNIT 1	MOV Butterfly, 4 per tower sector x 11 sectors per tower = 88 per unit	1 x .57%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	2	WL	HV		New	TOWER MOV ISOLATION VALVE - UNIT 2	MOV Butterfly, 4 per tower sector x 11 sectors per tower = 88 per unit	1 x .57%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	1	WL	HV		New	MOV MAKE-UP VALVE - UNIT 1	MOV Butterfly, 2 per tower (one to cleaning tank, one to storage tanks)	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	1	WL	HV		New	MOV MAKE-UP VALVE - UNIT 1	MOV Butterfly, 2 per tower (one to cleaning tank, one to storage tanks)	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	1	WL	HV		New	MOV MAKE-UP VALVE - UNIT 1	MOV Butterfly, 2 per tower (one to cleaning tank, one to storage tanks)	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	1	WL	HV		New	MOV MAKE-UP VALVE - UNIT 1	MOV Butterfly, 2 per tower (one to cleaning tank, one to storage tanks)	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	2	WL	HV		New	MOV MAKE-UP VALVE - UNIT 2	MOV Butterfly, 2 per tower (one to cleaning tank, one to storage tanks)	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	2	WL	HV		New	MOV MAKE-UP VALVE - UNIT 2	MOV Butterfly, 2 per tower (one to cleaning tank, one to storage tanks)	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	2	WL	HV		New	MOV MAKE-UP VALVE - UNIT 2	MOV Butterfly, 2 per tower (one to cleaning tank, one to storage tanks)	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	2	WL	HV		New	MOV MAKE-UP VALVE - UNIT 2	MOV Butterfly, 2 per tower (one to cleaning tank, one to storage tanks)	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	1	WL	HV		New	MOV TRANSFER PUMP VALVES - UNIT 1	MOV Butterfly, 2 per tower	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	1	WL	HV		New	MOV TRANSFER PUMP VALVES - UNIT 1	MOV Butterfly, 2 per tower	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	1	WL	HV		New	MOV TRANSFER PUMP VALVES - UNIT 1	MOV Butterfly, 2 per tower	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	1	WL	HV		New	MOV TRANSFER PUMP VALVES - UNIT 1	MOV Butterfly, 2 per tower	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	2	WL	HV		New	MOV TRANSFER PUMP VALVES - UNIT 2	MOV Butterfly, 2 per tower	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	2	WL	HV		New	MOV TRANSFER PUMP VALVES - UNIT 2	MOV Butterfly, 2 per tower	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	2	WL	HV		New	MOV TRANSFER PUMP VALVES - UNIT 2	MOV Butterfly, 2 per tower	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
1	GEA - CT	2	WL	HV		New	MOV TRANSFER PUMP VALVES - UNIT 2	MOV Butterfly, 2 per tower	1 x 25%		Isolation valves for each sector of natural draft tower included in tower vendor's scope.	00A
32	Estimating		PF	PY			Fire Hydrant	Dry Barrel Type			One hydrant every 300 ft. New Fire piping length 9775 ft	00A
1	Estimating	1	AC	MU		New	Low Pressure Steam Turbine				L(0) blades will need to be removed	00B
1	Estimating	2	AC	MU		New	Low Pressure Steam Turbine				L(0) blades will need to be removed	00B
1	Quote - Cond	1	AD	ME		EXIST	CONDENSER				Tube side design pressure to be increased to 50 psig Water boxes replaced and condenser rebundled	00C
1	Quote - Cond	2	AD	ME		EXIST	CONDENSER				Tube side design pressure to be increased to 50 psig Water boxes replaced and condenser rebundled	00C

JUOTC - DIABLO CANYON

Preliminary Mechanical Equipment List Dry Mechanical Cooling

25762-110-M0X-YA-00002

00C	9/12/2013	Re-Issued for Estimate Report	RP	-	RP
00B	7/24/2013	Issued for Estimate Report	RP	-	RP
00A	7/10/2013	Issued for Estimate	RP	-	RP
Rev	Date	Reason for Revision	Originator	Checked	Approved

JUOTC DIABLO CANYON
Preliminary Mechanical Equipment List

25762-110-M0X-YA-00002, Rev. 00C

System Codes

Commodity Codes

WL	Circulating Water	ME	Heat Exchange Component (Cooling Tower, Heat Exchanger)
WO	Sea Water	MP	Pump
		MT	Tank

NOTES:

1. Commodity Codes shown are Bechtel standard codes. Bechtel Commodity codes have been assigned to existing plant equipment numbers to aid in equipment list sorts.

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC Study
Dry Mechanical (Forced Draft) Cooling

25762-110-M0X-YA-00002, Revision 00C

Sys Code	Com. Code ¹	Seq. No.	New/ Existing	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
WL	MP	001A	New	CIRCULATING WATER PUMP - Unit 1	Fabricated volute, 215700 gpm, 115 ft TDH	1 X 25%	7250	Pump to be located in new Unit 1 pump building	00B
WL	MP	001B	New	CIRCULATING WATER PUMP - Unit 1	Fabricated volute, 215700 gpm, 115 ft TDH	1 X 25%	7250	Pump to be located in new Unit 1 pump building	00B
WL	MP	001C	New	CIRCULATING WATER PUMP - Unit 1	Fabricated volute, 215700 gpm, 115 ft TDH	1 X 25%	7250	Pump to be located in new Unit 1 pump building	00B
WL	MP	001D	New	CIRCULATING WATER PUMP - Unit 1	Fabricated volute, 215700 gpm, 115 ft TDH	1 X 25%	7250	Pump to be located in new Unit 1 pump building	00B
WL	MP	001A	New	CIRCULATING WATER PUMP - Unit 2	Fabricated volute, 215700 gpm, 115 ft TDH	1 X 25%	7250	Pump to be located in new Unit 2 pump building	00B
WL	MP	001B	New	CIRCULATING WATER PUMP - Unit 2	Fabricated volute, 215700 gpm, 115 ft TDH	1 X 25%	7250	Pump to be located in new Unit 2 pump building	00B
WL	MP	001C	New	CIRCULATING WATER PUMP - Unit 2	Fabricated volute, 215700 gpm, 115 ft TDH	1 X 25%	7250	Pump to be located in new Unit 2 pump building	00B
WL	MP	001D	New	CIRCULATING WATER PUMP - Unit 2	Fabricated volute, 215700 gpm, 115 ft TDH	1 X 25%	7250	Pump to be located in new Unit 2 pump building	00B
WL	ME	001A	New	MECHANICAL DRAFT COOLING TOWER - UNIT 1	1200 ft x 100 ft, 60 fans, 250 hp motor each fan	1 X 50%	250 each fan x 60	Rectangular arrangements	00B
WL	ME	001B	New	MECHANICAL DRAFT COOLING TOWER - UNIT 1	1200 ft x 100 ft, 60 fans, 250 hp motor each fan	1 X 50%	250 each fan x 60	Rectangular arrangements	00B
WL	ME	001A	New	MECHANICAL DRAFT COOLING TOWER - UNIT 2	1200 ft x 100 ft, 60 fans, 250 hp motor each fan	1 X 50%	250 each fan x 60	Rectangular arrangements	00B
WL	ME	001B	New	MECHANICAL DRAFT COOLING TOWER - UNIT 2	1200 ft x 100 ft, 60 fans, 250 hp motor each fan	1 X 50%	250 each fan x 60	Rectangular arrangements	00B
WO	MP	001A	New	SALT WATER COOLING PUMP - UNIT 1	Vertical Turbine: 10200 gpm, TDH 100	1 x 100%	350	New pumps to be located in intake structure to service only the service water heat exchangers and the condensate cooler	00A
WO	MP	001B	New	SALT WATER COOLING PUMP - UNIT 1	Vertical Turbine: 10200 gpm, TDH 100	1 x 100%	350	New pumps to be located in intake structure to service only the service water heat exchangers and the condensate cooler	00A
WO	MP	001A	New	SALT WATER COOLING PUMP - UNIT 2	Vertical Turbine: 10200 gpm, TDH 100	1 x 100%	350	New pumps to be located in intake structure to service only the service water heat exchangers and the condensate cooler	00A
WO	MP	001B	New	SALT WATER COOLING PUMP - UNIT 2	Vertical Turbine: 10200 gpm, TDH 100	1 x 100%	350	New pumps to be located in intake structure to service only the service water heat exchangers and the condensate cooler	00A
WL	MP	002A	New	COOLING TOWER MAKEUP PUMP - UNIT 1	Centrifugal Horizontal: 500 gpm, 100 TDH	1 x 100%	25	Make up from existing plant water source	00A
WL	MP	002B	New	COOLING TOWER MAKEUP PUMP - UNIT 1	Centrifugal Horizontal: 500 gpm, 100 TDH	1 x 100%	25	Make up from existing plant water source	00A
WL	MP	002A	New	COOLING TOWER MAKEUP PUMP - UNIT 2	Centrifugal Horizontal: 500 gpm, 100 TDH	1 x 100%	25	Make up from existing plant water source	00A
WL	MP	002B	New	COOLING TOWER MAKEUP PUMP - UNIT 2	Centrifugal Horizontal: 500 gpm, 100 TDH	1 x 100%	25	Make up from existing plant water source	00A
WL			New	COOLING TOWER SYSTEM EXPANSION TANK - UNIT 1	12,500 ft ³	1 x 50%		Included in Tower vendor's scope	00A
WL			New	COOLING TOWER SYSTEM EXPANSION TANK - UNIT 1	12,500 ft ³	1 x 50%		Included in Tower vendor's scope	00A
WL			New	COOLING TOWER SYSTEM EXPANSION TANK - UNIT 2	12,500 ft ³	1 x 50%		Included in Tower vendor's scope	00A
WL			New	COOLING TOWER SYSTEM EXPANSION TANK - UNIT 2	12,500 ft ³	1 x 50%		Included in Tower vendor's scope	00A
WL			New	UNDERGROUND WATER STORAGE TANK - UNIT 1	64,000 ft ³	1 x 50%		Included in Tower vendor's scope	00A
WL			New	UNDERGROUND WATER STORAGE TANK - UNIT 2	64,000 ft ³	1 x 50%		Included in Tower vendor's scope	00A
WL			New	COOLING TOWER DRAIN TANK TRANSFER PUMP - UNIT 1		1 x 50%	100 hp	Included in Tower vendor's scope	00A
WL			New	COOLING TOWER DRAIN TANK TRANSFER PUMP - UNIT 1		1 x 50%	100 hp	Included in Tower vendor's scope	00A

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC Study
Dry Mechanical (Forced Draft) Cooling

25762-110-M0X-YA-00002, Revision 00C

Sys Code	Com. Code 1	Seq. No.	New/ Existing	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
WL			New	COOLING TOWER DRAIN TANK TRANSFER PUMP - UNIT 2		1 x 50%	100 hp	Included in Tower vendor's scope	00A
WL			New	COOLING TOWER DRAIN TANK TRANSFER PUMP - UNIT 2		1 x 50%	100 hp	Included in Tower vendor's scope	00A
WL			New	COOLING TOWER WASH SYSTEM CLEANING PUMP - UNIT 1		1 X 100%	30 hp	Included in Tower vendor's scope	00A
WL			New	COOLING TOWER WASH SYSTEM CLEANING PUMP - UNIT 2		1 X 100%	30 hp	Included in Tower vendor's scope	00A
WL			New	MOV MAKE-UP ISOLATION VALVE - UNIT 1	Butterfly 1 per storage tank x 1 tank per tower	1 x 50%		Included in Tower vendor's scope	00A
WL			New	MOV MAKE-UP ISOLATION VALVE - UNIT 1	Butterfly 1 per storage tank x 1 tank per tower	1 x 50%		Included in Tower vendor's scope	00A
WL			New	MOV MAKE-UP ISOLATION VALVE - UNIT 2	Butterfly 1 per storage tank x 1 tank per tower	1 x 50%		Included in Tower vendor's scope	00A
WL			New	MOV MAKE-UP ISOLATION VALVE - UNIT 2	Butterfly 1 per storage tank x 1 tank per tower	1 x 50%		Included in Tower vendor's scope	00A
WL			New	MOV TOWER HALF RING ISOLATION VALVE - UNIT 1	Butterfly 2 per tower	1 x 25%		Included in Tower vendor's scope	00A
WL			New	MOV TOWER HALF RING ISOLATION VALVE - UNIT 1	Butterfly 2 per tower	1 x 25%		Included in Tower vendor's scope	00A
WL			New	MOV TOWER HALF RING ISOLATION VALVE - UNIT 1	Butterfly 2 per tower	1 x 25%		Included in Tower vendor's scope	00A
WL			New	MOV TOWER HALF RING ISOLATION VALVE - UNIT 2	Butterfly 2 per tower	1 x 25%		Included in Tower vendor's scope	00A
WL			New	MOV TOWER HALF RING ISOLATION VALVE - UNIT 2	Butterfly 2 per tower	1 x 25%		Included in Tower vendor's scope	00A
WL			New	MOV TOWER HALF RING ISOLATION VALVE - UNIT 2	Butterfly 2 per tower	1 x 25%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 1	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 1	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 1	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 1	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 1	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	2 MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 3	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 2	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 2	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 2	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 2	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A
WL			New	MOV STORAGE TANK DRAIN AND EXCESS VALVES - UNIT 2	Butterfly 3 per storage tank x 1 tank per tower	1 x 16.7%		Included in Tower vendor's scope	00A

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC Study
 Dry Mechanical (Forced Draft) Cooling

25762-110-M0X-YA-00002, Revision 00C

Sys Code	Com. Code ¹	Seq. No.	New/ Existing	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
WL			New	MOV SECTOR ISOLATION VALVE - UNIT 1, Tower A	Butterfly 4 per cooling sector x 30 sectors per tower = 120 per tower	1 x 0.42%		Included in Tower vendor's scope	00A
WL			New	MOV SECTOR ISOLATION VALVE - UNIT 1, Tower B	Butterfly 4 per cooling sector x 30 sectors per tower = 120 per tower	1 x 0.42%		Included in Tower vendor's scope	00A
WL			New	MOV SECTOR ISOLATION VALVE - UNIT 2, Tower A	Butterfly 4 per cooling sector x 30 sectors per tower = 120 per tower	1 x 0.42%		Included in Tower vendor's scope	00A
WL			New	MOV SECTOR ISOLATION VALVE - UNIT 2, Tower B	Butterfly 4 per cooling sector x 30 sectors per tower = 120 per tower	1 x 0.42%		Included in Tower vendor's scope	00A
PF			New	Fire Hydrants	Dry barrel type			Every 300 ft. New fire pipe 9772 ft.	00A
AC	MU		New	Low Pressure Steam Turbine				L(0) blades will need to be removed	00B
AC	MU		New	Low Pressure Steam Turbine				L(0) blades will need to be removed	00B
AD	ME		EXIST	CONDENSER				Tube side design pressure to be increased to 50 psig Water boxes replaced and condenser rebundled	00C
AD	ME		EXIST	CONDENSER				Tube side design pressure to be increased to 50 psig Water boxes replaced and condenser rebundled	00C

JUOTC - DIABLO CANYON

Preliminary Mechanical Equipment List Wet Natural Draft Cooling

25762-110-M0X-YA-00003

00C	9/12/2013	Re-Issued for Estimate Report	RP	-	RP
00B	7/24/2013	Issued for Estimate Report	RP	-	RP
00A	7/10/2013	Issued for Estimate	RP	-	RP
Rev	Date	Reason for Revision	Originator	Checked	Approved

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25762-110-M0X-YA-00003, Rev. 00B

System Codes

AD	Condensate
PF	Fire Protection
PI	Plant Air
TL	Circ. Wtr Chem Inj
WB	Service water
WL	Circulating Water
WO	Sea Water
WR	Raw Water (Reclaim water)

Commodity Codes

ME	Heat Exchange Component (Cooling Tower, Heat Exchanger)
MP	Pump
MT	Tank
PY	Piping Specialty

NOTES:

1. System codes are Bechtel Standard codes. Bechtel Standard codes have been assigned to existing plant equipment to aid in equipment sorts.
2. Commodity Codes shown are Bechtel standard codes. Bechtel Commodity codes have been assigned to existing plant equipment numbers to aid in equipment list sorts.
3. Valves furnished with cooling tower are included in the equipment to provide a clear understanding of the Cooling Tower Suppliers scope.

