DOCKETED

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September 30, 2013

VIA ELECTRONIC DOCKETING

Ms. Felicia Miller, Siting Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Huntington Beach Energy Project (12-AFC-02)
Responses to Staff's Informal Data Requests (Water Resources/Alternatives)

Dear Ms. Miller:

On behalf of Applicant AES Southland Development, LLC, please find enclosed herein for docketing responses to Staff's informal data requests related to the Huntington Beach Energy Project. Should you have any questions regarding this information, please do not hesitate to contact