Preliminary Mechanical Equipment List

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Wet Natural Draft Cooling

25762-110-M0X-YA-00003, Revision 00B

Bidder Quote to be Used	Unit	Sys Code	Com. Code ¹	Seq. No.	New / EXISTING	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
	1	AC	MU		Exist	LP TURBINE				No modification currently required. Monitoring program should be sent up	00A
	2	AC	MU		Exist	LP TURBINE				No modification currently required. Monitoring program should be sent up	00A
Quote - Cond	1	AD	ME		EXIST	CONDENSER				Tube side design pressure to be increased to 50 psig Water boxes replaced and condenser rebundled	00A
Quote - Cond	2	AD	ME		EXIST	CONDENSER				Tube side design pressure to be increased to 50 psig Water boxes replaced and condenser rebundled	00A
Estimating	0	PY			New	FIRE HYDRANT	Dry Barrel Type			One every 300 ft, New fire piping 16,188 ft	00A
ESTIMATING	0	PI	MC	001A	New	DESAL PLANT AIR COMPRESSOR	Dry, rotary screw 200 scfm 100-125 psig	1 x 100%	125		00A
ESTIMATING	0	PI	MC	001B	New	DESAL PLANT AIR COMPRESSOR	Dry, rotary screw 200 scfm 100-125 psig	1 x 100%	125		00A
ESTIMATING	0	PI	MT	001A	New	DESAL PLANT AIR RECEIVER	5,000 gallon	1 x 100%			00A
ESTIMATING	0	PI	MT	001B	New	DESAL PLANT AIR RECEIVER	5,000 gallon	1 x 100%			00A
ESTIMATING	0	PI	MV	001A	New	DESAL PLANT AIR DRYER	Heatless, dessicant, dual towers with pre and after filters	1 x 100%		Matched to compressor	00A
ESTIMATING	0	PI	MV	001B	New	DESAL PLANT AIR DRYER	Heatless, dessicant, dual towers with pre and after filters	1 x 100%		Matched to compressor	00A
Estimating		PW	PY		New	Emergency Shower and Eyewash					00A
ESTIMATING	1	TL	MP	001A	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	2	TL	MP	001A	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	1	TL	MP	001B	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	2	TL	MP	001B	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	1	TL	MP	002A	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	2	TL	MP	002A	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	1	TL	MP	002B	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	2	TL	MP	002B	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	1	TL	MP	003A	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 1		1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	2	TL	MP	003A	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 2		1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	1	TL	MP	003B	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 1		1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	2	TL	MP	003B	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 2		1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	1	TL	MP	004A	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 1	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
ESTIMATING	1	TL	MP	004A	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 1	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
ESTIMATING	2	TL	MP	004B	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 2	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
ESTIMATING	2	TL	MP	004B	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 2	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
ESTIMATING	1	TL	MT	001	New	CIRCULATING WATER SULFURIC ACID STORAGE TANK - UNIT 1	Horizontal cylindrical with dessicant breather for vent and oil-filled loop seal for overflow	1 x 100%	N/A	Assumes common pump house for tower 001A and 001B	00A

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Bidder Quote to be Used	Unit	Sys Code	Com. Code ¹	Seq. No.	New / EXISTING	Description	Type	Capacity (% - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
ESTIMATING	2	TL	MT	001	New	CIRCULATING WATER SULFURIC ACID STORAGE TANK - UNIT 2	Horizontal cylindrical with dessicant breather for vent and oil-filled loop seal for overflow	1 x 100%	N/A	Assumes common pump house for tower 001A and 001B	00A
ESTIMATING	1	TL	MT	002	New	CIRCULATING WATER DISPERSANT STORAGE TANK - UNIT 1	5,000 gallons, shop fabricated	1 x 100%	N/A		00A
ESTIMATING	2	TL	MT	002	New	CIRCULATING WATER DISPERSANT STORAGE TANK - UNIT 2	5,000 gallons, shop fabricated	1 x 100%	N/A		00A
ESTIMATING	1	TL	MT	003	New	CIRCULATING WATER SODIUM HYPOCHLORITE STORAGE TANK - UNIT 1	15,000 gallons, shop fabricated	1 x 100%	N/A		00A
ESTIMATING	2	TL	MT	003	New	CIRCULATING WATER SODIUM HYPOCHLORITE STORAGE TANK - UNIT 2	15,000 gallons, shop fabricated	1 x 100%	N/A		00A
ESTIMATING	1	TL	MT	004	New	CIRCULATING WATER SCALE INHIBITOR STORAGE TANK - UNIT 1	5,000 gallons, shop fabricated	1 x 100%	N/A		00A
ESTIMATING	2	TL	MT	004	New	CIRCULATING WATER SCALE INHIBITOR STORAGE TANK - UNIT 2	5,000 gallons, shop fabricated	1 x 100%	N/A		00A
Estimating	1	WB	ME	2	NEW	CONDENSATE COOLER	Shell and tube, 9,500,000 btu/hr (assumed) Hot side: Flow-1500 gpm (assumed), temp out 90F Cold Side: Flow - 2150 gpm, temp out 82F			Replaces existing heat exchanger. Design information for original heat exchanger unavailable from site. Base on piping connection sizes it is estimate to have a duty 50% of the service water heat exchanger.	00A
Estimating	2	WB	ME	2	NEW	CONDENSATE COOLER	Shell and tube, 9,500,000 btu/hr (assumed) Hot side: Flow-1500 gpm (assumed), temp out 90F Cold Side: Flow - 2150 gpm, temp out 82F			Replaces existing heat exchanger. Design information for original heat exchanger unavailable from site. Base on piping connection sizes it is estimate to have a duty 50% of the service water heat exchanger.	00A
Quote -HX VHT	1	WB	ME	001A	NEW	SERVICE COOLING WATER HX	Shell and tube, 19,000,000 btu/hr Hot Side: Flow- 3000 gpm, Temp. out- 90F Cold Side: Flow - 4300 gpm, Temp. in - 82F			Replaces existing heat exchanger	00A
Quote -HX VHT	2	WB	ME	001A	NEW	SERVICE COOLING WATER HX	Shell and tube, 19,000,000 btu/hr Hot Side: Flow- 3000 gpm, Temp. out- 90F Cold Side: Flow - 4300 gpm, Temp. in - 82F			Replaces existing heat exchanger	00A
Quote -HX VHT	1	WB	ME	001B	NEW	SERVICE COOLING WATER HX	Shell and tube, 19,000,000 btu/hr Hot Side: Flow- 3000 gpm, Temp. out- 90F Cold Side: Flow - 4300 gpm, Temp. in - 82F			Replaces existing heat exchanger	00A
Quote -HX VHT	2	WB	ME	001B	NEW	SERVICE COOLING WATER HX	Shell and tube, 19,000,000 btu/hr Hot Side: Flow- 3000 gpm, Temp. out- 90F Cold Side: Flow - 4300 gpm, Temp. in - 82F			Replaces existing heat exchanger	00A
N/A	1	WL	CWP	1	EXIST	CIRCULATING WATER PUMP	Concrete volute pump			Decommission	00B
N/A	2	WL	CWP	1	EXIST	CIRCULATING WATER PUMP	Concrete volute pump			Decommission	00B
N/A	1	WL	CWP	2	EXIST	CIRCULATING WATER PUMP	Concrete volute pump			Decommission	00B
N/A	2	WL	CWP	2	EXIST	CIRCULATING WATER PUMP	Concrete volute pump			Decommission	00B
QUOTE - CT	1	WL	HV			TOWER MOV BYPASS VALVE - UNIT 1		1 X 25%	4 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL	HV			TOWER MOV BYPASS VALVE - UNIT 1		1 X 25%	4 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL	HV			TOWER MOV BYPASS VALVE - UNIT 1		1 X 25%	4 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL	HV			TOWER MOV BYPASS VALVE - UNIT 1		1 X 25%	4 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL	HV			TOWER MOV BYPASS VALVE - UNIT 2		1 X 25%	4 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL	HV			TOWER MOV BYPASS VALVE - UNIT 2		1 X 25%	4 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL	HV			TOWER MOV BYPASS VALVE - UNIT 2		1 X 25%	4 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL	HV			TOWER MOV BYPASS VALVE - UNIT 2		1 X 25%	4 hp	Provided by tower vendor.	00A
QUOTE -CT	1	WL	ME	001A	New	NATURAL DRAFT COOLING TOWER - Unit 1		1 X 50%			00A
QUOTE -CT	2	WL	ME	001A	New	NATURAL DRAFT COOLING TOWER - Unit 2		1 X 50%			00A
QUOTE -CT	1	WL	ME	001B	New	NATURAL DRAFT COOLING TOWER - Unit 1		1 X 50%			00A

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QUOTE -CT	2	WL	ME	001B	New	NATURAL DRAFT COOLING TOWER - Unit 2		1 X 50%			00A
QUOTE - PUMPS Xylem	1	WL	MP	001A	New	CIRCULATING WATER PUMP - Unit 1	Fabricated Volute, 218250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in new Unit 1 pump house	00A
QUOTE - PUMPS Xylem	2	WL	MP	001A	New	CIRCULATING WATER PUMP - Unit 2	Fabricated Volute, 218250 gpm, 110 ft TDH	1X 25%	7250	Pump to be located in new Unit 2 pump house	00A
QUOTE - PUMPS Xylem	2	WL	MP	001A	New	CIRCULATING WATER PUMP - Unit 2	Fabricated Volute, 218250 gpm, 110 ft TDH	1X 25%	7250	Pump to be located in new Unit 2 pump house	00A
QUOTE - PUMPS Xylem	1	WL	MP	001B	New	CIRCULATING WATER PUMP - Unit 1	Fabricated Volute, 218250 gpm, 110 ft TDH	1X 25%	7250	Pump to be located in new Unit 1 pump house	00A
QUOTE - PUMPS Xylem	2	WL	MP	001B	New	CIRCULATING WATER PUMP - Unit 2	Fabricated Volute, 218250 gpm, 110 ft TDH	1X 25%	7250	Pump to be located in new Unit 2 pump house	00A
QUOTE - PUMPS Xylem	2	WL	MP	001B	New	CIRCULATING WATER PUMP - Unit 2	Fabricated Volute, 218250 gpm, 110 ft TDH	1X 25%	7250	Pump to be located in new Unit 2 pump house	00A
QUOTE - PUMPS Xylem	1	WL	MP	001C	New	CIRCULATING WATER PUMP - Unit 1	Fabricated Volute, 218250 gpm, 110 ft TDH	1X 25%	7250	Pump to be located in new Unit 1 pump house	00A
QUOTE - PUMPS Xylem	1	WL	MP	001D	New	CIRCULATING WATER PUMP - Unit 1	Fabricated Volute, 218250 gpm, 110 ft TDH	1X 25%	7250	Pump to be located in new Unit 1 pump house	00A
ESTIMATING	0	WL	MT	001	New	COOLING TOWER MAKEUP STORAGE POND	Pond, 5,000,000 gallon useable	1 x 100%		≈2.5 hours (evaporation, drift & blowdown of 33,100 gpm).	00A
QUOTE - CT	1	WL	PV			TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
N/A	1	WL	SCW HX	1	EXIST	SERVICE COOLING WATER HX	Shell and tube			Remove and replace with new HX 1-WB-ME-001A	00B
N/A	2	WL	SCW HX	1	EXIST	SERVICE COOLING WATER HX	Shell and tube			Remove and replace with new HX 2-WB-ME-001A	00B
N/A	1	WL	SCW HX	2	EXIST	SERVICE COOLING WATER HX	Shell and tube			Remove and replace with new HX 1-WB-ME-001B	00B
N/A	2	WL	SCW HX	2	EXIST	SERVICE COOLING WATER HX	Shell and tube			Remove and replace with new HX 2-WB-ME-001B	00B
N/A	1	WL		1	EXIST	CONDENSATE COOLER	Shell and tube			Remove and replace with new HX 2-WB-ME-002	00B
N/A	2	WL		1	EXIST	CONDENSATE COOLER	Shell and tube			Remove and replace with new HX 2-WB-ME-002	00B
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A

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QUOTE - CT	1	WL				TOWER SECTION ISOLATION VALVE - UNIT 1	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
QUOTE - CT	2	WL				TOWER SECTION ISOLATION VALVE - UNIT 2	Gate or Butterfly	1 x 8%	1 hp	Provided by tower vendor.	00A
Anderson	0	WO	MA			MMF AIR SCOUR BLOWER		-	-	Not required	00A
Anderson	0	WO	ME		New	CIP TANK HEATER	50 KW heater, 10 KW pump		10 KW	Add 50 KW to operating power for the 50 KW heater	00A
Anderson	0	WO	ML		New	DISSOLVED AIR FLOATION	TBD Gallons, TBD L x W x H	9 x 12.5%	-		00A
Anderson	0	WO	ML		New	FIRST STAGE DUAL MEDIA FILTERS	2,630 gpm throughput	30 x 3.6%	-		00A
Anderson	0	WO	ML		New	SECOND STAGE DUAL MEDIA FILTERS	3,540 gpm throughput	22 x 5%	-		00A
Anderson	0	WO	ML		New	SWRO CARTRIDGE FILTER	4,370 gpm throughput each	18 x 5.9%	-		00A
Anderson	0	WO	ML		New	CIP CARTRIDGE FILTER	1,000 gpm throughput	1 x 100%	-		00A
Quote - Pump ITT-Goulds/Flowserve	0	WO	MP	001A	New	DESAL SEA WATER SUPPLY PUMP	Vertical Turbine, 36800 gpm, TDH: 570 feet with variable speed drive	1 x 50%	6800		00A
Quote - Pump ITT-Goulds/Flowserve	0	WO	MP	001B	New	DESAL SEA WATER SUPPLY PUMP	Vertical Turbine, 36800 gpm, TDH: 570 feet with variable speed drive	1 x 50%	6800		00A
Quote - Pump ITT-Goulds/Flowserve	0	WO	MP	001C	New	DESAL SEA WATER SUPPLY PUMP	Vertical Turbine, 36800 gpm, TDH: 570 feet with variable speed drive	1 x 50%	6800		00A
ESTIMATING	0	WO	MP	002A	New	SWRO MMF BACKWASH RETURN PUMP	Vertical Turbine, 2000 gpm, TDH 100 feet	1 x 100%	75		00A
ESTIMATING	0	WO	MP	002B	New	SWRO MMF BACKWASH RETURN PUMP	Vertical Turbine, 2000 gpm, TDH 100 feet	1 x 100%	75		00A
Anderson	0	WO	MP		New	DAF FORWARDING PUMP	9,780 gpm, 100 ft	10 x 11.1%	350		00A
Anderson	0	WO	MP		New	SWRO BOOSTER PUMP	4,240 gpm, 2,000 ft TDH	9 x 12.5%	3000		00A
Anderson	0	WO	MP		New	SWRO ENERGY RECOVERY DEVICE	5,110 gpm	9 x 12.5%	-		00A
Anderson	0	WO	MP		New	SWRO ERD BOOSTER PUMP	5,110 gpm, 200 ft TDH	9 x 12.5%	400		00A
Anderson	0	WO	MP		New	CIP RECIRCULATION PUMP	1200 gpm, 250 ft TDH	2 x 100%	100		00A
Anderson	0	WO	MP		New	SODIUM HYPOCHLORITE DOSING PUMP	25 gph	2 x 100%	1		00A

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Anderson	0	WO	MP		New	DAF COAGULANT DOSING PUMP	TBD gph	2 x 100%	1		00A
Anderson	0	WO	MP		New	MMF COAGULANT DOSING PUMP	TBD gph	2 x 100%	1		00A
Anderson	0	WO	MP		New	ACID DOSING PUMP	25 gph	2 x 100%	1		00A
Anderson	0	WO	MP		New	ANTISCALANT DOSING PUMP	TBD gph	2 x 100%	1		00A
Anderson	0	WO	MP		New	DECHLORINATION DOSING PUMP	TBD gph	2 x 100%	1		00A
Anderson	0	WO	MT		New	AIR SATURATION TANK	TBD Gallons	9 x 12.5%	-		00A
Anderson	0	WO	MT		New	CIP SOLUTION TANK	6,000 gallons	1 x 100%	-		00A
Anderson	0	WO	MT		New	SODIUM HYPOCHLORITE STORAGE TANK	21,000 gallons	1 x 100%	-		00A
Anderson	0	WO	MT		New	DAF COAGULANT STORAGE TANK	21,000 gallons	1 x 100%	-		00A
Anderson	0	WO	MT		New	MMF COAGULANT STORAGE TANK	21,000 gallons	1 x 100%	-		00A
Anderson	0	WO	MT		New	ACID STORAGE TANK	21,000 gallons	1 x 100%	-		00A
Anderson	0	WO	MT		New	ANTISCALANT STORAGE TANK	21,000 gallons	1 x 100%	-		00A
Anderson	0	WO	MT		New	DECHLORINATION STORAGE TANK	21,000 gallons	1 x 100%	-		00A
QUOTE - DESAL	0	WO	MW	001	New	DESALINATION PLANT	Multiple Train System consisting of multimedia filters (MMF), seawater reverse osmosis (SWRO) trains, clean-in-place (CIP) systems and chemical dosing systems, product flowrate - 33100 gpm.	100%		Estimated Plant area: 422,000 sq feet	00A
Anderson	0	WO	MW		New	SWRO MEMBRANE UNIT	3,670 gpm throughput	9 x 12.5%	-		00A
IDI	0	WR	MC		New	FILTER "A" VACUUM PUMP	TBD	2 x 100%	5.5		00A
IDI	0	WR	ML		New	FILTER (GREENLEAF FILTER)	2,800 gpm	1 x 100%			00A
IDI	0	WR	ML		New	FILTER PRESS	20 Cft	2 x 100%	5.0		00A
Estimating	0	WR	MP	001A	New	CLARIFIER FORWARDING PUMP	Horizontal centrifugal, 3000 gpm, 100 feet TDH	1 x 100%	125		00A
Estimating	0	WR	MP	001B	New	CLARIFIER FORWARDING PUMP	Horizontal centrifugal, 3000 gpm, 100 feet TDH	1 x 100%	125		00A
Estimating	0	WR	MP	002A	New	CLARIFIER FEED PUMP	Horizontal centrifugal, 3000 gpm, 100 feet TDH	1 x 100%	125		00A
Estimating	0	WR	MP	002B	New	CLARIFIER FEED PUMP	Horizontal centrifugal, 3000 gpm, 100 feet TDH	1 x 100%	125		00A
Estimating	0	WR	MP	003A	New	CLARIFIER MMF BACKWASH PUMP	Vertical sump pump, 1000 gpm, 100 feet TDH	1 x 100%	40		00A
Estimating	0	WR	MP	003B	New	CLARIFIER MMF BACKWASH PUMP	Vertical sump pump, 1000 gpm, 100 feet TDH	1 x 100%	40		00A
Estimating	0	WR	MP	004B	New	MORO BAY RECLAIM WATER SUPPLY PUMP	Vertical Turbine, 800 gpm, 500 feet TDH, 15 feet baseplate to suction bell inlet	1 x 100%	150	Pump station is located approximately 20 miles off site.	00C
Estimating	0	WR	MP	005A	New	SAN LUIS OBISPO RECLAIM WATER SUPPLY PUMP	Vertical Turbine, 2000 gpm, 580 feet TDH, 15 feet baseplate to suction bell inlet	1 x 100%	400	Pump station is located approximately 20 miles off site.	00C
Estimating	0	WR	MP	005B	New	SAN LUIS OBISPO RECLAIM WATER SUPPLY PUMP	Vertical Turbine, 2000 gpm, 580 feet TDH, 15 feet baseplate to suction bell inlet	1 x 100%	400	Pump station is located approximately 20 miles off site.	00C
IDI	0	WR	MP		New	CLARIFIER "A" SLUDGE RECIRCULATION / BLOWDOWN PUMP SET	140 gpm, 46 ft TDH with VFD	3 x 50%	7.5		00A
IDI	0	WR	MP		New	FILTER PRESS FEED PUMP	30 gpm, 100 psig	3 x 50%	N/A	Air operated diaphragm	00A
IDI	0	WR	MP		New	FILTRATE SUMP TRANSFER PUMP	100 gpm, 46 ft TDH	2 x 100%	2.0		00A
IDI	0	WR	MP		New	SODIUM HYPOCHLORITE DOSING PUMPS	10 gph	4 x 25%	0.3		00A
IDI	0	WR	MP		New	FERRIC CHLORIDE DOSING PUMP	20 gph	4 x 25%	0.5		00A
IDI	0	WR	MP		New	POLYELECTROLYTE DOSING PUMP	2 gph	3 x 50%	0.25		00A
Estimating	0	WR	MP	004A	New	MORO BAY RECLAIM WATER SUPPLY PUMP	Vertical Turbine, 800 gpm, 500 feet TDH, 15 feet baseplate to suction bell inlet	1 x 100%	150	Pump station is located approximately 20 miles off site.	00C
ESTIMATING	0	WR	MT	001	New	RECLAIM WATER STORAGE TANK	Field Fabricated Epoxy Coated Carbon Steel, 100,000 gallon	1 x 100%		Sized for 30 min storage, 40 ft Diameter and 40 ft High	00C
IDI	0	WR	MT		New	MIX TANK (RAPID)	9,300 gallons, 9'D x 20.25'H	1 x 100.3%			00A
IDI	0	WR	MT		New	REACTION TANK (DENSEDEG REACTOR)	37,000 gallons 19'D x 18.5'H	1 x 100.3%	-		00A
IDI	0	WR	MT		New	FILTER BACKWASH SUPPLY TANK	21,000 gallons	1 x 100%	-		00A
IDI	0	WR	MT		New	SLUDGE STORAGE TANK	6,000 gallons, 10'D x 12'H	1 x 100%	-		00A
IDI	0	WR	MT		New	SLUDGE STORAGE TANK MIXER	With VFD	1 x 100%	5.0		00A
IDI	0	WR	MT		New	SODIUM HYPOCHLORITE BULK STORAGE TANK	5000 gallons	1 x 100%	-		00A
IDI	0	WR	MT		New	FERRIC CHLORIDE STORAGE TANK	5,000 gallons	1 x 100%	-		00A

JUOTC - DIABLO CANYON

Preliminary Mechanical Equipment List Wet Mechanical Draft Cooling

25762-110-M0X-YA-00004

00C	9/12/2013	Re-issued for Estimate Report	RP	-	RP
00B	7/24/2013	Issued for Estimate Report	RP	-	RP
00A	7/10/2013	Issued for Esitmate	RP	-	RP
Rev	Date	Reason for Revision	Originator	Checked	Approved

JUOTC - DIABLO CANYON
Preliminary Mechanical Equipment List

25762-110-M0X-YA-00004, Rev. 00C

System Codes

Commodity Codes

AC	Steam Turbine	MC	Compressors/vacuum Pump
AD	Condensate	ME	Heat Exchange Component (Cooling Tower, Heat Exchanger)
PF	Fire Protection	ML	Liquid -Solid Separation (Clarifer, Automatic filters)
PI	Plant Air	MP	Pump
PW	Potable Water	MT	Tank
TL	Circ Water Chem, Inj,	MU	Driver
WB	Turbine Bldg Cooling	MW	Liquid Separation & Purification (Desal)
WL	Circulating Water	PV	Manual Valve
WO	Sea Wate/Desal		
WR	Reclaim Water		

NOTES:

1. Commodity Codes shown are Bechtel standard codes. Bechtel Commodity codes have been assigned to existing plant equipment numbers to aid in equipment list sorts.

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC StudyWet Mechanical (Forced Draft) Cooling

25762-110-M0X-YA-00004, Revision 00C

Unit	Sys Code	Com. Code	Seq. No.		Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
1	AC	MU		Exist	LP TURBINE				No modification currently required. Monitoring program should be sent up	00A
2	AC	MU		Exist	LP TURBINE				No modification currently required. Monitoring program should be sent up	00A
1	AD	ME		EXIST	CONDENSER				Tube side desgin pressure to be increased to 50 psig Water boxes replaced and condenser rebundled	00A
2	AD	ME		EXIST	CONDENSER				Tube side desgin pressure to be increased to 50 psig Water boxes replaced and condenser rebundled	00A
0	PF	PY		New	FIRE HYDRANT	Dry Barrel Type			One every 300 ft, New fire piping 16,188 ft	00A
0	PI	MC	001A	New	DESAL PLANT AIR COMPRESSOR	Dry, rotary screw 200 scfm 100-125 psig	1 x 100%	125		00A
0	PI	MC	001B	New	DESAL PLANT AIR COMPRESSOR	Dry, rotary screw 200 scfm 100-125 psig	1 x 100%	125		00A
0	PI	MT	001A	New	DESAL PLANT AIR RECEIVER	5,000 gallon	1 x 100%			00A
0	PI	MT	001B	New	DESAL PLANT AIR RECEIVER	5,000 gallon	1 x 100%			00A
0	PI	MV	001A	New	DESAL PLANT AIR DRYER	Heatless, dessicant, dual towers with pre and after filters	1 x 100%		Matched to compressor	00A
0	PI	MV	001B	New	DESAL PLANT AIR DRYER	Heatless, dessicant, dual towers with pre and after filters	1 x 100%		Matched to compressor	00A
	PW	PY		New	Emergency Shower and Eyewash					00A
1	TL	MP	001A	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
2	TL	MP	001A	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
1	TL	MP	001B	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
2	TL	MP	001B	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
1	TL	MP	002A	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
2	TL	MP	002A	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
1	TL	MP	002B	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
2	TL	MP	002B	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
1	TL	MP	003A	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
2	TL	MP	003A	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
1	TL	MP	003B	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
2	TL	MP	003B	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
1	TL	MP	004A	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 1	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
1	TL	MP	004A	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 1	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC StudyWet Mechanical (Forced Draft) Cooling

25762-110-M0X-YA-00004, Revision 00C

Unit	Sys Code	Com. Code	Seq. No.		Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
2	TL	MP	004B	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 2	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
2	TL	MP	004B	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 2	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
1	TL	MT	001	New	CIRCULATING WATER SULFURIC ACID STORAGE TANK - UNIT 1	Horizontal cylindrical with dessicant breather for vent and oil-filled loop seal for overflow	1 x 100%	N/A	Assumes common pump house for tower 001A and 001B	00A
2	TL	MT	001	New	CIRCULATING WATER SULFURIC ACID STORAGE TANK - UNIT 2	Horizontal cylindrical with dessicant breather for vent and oil-filled loop seal for overflow	1 x 100%	N/A	Assumes common pump house for tower 001A and 001B	00A
1	TL	MT	004	New	CIRCULATING WATER SCALE INHIBITOR STORAGE TANK - UNIT 1	5,000 gallons, shop fabricated	1 x 100%	N/A		00A
2	TL	MT	004	New	CIRCULATING WATER SCALE INHIBITOR STORAGE TANK - UNIT 2	5,000 gallons, shop fabricated	1 x 100%	N/A		00A
1	WB	ME	002	NEW	CONDENSATE COOLER	Shell and tube, 9,500,000 btu/hr (assumed) Hot side: Flow-1500 gpm (assumed), temp out 90F Cold Side: Flow - 2150 gpm, temp out 82F			Replaces existing heat exchanger. Design information for original heat exchanger unavailable from site. Base on piping connection sizes it is estimate to have a duty 50% of the service water heat exchanger.	00A
2	WB	ME	002	NEW	CONDENSATE COOLER	Shell and tube, 9,500,000 btu/hr (assumed) Hot side: Flow-1500 gpm (assumed), temp out 90F Cold Side: Flow - 2150 gpm, temp out 82F			Replaces existing heat exchanger. Design information for original heat exchanger unavailable from site. Base on piping connection sizes it is estimate to have a duty 50% of the service water heat exchanger.	00A
1	WB	ME	001A	New	Service Cooling Exchanger - UNIT 1	Duty: 19,000,000 btu/hr Hot Side: Out: 90F, Flow 3000 gpm Cold Side In: 78F, flow 4300	100%			00A
2	WB	ME	001A	New	Service Cooling Exchanger - UNIT 2	Duty: 19,000,000 btu/hr Hot Side: Out: 90F, Flow 3000 gpm Cold Side In: 78F, flow 4300	100%			00A
1	WB	ME	001B	New	Service Cooling Exchanger - UNIT 1	Duty: 19,000,000 btu/hr Hot Side: Out: 90F, Flow 3000 gpm Cold Side In: 78F, flow 4300	100%			00A
2	WB	ME	001B	New	Service Cooling Exchanger - UNIT 2	Duty: 19,000,000 btu/hr Hot Side: Out: 90F, Flow 3000 gpm Cold Side In: 78F, flow 4300	100%			00A
1	WB	SCW HX	1	EXIST	SERVICE COOLING WATER HX	Shell and tube			Remove and replace with new HX 1-WB-ME-001A	00B
2	WB	SCW HX	1	EXIST	SERVICE COOLING WATER HX	Shell and tube			Remove and replace with new HX 2-WB-ME-001A	00B
1	WB	SCW HX	2	EXIST	SERVICE COOLING WATER HX	Shell and tube			Remove and replace with new HX 1-WB-ME-001B	00B
2	WB	SCW HX	2	EXIST	SERVICE COOLING WATER HX	Shell and tube			Remove and replace with new HX 2-WB-ME-001B	00B
1	WB		1	EXIST	CONDENSATE COOLER	Shell and tube			Remove and replace with new HX 1-WB-ME-002	00B
2	WB		1	EXIST	CONDENSATE COOLER	Shell and tube			Remove and replace with new HX 1-WB-ME-002	00B
1	WL	CWP	1	EXIST	CIRCULATING WATER PUMP	Concrete volute pump			Decommission	00A

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC StudyWet Mechanical (Forced Draft) Cooling

25762-110-M0X-YA-00004, Revision 00C

Unit	Sys Code	Com. Code	Seq. No.		Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
2	WL	CWP	1	EXIST	CIRCULATING WATER PUMP	Concrete volute pump			Decommission	00A
1	WL	CWP	2	EXIST	CIRCULATING WATER PUMP	Concrete volute pump			Decommission	00A
2	WL	CWP	2	EXIST	CIRCULATING WATER PUMP	Concrete volute pump			Decommission	00A
1	WL	ME	001	New	MECHANICAL DRAFT COOLING TOWER - UNIT 1	Circular design, 459 ft. dia, 40 fans, 300 hp motors	1 X 100%	11,400 (285 input hp required for each fan x 40)	Minimum spacing between tower is one (1 diameter)	00A
2	WL	ME	001	New	MECHANICAL DRAFT COOLING TOWER - UNIT 2	Circular design, 459 ft. dia, 40 fans, 300 hp motors	1 X 100%	11,400 (285 input hp required for each fan x 40)	Minimum spacing between tower is one (1 diameter)	00A
1	WL	MP	001A	New	CIRCULATING WATER PUMP- Unit 1	Vertical Turbine, 218250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00A
2	WL	MP	001A	New	CIRCULATING WATER PUMP- Unit 2	Vertical Turbine, 218250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00A
1	WL	MP	001B	New	CIRCULATING WATER PUMP- Unit 1	Fabricated Volute, 218250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
2	WL	MP	001B	New	CIRCULATING WATER PUMP- Unit 2	Fabricated Volute, 218250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
1	WL	MP	001C	New	CIRCULATING WATER PUMP- Unit 1	Fabricated Volute, 218250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
2	WL	MP	001C	New	CIRCULATING WATER PUMP- Unit 2	Fabricated Volute, 218250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
1	WL	MP	001D	New	CIRCULATING WATER PUMP- Unit 1	Fabricated Volute, 218250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
2	WL	MP	001D	New	CIRCULATING WATER PUMP- Unit 2	Fabricated Volute, 218250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
0	WL	MT	001	New	COOLING TOWER MAKEUP POND - Common	5,000,000 gallons	1 x 100%		≈2.5 hours (evaporation, drift & blowdown of 33,100 gpm). Pond to be located at a higher elevation than cooling tower basins.	00A
1	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 1	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00A
1	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 1	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00A
1	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 1	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
1	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 1	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
1	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 1	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
1	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 1	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
1	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 1	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC StudyWet Mechanical (Forced Draft) Cooling

25762-110-MOX-YA-00004, Revision 00C

Unit	Sys Code	Com. Code	Seq. No.		Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
1	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 1	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
2	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 2	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00A
2	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 2	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
2	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 2	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
2	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 2	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
2	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 2	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
2	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 2	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
2	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 2	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
2	WL	PV		New	TOWER RISER ISOLATION VALVES - UNIT 2	Slide Gate	1 X 12.5%		Supplied by tower vendor.	00B
0	WO	ME		New	CIP TANK HEATER	50 KW heater, 10 KW pump		10 KW	Add 50 KW to operating power for the 50 KW heater	00A
0	WO	ML		New	DISSOLVED AIR FLOATATION	TBD Gallons, TBD L x W x H	9 x 12.5%	-		00A
0	WO	ML		New	FIRST STAGE DUAL MEDIA FILTERS	2,630 gpm throughput	30 x 3.6%	-		00A
0	WO	ML		New	SECOND STAGE DUAL MEDIA FILTERS	3,540 gpm throughput	22 x 5%	-		00A
0	WO	ML		New	SWRO CARTRIDGE FILTER	4,370 gpm throughput each	18 x 5.9%			00A
0	WO	ML		New	CIP CARTRIDGE FILTER	1,000 gpm throughput	1 x 100%	-		00A
0	WO	MP	001A	New	DESAL SEA WATER SUPPLY PUMP	Vertical Turbine, 368,800 gpm, TDH: 570 feet	1 x 50%	6800		00C
0	WO	MP	001B	New	DESAL SEA WATER SUPPLY PUMP	Vertical Turbine, 368,800 gpm, TDH: 570 feet	1 x 50%	6800		00C
0	WO	MP	001C	New	DESAL SEA WATER SUPPLY PUMP	Vertical Turbine, 368,800 gpm, TDH: 570 feet	1 x 50%	6800		00C
0	WO	MP	002A	New	SWRO MMF BACKWASH RETURN PUMP	Vertical Turbine, 2000 gpm, TDH 100 feet	1 x 100%	75		00B
0	WO	MP	002B	New	SWRO MMF BACKWASH RETURN PUMP	Vertical Turbine, 2000 gpm, TDH 100 feet	1 x 100%	75		00B
0	WO	MP		New	DAF FORWARDING PUMP	9,780 gpm, 100 ft	10 x 11.1%	350		00A
0	WO	MP		New	SWRO BOOSTER PUMP	4,240 gpm, 2,000 ft TDH	9 x 12.5%	3000		00A
0	WO	MP		New	SWRO ENERGY RECOVERY DEVICE	5,110 gpm	9 x 12.5%	-		00A
0	WO	MP		New	SWRO ERD BOOSTER PUMP	5,110 gpm, 200 ft TDH	9 x 12.5%	400		00A
0	WO	MP		New	CIP RECIRCULATION PUMP	1200 gpm, 250 ft TDH	2 x 100%	100		00A
0	WO	MP		New	SODIUM HYPOCHLORITE DOSING PUMP	25 gph	2 x 100%	1		00A
0	WO	MP		New	DAF COAGULANT DOSING PUMP	TBD gph	2 x 100%	1		00A
0	WO	MP		New	MMF COAGULANT DOSING PUMP	TBD gph	2 x 100%	1		00A
0	WO	MP		New	ACID DOSING PUMP	25 gph	2 x 100%	1		00A
0	WO	MP		New	ANTISCALANT DOSING PUMP	TBD gph	2 x 100%	1		00A
0	WO	MP		New	DECHLORINATION DOSING PUMP	TBD gph	2 x 100%	1		00A
0	WO	MT		New	AIR SATURATION TANK	TBD Gallons	9 x 12.5%	-		00A
0	WO	MT		New	CIP SOLUTION TANK	6,000 gallons	1 x 100%	-		00A
0	WO	MT		New	SODIUM HYPOCHLORITE STORAGE TANK	21,000 gallons	1 x 100%	-		00A
0	WO	MT		New	DAF COAGULANT STORAGE TANK	21,000 gallons	1 x 100%	-		00A
0	WO	MT		New	MMF COAGULANT STORAGE TANK	21,000 gallons	1 x 100%	-		00A
0	WO	MT		New	ACID STORAGE TANK	21,000 gallons	1 x 100%	-		00A

Preliminary Mechanical Equipment List

Diablo Canyon Power Plant - JUOTC StudyWet Mechanical (Forced Draft) Cooling

25762-110-MOX-YA-00004, Revision 00C

Unit	Sys Code	Com. Code	Seq. No.		Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
0	WO	MT		New	ANTISCALANT STORAGE TANK	21,000 gallons	1 x 100%	-		00A
0	WO	MT		New	DECHLORINATION STORAGE TANK	21,000 gallons	1 x 100%	-		00A
0	WO	MW	001	New	DESALINATION PLANT	Multiple Train System consisting of multimedia filters (MMF), seawater reverse osmosis (SWRO) trains, clean-in-place (CIP) systems and chemical dosing systems, product flowrate - 33100 gpm.	100%		Estimated Plant area: 422,000 sq feet	00A
0	WO	MW		New	SWRO MEMBRANE UNIT	3,670 gpm throughput	9 x 12.5%	-		00A
0	WR	MC		New	FILTER "A" VACUUM PUMP	TBD	2 x 100%	5.5		00A
0	WR	ML		New	FILTER (GREENLEAF FILTER)	2,800 gpm	1 x 100%			00A
0	WR	ML		New	FILTER PRESS	20 Cft	2 x 100%	5.0		00A
0	WR	MP	001A		CLARIFIER FORWARDING PUMP	Horizontal centrifugal, 3000 gpm, 100 feet TDH	1 x 100%			00A
0	WR	MP	001B		CLARIFIER FORWARDING PUMP	Horizontal centrifugal, 3000 gpm, 100 feet TDH	1 x 100%			00A
0	WR	MP	002A	New	RECLAIM WATER CLARIFIER FEED PUMP	Horizontal centrifugal, 3000 gpm, 100 feet TDH	1 x 100%	125		00C
0	WR	MP	002B	New	RECLAIM WATER CLARIFIER FEED PUMP	Horizontal centrifugal, 3000 gpm, 100 feet TDH	1 x 100%	125		00C
0	WR	MP	003A		CLARIFIER MMF BACKWASH PUMP	Vertical Centrifugal, 1000 gpm, 100 feet TDH	1 x 100%			00A
0	WR	MP	003B		CLARIFIER MMF BACKWASH PUMP	Vertical Centrifugal, 1000 gpm, 100 feet TDH	1 x 100%			00A
0	WR	MP	004B	New	MORO BAY RECLAIM WATER SUPPLY PUMP	Vertical Turbine, 800 gpm, 500 feet TDH, 15 feet baseplate to suction bell inlet	1 x 100%	150	Pump station is located approximately 20 miles off site.	00C
0	WR	MP	005A	New	SAN LUIS OBISPO RECLAIM WATER SUPPLY PUMP	Vertical Turbine, 2000 gpm, 580 feet TDH, 15 feet baseplate to suction bell inlet	1 x 100%	400	Pump station is located approximately 20 miles off site.	00C
0	WR	MP	005B	New	SAN LUIS OBISPO RECLAIM WATER SUPPLY PUMP	Vertical Turbine, 2000 gpm, 580 feet TDH, 15 feet baseplate to suction bell inlet	1 x 100%	400	Pump station is located approximately 20 miles off site.	00C
0	WR	MP		New	CLARIFIER "A" SLUDGE RECIRCULATION / BLOWDOWN PUMP SET	140 gpm, 46 ft TDH with VFD	3 x 50%	7.5		00A
0	WR	MP		New	FILTER PRESS FEED PUMP	30 gpm, 100 psig	3 x 50%	N/A	Air operated diaphragm	00A
0	WR	MP		New	FILTRATE SUMP TRANSFER PUMP	100 gpm, 46 ft TDH	2 x 100%	2.0		00A
0	WR	MP		New	SODIUM HYPOCHLORITE DOSING PUMPS	10 gph	4 x 25%	0.3		00A
0	WR	MP		New	FERRIC CHLORIDE DOSING PUMP	20 gph	4 x 25%	0.5		00A
0	WR	MP		New	POLYELECTROLYTE DOSING PUMP	2 gph	3 x 50%	0.25		00A
0	WR	MP	004A	New	MORO BAY RECLAIM WATER SUPPLY PUMP	Vertical Turbine, 800 gpm, 500 feet TDH, 15 feet baseplate to suction bell inlet	1 x 100%	150	Pump station is located approximately 20 miles off site.	00C
0	WR	MT	001	New	RECLAIM WATER STORAGE TANK	Field Fabricated Epoxy Coated Carbon Steel, 100,000 gallon	1 x 100%		Sized for 30 min storage, 40 ft Diameter and 40 ft High	00C
0	WR	MT		New	MIX TANK (RAPID)	9,300 gallons, 9'D x 20.25'H	1 x 100.3%			00A
0	WR	MT		New	REACTION TANK (DENSEDEG REACTOR)	37,000 gallons 19'D x 18.5'H	1 x 100.3%	-		00A
0	WR	MT		New	FILTER BACKWASH SUPPLY TANK	21,000 gallons	1 x 100%	-		00A
0	WR	MT		New	SLUDGE STORAGE TANK	6,000 gallons, 10'D x 12'H	1 x 100%	-		00A
0	WR	MT		New	SLUDGE STORAGE TANK MIXER	With VFD	1 x 100%	5.0		00A
0	WR	MT		New	SODIUM HYPOCHLORITE BULK STORAGE TANK	5000 gallons	1 x 100%	-		00A
0	WR	MT		New	FERRIC CHLORIDE STORAGE TANK	5,000 gallons	1 x 100%	-		00A
0	WR			New	MIX TANK MIXER	With VFD	1 x 100%	5.0		00A
0	WR			New	REACTION TANK MIXER	With VFD	3 x 33.3%	7.5		00A
0	WR			New	CLARIFIER (DENSEDEG CLARIFIER / THICKENER)	2,800 gpm 26'D x 18.5'H	1 x 100%	-		00A
0	WR			New	CLARIFIER SLUDGE SCRAPER	Two arms	1 x 100%	0.5		00A

Unit	Sys Code	Com. Code	Seq. No.	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
	XN			DESAL AREA SANITARY LIFT STATION	48" diameter concrete sump, vented cover, duplex submersible pumps (50 gpm, TH: 100 ft), control panel, external valve box,				00A

JUOTC - DIABLO CANYON

Preliminary Mechanical Equipment List Hybrid Cooling

25762-110-M0X-YA-00005

00C	9/12/2012	Re-Issued for Estimate Report	RP	-	RP
00B	7/24/2013	Issued for Estimate Report	RP	-	RP
00A	7/10/2013	Issued for Estimating	RP	-	RP
Rev	Date	Reason for Revision	Originator	Checked	Approved

JUOTC- DIABLO CANYON
Preliminary Mechanical Equipment List

25762-11--M0X-YA-00005, Rev. 00C

<u>System Codes</u>		<u>Commodity Codes</u>	
AC	Steam Turbine	MC	Compressors/vacuum Pump
AD	Condensate	ME	Heat Exchange Component (Cooling Tower, Heat Exchanger)
PF	Fire Protection	ML	Liquid -Solid Separation (Clarifier, Automatic filters)
PI	Plant Air	MP	Pump
PW	Potable Water	MT	Tank
TL	Circ Water Chem, Inj,	MU	Driver
WB	Turbine Bldg Cooling	MW	Liquid Separation & Purification (Desal)
WL	Circulating Water	PV	Manual Valve
WO	Sea Wate/Desal		
WR	Reclaim Water		

NOTES:

1. Commodity Codes shown are Bechtel standard codes. Bechtel Commodity codes have been assigned to existing plant equipment numbers to aid in equipment list sorts.

Sys Code	Com. Code	Seq. No.	New/ Existing	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
AC	MU		Exist	LP TURBINE				No modification currently required. Monitoring program should be sent up	00A
AC	MU		Exist	LP TURBINE				No modification currently required. Monitoring program should be sent up	00A
AD	ME		EXIST	CONDENSER				Tube side design pressure to be increased to 50 psig	00A
AD	ME		EXIST	CONDENSER				Water boxes replaced and condenser rebundled	00A
AD	ME		EXIST	CONDENSER				Water boxes replaced and condenser rebundled	00A
PF	PY		New	FIRE HYDRANT	Dry Barrel Type			One every 300 ft, New fire piping 16,188 ft	00A
PI	MC	001A	New	DESAL PLANT AIR COMPRESSOR	Dry, rotary screw 200 scfm 100-125 psig	1 x 100%	125		00A
PI	MC	001B	New	DESAL PLANT AIR COMPRESSOR	Dry, rotary screw 200 scfm 100-125 psig	1 x 100%	125		00A
PI	MT	001A	New	DESAL PLANT AIR RECEIVER	5,000 gallon	1 x 100%			00A
PI	MT	001B	New	DESAL PLANT AIR RECEIVER	5,000 gallon	1 x 100%			00A
PI	MV	001A	New	DESAL PLANT AIR DRYER	Heatless, dessicant, dual towers with pre and after filters	1 x 100%		Matched to compressor	00A
PI	MV	001B	New	DESAL PLANT AIR DRYER	Heatless, dessicant, dual towers with pre and after filters	1 x 100%		Matched to compressor	00A
PW	PY		New	Emergency Shower and Eyewash					00A
TL	MP	001A	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	001A	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	001B	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	001B	New	CIRCULATING WATER SULFURIC ACID PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	002A	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	002A	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	002B	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	002B	New	CIRCULATING WATER DISPERSANT PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	003A	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	003A	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	003B	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 1	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	003B	New	CIRCULATING WATER SODIUM HYPOCHLORITE PUMP - UNIT 2	Positive displacement diaphragm metering pump	1 x 100%	<1	Assumes common pump house for tower 001A and 001B	00A
TL	MP	004A	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 1	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
TL	MP	004A	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 2	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
TL	MP	004B	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 1	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
TL	MP	004B	New	CIRCULATING WATER SCALE INHIBITOR PUMP - UNIT 2	Positive displacement diaphragm metering pump	TBD	<1	Assumes common pump house for tower 001A and 001B; QTY to be determined when budgetary bids are received	00A
TL	MT	001	New	CIRCULATING WATER SULFURIC ACID STORAGE TANK - UNIT 1	Horizontal cylindrical with dessicant breather for vent and oil-filled loop seal for overflow	1 x 100%		Assumes common pump house for tower 001A and 001B	00A
TL	MT	001	New	CIRCULATING WATER SULFURIC ACID STORAGE TANK - UNIT 2	Horizontal cylindrical with dessicant breather for vent and oil-filled loop seal for overflow	1 x 100%		Assumes common pump house for tower 001A and 001B	00A

Sys Code	Com. Code	Seq. No.	New/ Existing	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
TL	MT	002	New	CIRCULATING WATER DISPERSANT STORAGE TANK - UNIT 1		1 x 100%			00A
TL	MT	002	New	CIRCULATING WATER DISPERSANT STORAGE TANK - UNIT 2		1 x 100%			00A
TL	MT	003	New	CIRCULATING WATER SODIUM HYPOCHLORITE STORAGE TANK - UNIT 1	Vertical cylindrical	1 x 100%			00A
TL	MT	003	New	CIRCULATING WATER SODIUM HYPOCHLORITE STORAGE TANK - UNIT 2	Vertical cylindrical	1 x 100%			00A
TL	MT	004	New	CIRCULATING WATER SCALE INHIBITOR STORAGE TANK - UNIT 1		1 x 100%			00A
TL	MT	004	New	CIRCULATING WATER SCALE INHIBITOR STORAGE TANK - UNIT 2		1 x 100%			00A
WB	ME	002	New	CONDENSATE COOLER	Shell and tube, 9,500,000 btu/hr (assumed) Hot side: Flow-1500 gpm (assumed), temp out 90F			Replaces existing heat exchanger. Design information for original heat exchanger unavailable from site. Base on piping connection	00B
WB	ME	002	New	CONDENSATE COOLER	Shell and tube, 9,500,000 btu/hr (assumed) Hot side: Flow-1500 gpm (assumed), temp out 90F Duty: 19,000,000 btu/hr	100%		Replaces existing heat exchanger. Design information for original heat exchanger unavailable from site. Base on piping connection	00B
WB	ME	001A	New	Service Cooling Exchanger - UNIT 1	Hot Side: Out: 90F, Flow 3000 gpm	100%			00A
WB	ME	001A	New	Service Cooling Exchanger - UNIT 2	Duty: 19,000,000 btu/hr Hot Side: Out: 90F, Flow 3000 gpm	100%			00A
WB	ME	001B	New	Service Cooling Exchanger - UNIT 1	Duty: 19,000,000 btu/hr Hot Side: Out: 90F, Flow 3000 gpm	100%			00A
WB	ME	001B	New	Service Cooling Exchanger - UNIT 2	Duty: 19,000,000 btu/hr Hot Side: Out: 90F, Flow 3000 gpm	100%			00A
WL	ME	001A	New	MECHANICAL DRAFT HYBRID (WET/DRY) COOLING TOWER - UNIT 1	Circular design, 459 ft. dia, Wet section - 40 fans, 300 hp motors and Dry section - 40 fans, 200 hp motors	1 X 100%	19,000 (285 input power required each	Minimum spacing between tower is one (1 diameter)	00A
WL	ME	001A	New	MECHANICAL DRAFT HYBRID (WET/DRY) COOLING TOWER - UNIT 2	Circular design, 459 ft. dia, Wet section - 40 fans, 300 hp motors and Dry section - 40 fans, 200 hp motors	1 X 100%	19,000 (285 input power required each	Minimum spacing between tower is one (1 diameter)	00A
WL	MP	001A	New	CIRCULATING WATER PUMP - Unit 1	Fabricated Volute, 218,250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
WL	MP	001A	New	CIRCULATING WATER PUMP - Unit 2	Fabricated Volute, 218,250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
WL	MP	001B	New	CIRCULATING WATER PUMP - Unit 1	Fabricated Volute, 218,250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
WL	MP	001B	New	CIRCULATING WATER PUMP - Unit 2	Fabricated Volute, 218,250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
WL	MP	001C	New	CIRCULATING WATER PUMP - Unit 1	Fabricated Volute, 218,250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
WL	MP	001C	New	CIRCULATING WATER PUMP - Unit 2	Fabricated Volute, 218,250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
WL	MP	001D	New	CIRCULATING WATER PUMP - Unit 1	Fabricated Volute, 218,250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
WL	MP	001D	New	CIRCULATING WATER PUMP - Unit 2	Fabricated Volute, 218,250 gpm, 110 ft TDH	1 X 25%	7250	Pump to be located in common pump house for tower 001A & 001B	00B
WL	MP	002A	New	HYBRID COOLING TOWER BOOSTER PUMP - UNIT 1	4 Pumps per Tower, 25 ft Static Head	1 X 25%	1140	Supplied by tower vendor.	00B
WL	MP	002A	New	HYBRID COOLING TOWER BOOSTER PUMP - UNIT 2	4 Pumps per Tower, 25 ft Static Head	1 X 25%	1140	Supplied by tower vendor.	00B
WL	MP	002B	New	HYBRID COOLING TOWER BOOSTER PUMP - UNIT 1	4 Pumps per Tower, 25 ft Static Head	1 X 25%	1140	Supplied by tower vendor.	00B
WL	MP	002B	New	HYBRID COOLING TOWER BOOSTER PUMP - UNIT 2	4 Pumps per Tower, 25 ft Static Head	1 X 25%	1140	Supplied by tower vendor.	00B
WL	MP	002C	New	HYBRID COOLING TOWER BOOSTER PUMP - UNIT 1	4 Pumps per Tower, 25 ft Static Head	1 X 25%	1140	Supplied by tower vendor.	00B
WL	MP	002C	New	HYBRID COOLING TOWER BOOSTER PUMP - UNIT 2	4 Pumps per Tower, 25 ft Static Head	1 X 25%	1140	Supplied by tower vendor.	00B

Preliminary Mechanical Equipment List Diablo Canyon Power Plant - JUOTC StudyWet / Dry (Hybrid) Mechanical (Forced Draft) Cooling 25762-110-MOX-YA-00005, Revision 00C

Sys Code	Com. Code	Seq. No.	New/ Existing	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
WL	MP	002D	New	HYBRID COOLING TOWER BOOSTER PUMP - UNIT 1	4 Pumps per Tower, 25 ft Static Head	1 X 25%	1140	Supplied by tower vendor.	00B
WL	MP	002D	New	HYBRID COOLING TOWER BOOSTER PUMP - UNIT 2	4 Pumps per Tower, 25 ft Static Head	1 X 25%	1140	Supplied by tower vendor.	00B
WL	MP	003A	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 1	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003A	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 2	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003B	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 1	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003B	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 2	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003C	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 1	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003C	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 2	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003D	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 1	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003D	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 2	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003E	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 1	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003E	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 2	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003F	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 1	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003F	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 2	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003G	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 1	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003G	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 2	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003H	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 1	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MP	003H	New	HYBRID COOLING TOWER VACUUM PUMP - UNIT 2	8 Pumps per Tower	1 X 12.5%		Supplied by tower vendor.	00B
WL	MT	001	New	COOLING TOWER MAKEUP STORAGE POND	Pond, 5,000,000 gallons useable	100%		≈2.8 hours (evaporation, drift & blowdown of 33,100 gpm). May use common 5,000,000 gallon pond in lieu of two tanks.	00A
WL	HV		New	HYBRID TOWER MOV ISOLATION VALVES - UNIT 1	Butterfly	1 X 12.5%		Supplied by tower vendor.	00A
WL	HV		New	HYBRID TOWER MOV ISOLATION VALVES - UNIT 1	Butterfly	1 X 12.5%		Supplied by tower vendor.	00A
WL	HV		New	HYBRID TOWER MOV ISOLATION VALVES - UNIT 1	Butterfly	1 X 12.5%		Supplied by tower vendor.	00A
WL	HV		New	HYBRID TOWER MOV ISOLATION VALVES - UNIT 1	Butterfly	1 X 12.5%		Supplied by tower vendor.	00A
WL	HV		New	HYBRID TOWER MOV ISOLATION VALVES - UNIT 1	Butterfly	1 X 12.5%		Supplied by tower vendor.	00A
WL	HV		New	HYBRID TOWER MOV ISOLATION VALVES - UNIT 1	Butterfly	1 X 12.5%		Supplied by tower vendor.	00A
WL	HV		New	HYBRID TOWER MOV ISOLATION VALVES - UNIT 1	Butterfly	1 X 12.5%		Supplied by tower vendor.	00A
WL	HV		New	HYBRID TOWER MOV ISOLATION VALVES - UNIT 1	Butterfly	1 X 12.5%		Supplied by tower vendor.	00A
WL	HV		New	HYBRID TOWER MOV ISOLATION VALVES - UNIT 2	Butterfly	1 X 12.5%		Supplied by tower vendor.	00A

Preliminary Mechanical Equipment List Diablo Canyon Power Plant - JUOTC StudyWet / Dry (Hybrid) Mechanical (Forced Draft) Cooling 25762-110-MDX-YA-00005, Revision 00C

Rev.	Comments	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Type	Description	New/ Existing	Seq. No.	Com. Code	Sys Code	Rev.
00A		9 x 12.5%	-	TBD Gallons	AIR SATURATION TANK	New		MT	WO	00A
00A		1 x 100%	-	16,000 gallons	CIP SOLUTION TANK	New		MT	WO	00A
00A		1 x 100%	-	21,000 gallons	SODIUM HYPOCHLORITE STORAGE TANK	New		MT	WO	00A
00A		1 x 100%	-	21,000 gallons	DAF COAGULANT STORAGE TANK	New		MT	WO	00A
00A		1 x 100%	-	21,000 gallons	MMF COAGULANT STORAGE TANK	New		MT	WO	00A
00A		1 x 100%	-	21,000 gallons	ACID STORAGE TANK	New		MT	WO	00A
00A		1 x 100%	-	21,000 gallons	ANTISCALANT STORAGE TANK	New		MT	WO	00A
00A		1 x 100%	-	21,000 gallons	DECHLORINATION STORAGE TANK	New		MT	WO	00A
00A	Estimated Plant area: 422,000 sq feet	100%		Multiple Train System consisting of multimedia filters (MMF), seawater reverse osmosis (SWRO) trains, clean-in-place (CIP) systems and chemical dosing systems, product flowrate - 33100 gpm.	DESALINATION PLANT	New	001	MW	WO	00A
00A		9 x 12.5%	-	TBD	SWRO MEMBRANE UNIT	New		MW	WO	00A
00A		2 x 100%	5.5	2,800 gpm	FILTER "A" VACUUM PUMP	New		MC	WR	00A
00A		1 x 100%		20 CR	FILTER (GREENLEAF FILTER)	New		ML	WR	00A
00A		2 x 100%	5.0	Horizontal centrifugal, 3000 gpm, 100 feet TDH	CLARIFIER FORWARDING PUMP	New	001A	MP	WR	00A
00B		1 x 100%		Horizontal centrifugal, 3000 gpm, 100 feet TDH	CLARIFIER FORWARDING PUMP	New	001B	MP	WR	00B
00C		1 x 100%		Horizontal centrifugal, 3000 gpm, 100 feet TDH	RECLAIM WATER CLARIFIER FEED PUMP	New	002A	MP	WR	00C
00C		1 x 100%		Horizontal centrifugal, 3000 gpm, 100 feet TDH	RECLAIM WATER CLARIFIER FEED PUMP	New	002B	MP	WR	00C
00A		1 x 100%		Vertical Centrifugal, 1000 gpm, 100 feet TDH	CLARIFIER MMF BACKWASH PUMP	New	003A	MP	WR	00A
00A		1 x 100%		Vertical Centrifugal, 1000 gpm, 100 feet TDH	CLARIFIER MMF BACKWASH PUMP	New	003B	MP	WR	00A
00C	Pump station is located approximately 20 miles off site.	1 x 100%	150	Vertical Turbine, 800 gpm, 500 feet TDH, 15 feet baseplate to suction bell inlet	MORO BAY RECLAIM WATER SUPPLY PUMP	New	004A	MP	WR	00C
00C	Pump station is located approximately 20 miles off site.	1 x 100%	150	Vertical Turbine, 800 gpm, 500 feet TDH, 15 feet baseplate to suction bell inlet	MORO BAY RECLAIM WATER SUPPLY PUMP	New	004B	MP	WR	00C
00C	Pump station is located approximately 20 miles off site.	1 x 100%	400	Vertical Turbine, 2000 gpm, 580 feet TDH, 15 feet baseplate to suction bell inlet	SAN LUIS OBISPO RECLAIM WATER SUPPLY PUMP	New	005A	MP	WR	00C
00C	Pump station is located approximately 20 miles off site.	1 x 100%	400	Vertical Turbine, 2000 gpm, 580 feet TDH, 15 feet baseplate to suction bell inlet	SAN LUIS OBISPO RECLAIM WATER SUPPLY PUMP	New	005B	MP	WR	00C
00A		3 x 50%	7.5	140 gpm, 46 ft TDH with VFD	CLARIFIER "A" SLUDGE RECIRCULATION / BLOWDOWN PUMP SET	New		MP	WR	00A
00A	Air operated diaphragm	3 x 50%	N/A	30 gpm, 100 psig	FILTER PRESS FEED PUMP	New		MP	WR	00A
00A		2 x 100%	2.0	100 gpm, 46 ft TDH	FILTRATE SUMP TRANSFER PUMP	New		MP	WR	00A
00A		4 x 25%	0.3	10 gpm	SODIUM HYPOCHLORITE DOSING PUMPS	New		MP	WR	00A
00A		4 x 25%	0.5	20 gpm	FERRIC CHLORIDE DOSING PUMP	New		MP	WR	00A
00A		3 x 50%	0.25	2 gph	POLYELECTROLYTE DOSING PUMP	New		MP	WR	00A
00C	Sized for 30 min storage, 40 ft Diameter and 40 ft High	1 x 100%		Field Fabricated Epoxy Coated Carbon Steel, 100,000 gallon	RECLAIM WATER STORAGE TANK	New	001	MT	WR	00C
00A		1 x 100.3%		9,300 gallons, 9'D x 20.25'H	MIX TANK (RAPID)	New		MT	WR	00A
00A		1 x 100.3%		37,000 gallons 19'D x 18.5'H	REACTION TANK (DENSEG REACTOR)	New		MT	WR	00A
00A		1 x 100%		21,000 gallons	FILTER BACKWASH SUPPLY TANK	New		MT	WR	00A
00A		1 x 100%		6,000 gallons, 10'D x 12'H	SLUDGE STORAGE TANK	New		MT	WR	00A
00A		1 x 100%	5.0	With VFD	SLUDGE STORAGE TANK MIXER	New		MT	WR	00A
00A		1 x 100%		5000 gallons	SODIUM HYPOCHLORITE BULK STORAGE TANK	New		MT	WR	00A
00A		1 x 100%		5,000 gallons	FERRIC CHLORIDE STORAGE TANK	New		MT	WR	00A
00A		1 x 100%	5.0	With VFD	MIX TANK MIXER	New		WR	WR	00A
00A		3 x 33.3%	7.5	With VFD	REACTION TANK MIXER	New		WR	WR	00A
00A		1 x 100%		2,800 gpm 26'D x 18.5'H	CLARIFIER (DENSEG CLARIFIER / THICKENER)	New		WR	WR	00A
00B		1 x 100%	0.5	Two arms 48" diameter concrete sump, vented cover, duplex submersible pumps (50 gpm, TH: 100 ft), control panel, external valve box.	CLARIFIER SLUDGE SCRAPER	New		WR	WR	00B
00A				Concrete volute pump	DESAL AREA SANITARY LIFT STATION	New		XN	WR	00A
00B	Decommission				CIRCULATING WATER PUMP	EXIST	1	CWP	WL	00B

JUOTC - DIABLO CANYON

Preliminary Mechanical Equipment List Fine Mesh Screening

25762-110-MOX-YA-00006

Rev	Date	Reason for Revision	Originator	Checked	Approved
00B	6/24/2013	Issued for Estimate Report	RP		RP
00A	5/8/2013	Issued for Estimating	RP	-	RP

JUOTC STUDY FINE MESH OPTION
Diablo Canyon

25762-110-M0X-YA-00006, Rev. 00A

System Codes

Commodity Codes

WL	Circulating Water	ME	Heat Exchange Component (Cooling Tower, Heat Exchanger)
WO	Sea Water	ML	Liquid-Solid Separation (Traveling Screens, Trash Racks, Automatic Strainer/Filters)
		MP	Pump
		MT	Tank
		PP	Pump - exist plant
		PY	In line piping specialty

NOTES:

1. Commodity Codes shown are Bechtel standard codes. Bechtel Commodity codes have been assigned to existing plant equipment numbers to aid in equipment list sorts.
2. System Codes shown are Bechtel standard codes. Bechtel System Codes have been assigned to existing plant equipment numbers to aid in list sorts.

Preliminary Mechanical Equipment List

JUOTC STUDY FINE MESH OPTION
Diablo Canyon

25762-110-M0X-YA-00006, Revision 00B

Quantity	Bidder Quote to be Used	Unit	Sys Code	Com. Code 1	Seq. No.	New / Existing	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP (or kW)	Comments	Rev.
1	Ovivo Proposal BP12 189R1	1	WT	ML	001	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	1	WT	ML	002	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	1	WT	ML	003	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	1	WT	ML	004	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	1	WT	ML	005	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	1	WT	ML	006	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	N/A	1	WT		7	Existing	ONCE THROUGH SCREEN				Existing to remain as is- Ovivo to supply new control panel (1/17/13 email) to replace existing control panel.	00A
1	N/A	1	WT	PP	1-1	Existing	SCREEN WASH PUMP	vertical 3900 gpm, TDH: 260 feet, variable speed	1 X 100%	350	Continue to use	00A
1	N/A	1	WT	PP	1-2	Existing	SCREEN WASH PUMP	vertical 3900 gpm, TDH: 260 feet, variable speed	1 X 100%	350	Continue to use	00A
1	Estimating	1	WT	MP	003	New	SCREEN WASH PUMP	vertical 2100 gpm, TDH: 260 feet, variable speed	1 X 100%	200	2100 gpm @ ~260 feet using pump aff 65%	00A
1	Estimating	1	WT	PY		New	Pump MP 003 discharge expansion joint	10" rubber with tie rods				
1	Estimating	1	WT	ML	009	New	SCREEN WASH STRAINER	AUTOMATIC BACKWASH	1 X 100%	0.5	0.6mm mesh SP Kinney Model AF strainer or equivalent	00A
1	Estimating	1	WT	PSV	001	New	SCREEN WASH STRAINER SAFETY VALVE	¾" x 1"				00A
1	Ovivo Proposal BP12 189R1	2	WT	ML	001	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	2	WT	ML	002	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	2	WT	ML	003	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	2	WT	ML	004	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	2	WT	ML	005	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	Ovivo Proposal BP12 189R1	2	WT	ML	006	New	DUAL FLOW TRAVELING SCREEN WITH FISH CATCHER	Fine mesh (1 mm x 6 mm), 13 foot, variable speed drives (5/10/20/40 fpm)	16.67	15.0	1 f/s thru mesh velocity, fish and debris transition troughs included. Discharge troughs priced by linear foot.	00A
1	N/A	2	WT		7	Existing	ONCE THROUGH SCREEN				Existing to remain as is- Ovivo to supply new control panel (1/17/13 email)	00A
1	Estimating	2	WT	PP	2-1	Existing	SCREEN WASH PUMP	vertical 3900 gpm, TDH: 260 feet, variable speed	1 X 100%	350	Continue to use	00A
1	Estimating	2	WT	MP	003	New	SCREEN WASH PUMP	vertical 2100 gpm, TDH: 260 feet, variable speed	1 X 100%	200	2100 gpm @ ~260 feet using pump aff 65%	00A
1	Estimating	1	WT	PY		New	Pump MP 003 discharge expansion joint	10" rubber with tie rods				
1	Estimating	2	WT	ML	009	New	SCREEN WASH STRAINER	AUTOMATIC BACKWASH	1 X 100%	0.5	0.6mm mesh SP Kinney Model AF strainer or equivalent	00A
1	Estimating	2	WT	PSV	001	New	SCREEN WASH STRAINER SAFETY VALVE	¾" x 1"				00A
1	Estimating	1	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML001	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	1	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML002	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	1	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML003	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	1	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML004	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	1	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML005	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	1	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML006	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	2	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML001	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	2	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML002	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	2	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML003	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	2	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML004	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	2	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML005	6 inch			Duplex stainless steel materials (compatible with sea water)	00B
1	Estimating	2	WT	PY		New	Y-strainer - Spray line to Traveling Screen ML006	6 inch			Duplex stainless steel materials (compatible with sea water)	00B

JUOTC - DIABLO CANYON

Preliminary Mechanical Equipment List Wet Mechanical Draft (Seawater) - 44 Cell Option

25762-110-MOX-YA-00007

00A	6-10-14	Issued for Estimate	DSM	For P&ID	ED
Rev	Date	Reason for Revision	Originator	Checked	Approved

JUOTC DIABLO CANYON
Preliminary Mechanical Equipment List

25762-110-M0X-YA-00007, Rev. 00A

System Codes

Commodity Codes

WL	Circulating Water	ME	Heat Exchange Component (Cooling Tower, Heat Exchanger)
WO	Sea Water	MP	Pump
		MT	Tank

NOTES:

1. Commodity Codes shown are Bechtel standard codes. Bechtel Commodity codes have been assigned to existing plant equipment numbers to aid in equipment list sorts.

Dry Mechanical (Forced Draft) Cooling Tower - 44 Cells

Sys Code	Com. Code ¹	Seq. No.	New/ Existing	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP	Comments	Rev.
AD	ME		EXIST	CONDENSER - UNIT 1	SHELL & TUBE	100%	N/A	EXISTING CONDENSOR TO BE MODIFIED. TUBE SIDE DESIGN PRESSURE TO BE INCREASED TO 50 PSIG. WATER BOXES REPLACED AND CONDENSOR REBUNDLED.	00A
AD	ME		EXIST	CONDENSER - UNIT 2	SHELL & TUBE	100%	N/A	EXISTING CONDENSOR TO BE MODIFIED. TUBE SIDE DESIGN PRESSURE TO BE INCREASED TO 50 PSIG. WATER BOXES REPLACED AND CONDENSOR REBUNDLED.	00A
WL	MP	001A	NEW	CIRCULATING WATER PUMP - UNIT 1	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001B	NEW	CIRCULATING WATER PUMP - UNIT 1	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001C	NEW	CIRCULATING WATER PUMP - UNIT 1	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001D	NEW	CIRCULATING WATER PUMP - UNIT 1	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001A	NEW	CIRCULATING WATER PUMP - UNIT 2	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001B	NEW	CIRCULATING WATER PUMP - UNIT 2	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001C	NEW	CIRCULATING WATER PUMP - UNIT 2	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001D	NEW	CIRCULATING WATER PUMP - UNIT 2	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	ME	001A	NEW	MECHANICAL DRAFT (WET) COOLING TOWER - UNIT 1	22 CELLS (FANS): 120 FT X 616 FT, 270 BHP/CELL	1 X 50%	5940	RECTANGULAR ARRANGEMENT, 22 FAN MOTORS.	00A
WL	ME	001B	NEW	MECHANICAL DRAFT (WET) COOLING TOWER - UNIT 1	22 CELLS (FANS): 120 FT X 616 FT, 270 BHP/CELL	1 X 50%	5940	RECTANGULAR ARRANGEMENT, 22 FAN MOTORS.	00A
WL	ME	001A	NEW	MECHANICAL DRAFT (WET) COOLING TOWER - UNIT 2	22 CELLS (FANS): 120 FT X 616 FT, 270 BHP/CELL	1 X 50%	5940	RECTANGULAR ARRANGEMENT, 22 FAN MOTORS.	00A
WL	ME	001B	NEW	MECHANICAL DRAFT (WET) COOLING TOWER - UNIT 2	22 CELLS (FANS): 120 FT X 616 FT, 270 BHP/CELL	1 X 50%	5940	RECTANGULAR ARRANGEMENT, 22 FAN MOTORS.	00A
WO	MP	001A	NEW	SALT WATER COOLING PUMP - UNIT 1	VERTICAL TURBINE: 10200 GPM, TDH 100	1 X 100%	350	NEW PUMPS TO BE LOCATED IN INTAKE STRUCTURE TO SERVICE ONLY THE SERVICE WATER HX AND CONDENSATE COOLER HX.	00A
WO	MP	001B	NEW	SALT WATER COOLING PUMP - UNIT 1	VERTICAL TURBINE: 10200 GPM, TDH 100	1 X 100%	350	NEW PUMPS TO BE LOCATED IN INTAKE STRUCTURE TO SERVICE ONLY THE SERVICE WATER HX AND CONDENSATE COOLER HX.	00A
WO	MP	001A	NEW	SALT WATER COOLING PUMP - UNIT 2	VERTICAL TURBINE: 10200 GPM, TDH 100	1 X 100%	350	NEW PUMPS TO BE LOCATED IN INTAKE STRUCTURE TO SERVICE ONLY THE SERVICE WATER HX AND CONDENSATE COOLER HX.	00A
WO	MP	001B	NEW	SALT WATER COOLING PUMP - UNIT 2	VERTICAL TURBINE: 10200 GPM, TDH 100	1 X 100%	350	NEW PUMPS TO BE LOCATED IN INTAKE STRUCTURE TO SERVICE ONLY THE SERVICE WATER HX AND CONDENSATE COOLER HX.	00A
WL	MP	002A	NEW	COOLING TOWER MAKEUP PUMP - UNIT 1	VERTICAL TURBINE: 16425 GPM, 125 TDH	1 X 50%	700	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002B	NEW	COOLING TOWER MAKEUP PUMP - UNIT 1	VERTICAL TURBINE: 16425 GPM, 125 TDH	1 X 50%	700	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002C	NEW	COOLING TOWER MAKEUP PUMP - UNIT 1	VERTICAL TURBINE: 16425 GPM, 125 TDH	1 X 50%	700	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002A	NEW	COOLING TOWER MAKEUP PUMP - UNIT 2	VERTICAL TURBINE: 16425 GPM, 125 TDH	1 X 50%	700	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002B	NEW	COOLING TOWER MAKEUP PUMP - UNIT 2	VERTICAL TURBINE: 16425 GPM, 125 TDH	1 X 50%	700	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002C	NEW	COOLING TOWER MAKEUP PUMP - UNIT 2	VERTICAL TURBINE: 16425 GPM, 125 TDH	1 X 50%	700	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
PF			NEW	FIRE HYDRANTS	DRY BARREL TYPE			EVERY 300 FT.	00A

JUOTC - DIABLO CANYON

Preliminary Mechanical Equipment List Wet Mechanical Draft (Seawater) - 34 Cell Option

25762-110-MOX-YA-00008

00A	6-10-14	Issued for Estimate	DSM	#00000	100
Rev	Date	Reason for Revision	Originator	Checked	Approved

JUOTC DIABLO CANYON
Preliminary Mechanical Equipment List

25762-110-M0X-YA-00008, Rev. 00A

System Codes

Commodity Codes

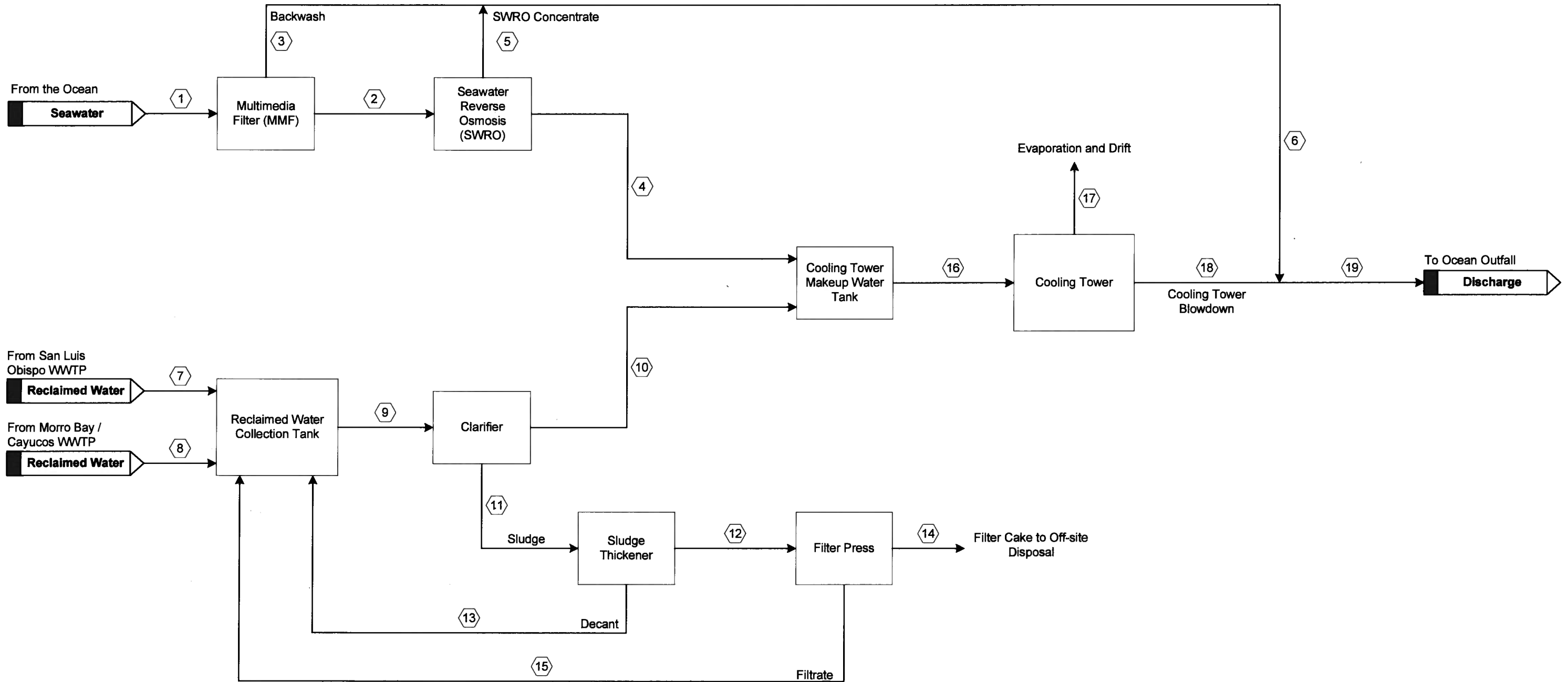
WL	Circulating Water	ME	Heat Exchange Component (Cooling Tower, Heat Exchanger)
WO	Sea Water	MP	Pump
		MT	Tank

NOTES:

1. Commodity Codes shown are Bechtel standard codes. Bechtel Commodity codes have been assigned to existing plant equipment numbers to aid in equipment list sorts.

Dry Mechanical (Forced Draft) Cooling Tower - 34 Cells

Sys Code	Com. Code ¹	Seq. No.	New/ Existing	Description	Type	Capacity (%) - Per Unit	Drive Motor Size BHP	Comments	Rev.
AD	ME		EXIST	CONDENSER - UNIT 1	SHELL & TUBE	100%	N/A	EXISTING CONDENSOR TO BE MODIFIED. TUBE SIDE DESIGN PRESSURE TO BE INCREASED TO 50 PSIG. WATER BOXES REPLACED AND CONDENSOR REBUNDLED.	00A
AD	ME		EXIST	CONDENSER - UNIT 2	SHELL & TUBE	100%	N/A	EXISTING CONDENSOR TO BE MODIFIED. TUBE SIDE DESIGN PRESSURE TO BE INCREASED TO 50 PSIG. WATER BOXES REPLACED AND CONDENSOR REBUNDLED.	00A
WL	MP	001A	NEW	CIRCULATING WATER PUMP - UNIT 1	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001B	NEW	CIRCULATING WATER PUMP - UNIT 1	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001C	NEW	CIRCULATING WATER PUMP - UNIT 1	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001D	NEW	CIRCULATING WATER PUMP - UNIT 1	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001A	NEW	CIRCULATING WATER PUMP - UNIT 2	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001B	NEW	CIRCULATING WATER PUMP - UNIT 2	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001C	NEW	CIRCULATING WATER PUMP - UNIT 2	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	MP	001D	NEW	CIRCULATING WATER PUMP - UNIT 2	FABRICATED VOLUTE: 217075 GPM, 150 FT TDH	1 X 25%	10000	PUMP TO BE LOCATED IN COMMOM PUMPHOUSE.	00A
WL	ME	001A	NEW	MECHANICAL DRAFT (WET) COOLING TOWER - UNIT 1	16 CELLS (FANS): 120 FT X 448 FT, 270 BHP/CELL	1 X 50%	4320	RECTANGULAR ARRANGEMENT, 16 FAN MOTORS.	00A
WL	ME	001B	NEW	MECHANICAL DRAFT (WET) COOLING TOWER - UNIT 1	18 CELLS (FANS): 120 FT X 504 FT, 270 BHP/CELL	1 X 50%	4860	RECTANGULAR ARRANGEMENT, 18 FAN MOTORS.	00A
WL	ME	001A	NEW	MECHANICAL DRAFT (WET) COOLING TOWER - UNIT 2	16 CELLS (FANS): 120 FT X 448 FT, 270 BHP/CELL	1 X 50%	4320	RECTANGULAR ARRANGEMENT, 16 FAN MOTORS.	00A
WL	ME	001B	NEW	MECHANICAL DRAFT (WET) COOLING TOWER - UNIT 2	18 CELLS (FANS): 120 FT X 504 FT, 270 BHP/CELL	1 X 50%	4860	RECTANGULAR ARRANGEMENT, 18 FAN MOTORS.	00A
WO	MP	001A	NEW	SALT WATER COOLING PUMP - UNIT 1	VERTICAL TURBINE: 10200 GPM, TDH 100	1 X 100%	350	NEW PUMPS TO BE LOCATED IN INTAKE STRUCTURE TO SERVICE ONLY THE SERVICE WATER HX AND CONDENSATE COOLER HX.	00A
WO	MP	001B	NEW	SALT WATER COOLING PUMP - UNIT 1	VERTICAL TURBINE: 10200 GPM, TDH 100	1 X 100%	350	NEW PUMPS TO BE LOCATED IN INTAKE STRUCTURE TO SERVICE ONLY THE SERVICE WATER HX AND CONDENSATE COOLER HX.	00A
WO	MP	001A	NEW	SALT WATER COOLING PUMP - UNIT 2	VERTICAL TURBINE: 10200 GPM, TDH 100	1 X 100%	350	NEW PUMPS TO BE LOCATED IN INTAKE STRUCTURE TO SERVICE ONLY THE SERVICE WATER HX AND CONDENSATE COOLER HX.	00A
WO	MP	001B	NEW	SALT WATER COOLING PUMP - UNIT 2	VERTICAL TURBINE: 10200 GPM, TDH 100	1 X 100%	350	NEW PUMPS TO BE LOCATED IN INTAKE STRUCTURE TO SERVICE ONLY THE SERVICE WATER HX AND CONDENSATE COOLER HX.	00A
WL	MP	002A	NEW	COOLING TOWER MAKEUP PUMP - UNIT 1	VERTICAL TURBINE: 18975 GPM, 125 TDH	1 X 50%	800	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002B	NEW	COOLING TOWER MAKEUP PUMP - UNIT 1	VERTICAL TURBINE: 18975 GPM, 125 TDH	1 X 50%	800	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002C	NEW	COOLING TOWER MAKEUP PUMP - UNIT 1	VERTICAL TURBINE: 18975 GPM, 125 TDH	1 X 50%	800	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002A	NEW	COOLING TOWER MAKEUP PUMP - UNIT 2	VERTICAL TURBINE: 18975 GPM, 125 TDH	1 X 50%	800	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002B	NEW	COOLING TOWER MAKEUP PUMP - UNIT 2	VERTICAL TURBINE: 18975 GPM, 125 TDH	1 X 50%	800	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
WL	MP	002C	NEW	COOLING TOWER MAKEUP PUMP - UNIT 2	VERTICAL TURBINE: 18975 GPM, 125 TDH	1 X 50%	800	NEW PUMPS TO BE LOCATED IN EXISTING INTAKE STRUCTURE. MAKEUP FROM SEAWATER.	00A
PF			NEW	FIRE HYDRANTS	DRY BARREL TYPE			EVERY 300 FT.	00A



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Rev	Date	Reason for Revision	Resp. Engr.	Checker	EGS	Project Engineer
00B	9/11/13	Issued for Final Report	CRH	JMD	RP	DED
00A	1/16/13	Preliminary Issue	EJT	JMD	RP	DED


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BECHTEL POWER CORPORATION			
Pacific Gas & Electric Diablo Canyon Power Plant			
Water Balance Diagram			
JOB NO. 25762	DWG. NO. 25762-110-M5K-YA-00001	REV. 00B	Sheet: 1 of 2

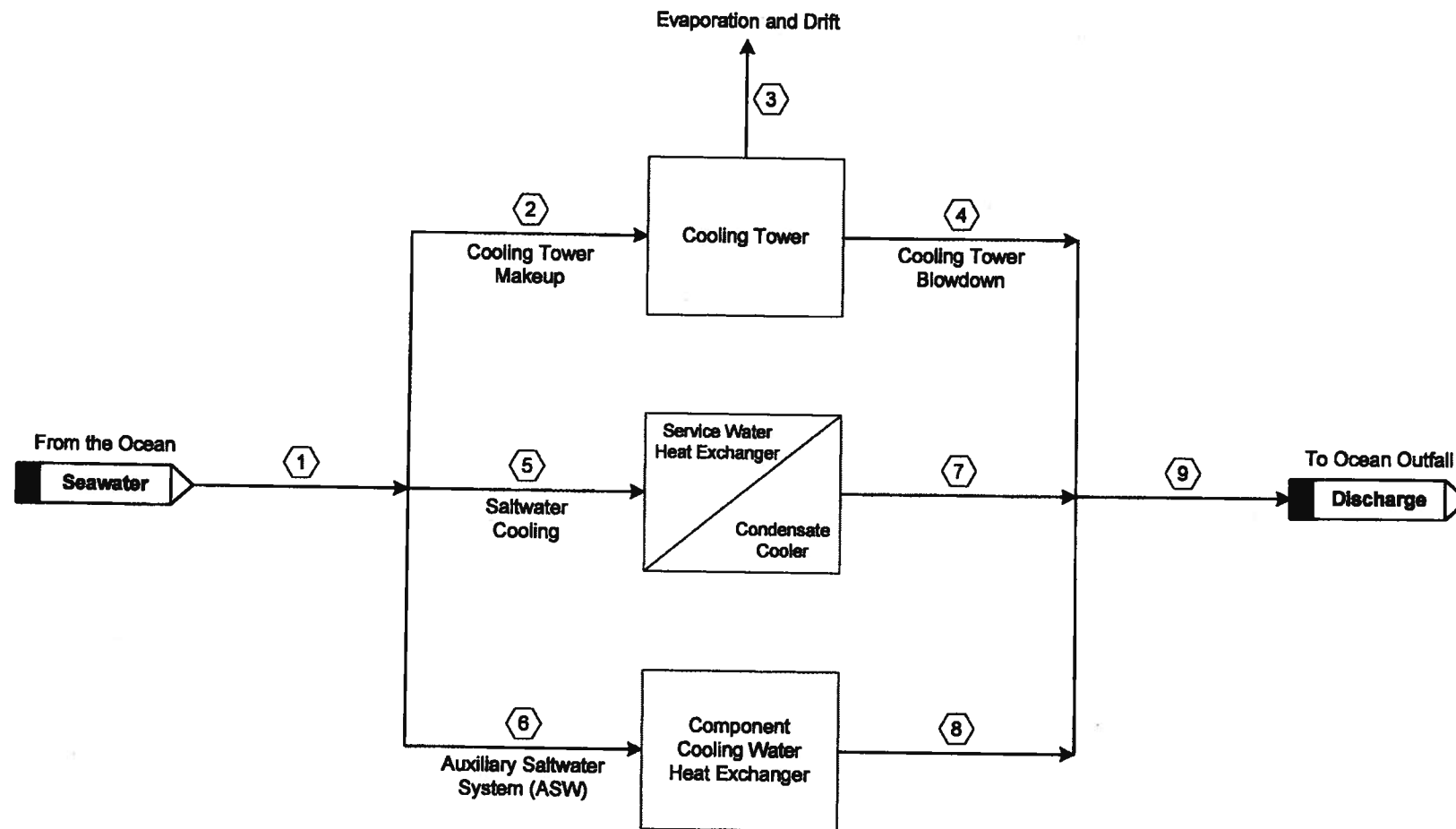
WATER BALANCE STREAM FLOW RATE TABLE

WATER BALANCE CASE DESCRIPTION	Wet Natural Draft Cooling		Wet Mechanical (Forced) Draft Cooling		Hybrid Wet/Dry Cooling			
	NUMBER OF UNITS OPERATING		2	2	2			
	DRY BULB TEMPERATURE (°F)		83	83	83			
	WET BULB TEMPERATURE (°F)		68	68	68			
	RELATIVE HUMIDITY (%)		46	46	46			
	SEASON DESCRIPTION		HOT DAY		HOT DAY			
	MAKEUP WATER TYPE		BLEND	DESAL ONLY	BLEND	DESAL ONLY		BLEND
STREAM NO.	STREAM DESCRIPTION	Flow Rate GPM	Flow Rate GPM	Flow Rate GPM	Flow Rate GPM	Flow Rate GPM	Flow Rate GPM	Notes
1	Seawater from the Ocean	70,800	77,300	70,800	77,300	63,100	69,500	
2	SWRO Influent	67,400	73,600	67,400	73,600	60,100	66,200	
3	MMF Backwash	3,400	3,700	3,400	3,700	3,000	3,300	Note 2
4	Desalinated Water to Makeup Water Tank	30,310	33,100	30,340	33,100	27,040	29,800	Note 3
5	SWRO Concentrate to Outfall	37,090	40,500	37,060	40,500	33,060	36,400	
6	Combined MMF Backwash and SWRO Concentrate	40,490	44,200	40,460	44,200	36,060	39,700	
7	Reclaimed Water from the San Luis Obispo WWTP	2,000	0	2,000	0	2,000	0	Note 4
8	Reclaimed Water from the Morro Bay / Cayucos WWTP	800	0	800	0	800	0	Note 5
9	Influent to Clarifier	2,890	0	2,860	0	2,860	0	
10	Clarified Reclaimed Water to Makeup Water Tank	2,790	0	2,760	0	2,760	0	
11	Sludge Thickener Influent	100	0	100	0	100	0	Note 6
12	Filter Press Influent	40	0	40	0	40	0	
13	Sludge Thickener Decant to Reclaimed Water Collection Tank	60	0	60	0	60	0	
14	Filter Press Filtrate in Filter Cake to Off-site Disposal	10	0	10	0	10	0	
15	Filtrate to Reclaimed Water Collection Tank	30	0	30	0	30	0	
16	Makeup Water to Cooling Tower	33,100	33,100	33,100	33,100	29,800	29,800	
17	Cooling Tower Evaporation and Drift	29,000	29,000	29,000	29,000	26,100	26,100	Note 7
18	Cooling Tower Blowdown	4,100	4,100	4,100	4,100	3,700	3,700	Note 8
19	Combined Discharge to the Ocean	44,590	48,300	44,560	48,300	39,760	43,400	

NOTES:

- Water flow rates are based on the specified process conditions for the plant configuration shown on Sheet 1 and are shown in gpm unless otherwise specified. These cases may or may not represent the appropriate design flow for a particular stream. Therefore, it is not appropriate to reference this drawing alone as a basis for establishing system, equipment or line sizing design flows.
- MMF Backwash is estimated to be 5% of the seawater influent.
- Permeate from the SWRO is estimated to be 45% of the influent flow.
- Reclaimed water from the San Luis Obispo WWTP is estimated to be 2000 gpm in both the summer and winter. This was the average daily recycled water availability from this facility in 2009.
- Reclaimed water from the Morro Bay / Cayucos WWTP is estimated to be 800 gpm in both the summer and winter. This was the average water availability in 2011.
- Clarifier underflow is estimated to be 3% of the reclaim water clarifier influent flow.
- Cooling tower drift is estimated to be 0.0005% of the circulating water flow (864,300 gpm), which is 4 gpm.
- Cooling tower cycles of concentration is estimated to be 8. It is assumed to be limited by the 31 ton/year presumed limit for PM-10 emissions in the cooling tower drift.

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Water Balance Diagram	



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Rev	Date	Reason for Revision	Resp. Engr.	Checker	EGS	Project Engineer
00A	6-3-14	Preliminary Issue	EST	DSM		

				BECHTEL POWER CORPORATION			
				Pacific Gas & Electric Diablo Canyon Power Plant			
				Water Balance Diagram			
JOB NO. 25762	DWG. NO. 25762-110-M5K-YA-00002	REV. 00A	Sheet 1 of 2				


WATER BALANCE STREAM FLOW RATE TABLE

WATER BALANCE CASE DESCRIPTION		Case 1	Case 1B	
NUMBER OF UNITS		2	2	
NUMBER OF TOWERS PER UNIT		2	2	
DRY BULB TEMPERATURE (°F)		77.8	77.8	
WET BULB TEMPERATURE (°F)		64.5	64.5	
RELATIVE HUMIDITY (%)		49	49	
NUMBER OF COOLING TOWER CELLS		44	34	
STREAM NO.	STREAM DESCRIPTION	Flow Rate GPM	Flow Rate GPM	Notes
1	Seawater from the Ocean	107,260	117,460	
2	Cooling Tower Makeup	85,700	75,900	
3	Cooling Tower Evaporation and Drift	21,900	25,300	Notes 2 & 4
4	Cooling Tower Blowdown	43,800	50,600	Note 3
5	Seawater to Service Water Heat Exchanger and Condensate Cooling	20,400	20,400	
6	Seawater to Component Cooling Water Heat Exchanger	21,160	21,160	
7	Effluent from Service Water Heat Exchanger and Condensate Cooling	20,400	20,400	
8	Effluent from Component Cooling Water Heat Exchanger	21,160	21,160	
9	Combined Discharge to the Ocean	85,360	92,160	

NOTES:

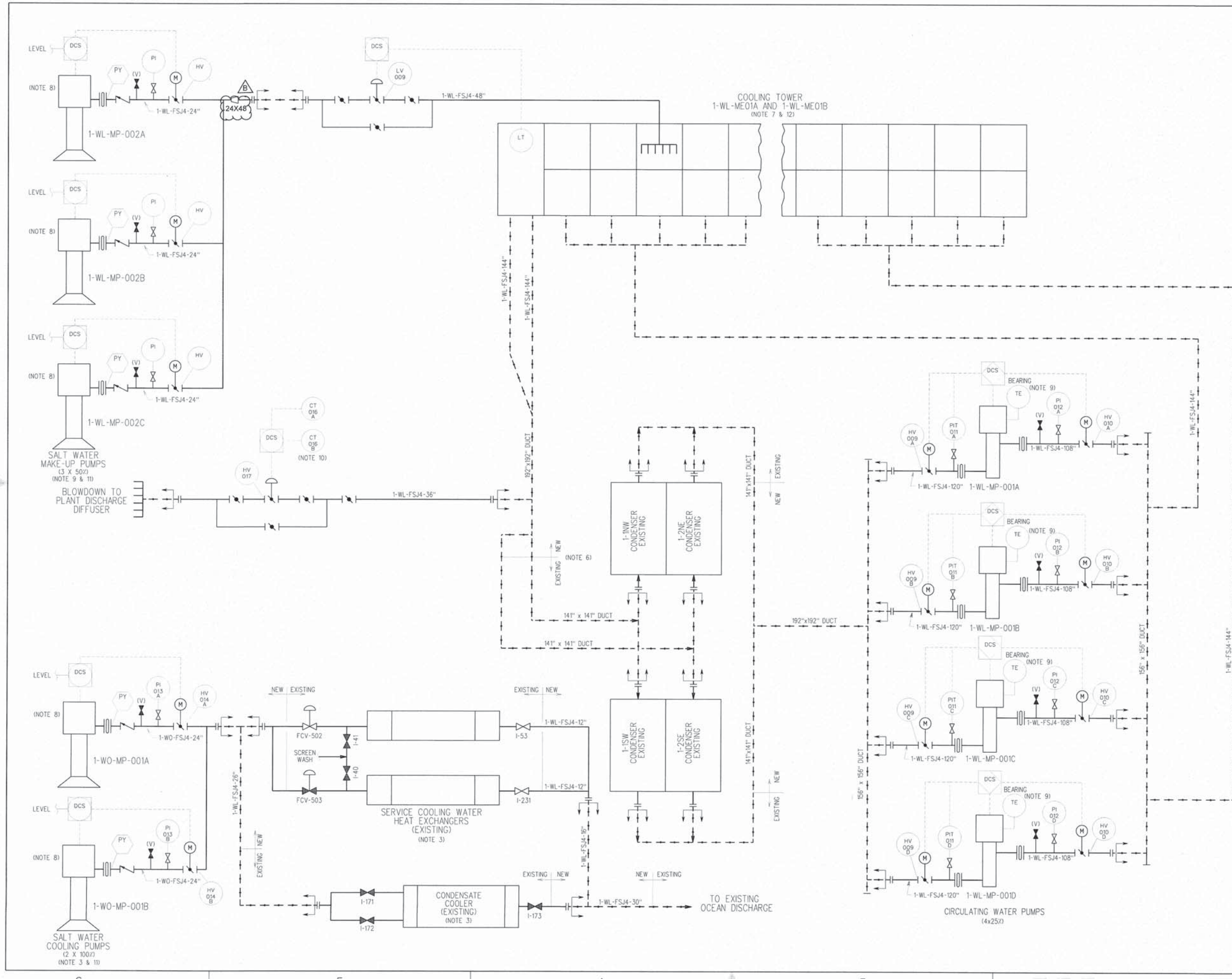
1. Water flow rates are based on the specified process conditions for the plant configuration shown in the diagram and are shown in gpm unless otherwise specified. These cases may or may not represent the appropriate design flow for a particular stream. Therefore, it is not appropriate to reference this drawing alone as a basis for establishing system, equipment or line sizing design flows.
2. Cooling tower drift is estimated to be 0.0005% of the circulating water flow (868,300 gpm), which is 4 gpm.
3. Cooling tower cycles of concentration are estimated to be 1.5, which is a conservative estimate for seawater cooling tower operation.
4. Cooling tower evaporation rates are based on estimates from a cooling tower vendor

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	BECHTEL POWER CORPORATION
Pacific Gas & Electric Diablo Canyon Power Plant	
Water Balance Diagram	

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JOB NO. 25762	DWG. NO. 25762-110-M5K-YA-00002	REV. 00A	Sheet: 2 of 2
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- NOTES:
1. P&ID SHOWS UNIT 1 SYSTEM. UNIT 2 SYSTEM IS IDENTICAL EXCEPT AS NOTED AND EQUIPMENT NUMBERS BEGINNING WITH "2".
 2. PLANT DISCHARGE IS TO BE MODIFIED. CIRCULATING WATER FROM EACH UNIT'S CONDENSER IS ROUTED TO NEW CIRCULATING WATER PUMP HOUSE. NEW SALTWATER COOLING SYSTEM FOR EACH UNIT IS ROUTED TO MODIFIED PLANT DISCHARGE. COOLING TOWER BLOWDOWN FROM EACH UNIT'S CIRCULATING WATER SYSTEM IS ROUTED TO THE MODIFIED DISCHARGE STRUCTURE. ALL OTHER CONNECTIONS TO THE PLANT DISCHARGE ARE TO BE MAINTAINED. DISCHARGE SPARGER TO BE ADDED TO PLANT DISCHARGE IF NECESSARY TO MEET PERMIT REQUIREMENTS.
 3. NEW SALTWATER COOLING SYSTEMS WILL SUPPLY REQUIRED COOLING TO THE EXISTING SERVICE COOLING WATER HEAT EXCHANGERS AND CONDENSER COOLER OF EACH UNIT.
 4. INSTRUMENTATION AND VALVING IN EXISTING PIPING IS NOT DEPICTED ON P&ID.
 5. EXISTING CIRCULATING WATER CONDUIT OUTSIDE THE TURBINE BUILDING IS TO BE REMOVED AND REPLACED TO OBTAIN IN ORDER TO MEET THE NEW SYSTEM DESIGN PRESSURE.
 6. COOLING TOWER INSTRUMENTATION AND CONTROL DEVICES WILL BE PROVIDED BY COOLING TOWER VENDOR.
 7. SINGLE COOLING TOWER BASIN, COMMON TO EACH UNIT'S COOLING TOWERS IS PROVIDED. THE FOREBAY FOR UNIT 1 IS LOCATED ON THE NORTH END OF THE BASIN. THE FOREBAY FOR UNIT 2 IS LOCATED BETWEEN THE TWO (2) UNIT 2 TOWERS.
 8. BEARING AND MOTOR COOLING PROVIDED BY THE PUMP VENDOR. TROUBLE WILL BE ANNUNCIATED IN THE MAIN CONTROL ROOM.
 9. NEW COOLING TOWER MAKEUP PUMPS FOR EACH UNIT WILL BE INSTALLED IN THE EXISTING INTAKE STRUCTURE.
 10. CONDUCTIVITY IS MEASURED AT OUTLET OF COOLING TOWER.
 11. THE MIN FLOW LINES FOR SALTWATER COOLING PUMPS AND SALTWATER MAKE-UP PUMPS NOT SHOWN.
 12. MAKEUP CONNECTION IS PROVIDED FOR BOTH TOWERS (TOWER SPRAY WASH MAKEUP). MAKEUP VALVES AND LEVEL INSTRUMENTS ARE INCLUDED IN TOWER SUPPLIER SCOPE AND ARE NOT SHOWN.

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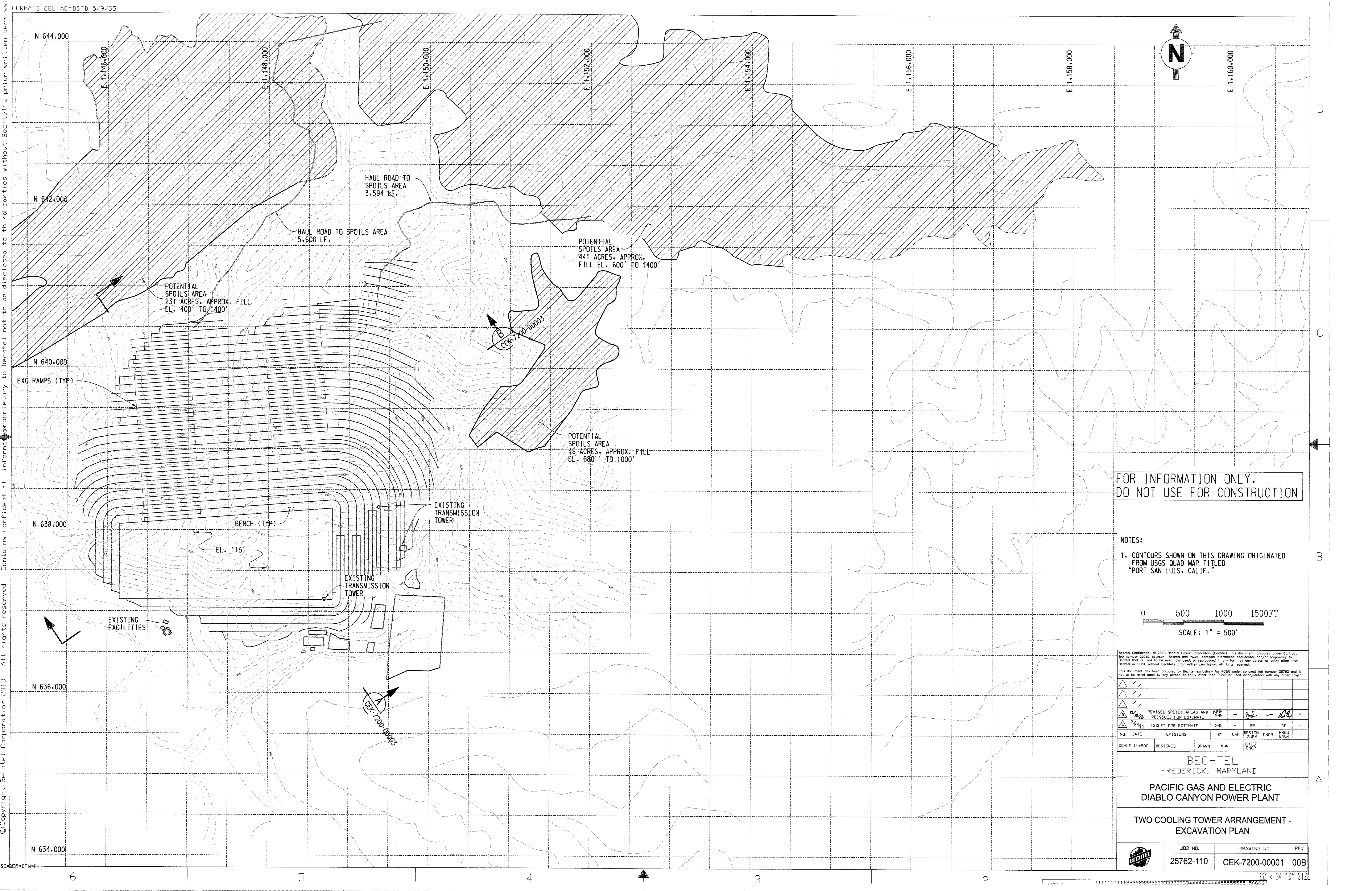
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 DIABLO CANYON**

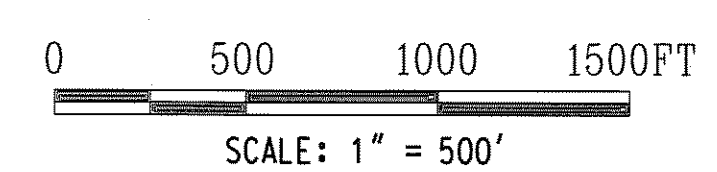
**PIPING & INSTRUMENT SCHEMATIC
 CIRCULATING WATER SYSTEM
 MECHANICAL DRAFT COOLING (WET)
 SEAWATER - 34 CELL OPTION**

25762-110 M6K-WL-00008 B



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- NOTES:
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SCALE 1"=500'	DESIGNED	DRAWN	MHN	CHIEF ENGR					

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PACIFIC GAS AND ELECTRIC
DIABLO CANYON POWER PLANT

TWO COOLING TOWER ARRANGEMENT -
EXCAVATION PLAN

JOB NO.	DRAWING NO.	REV
25762-110	CEK-7200-0001	00B

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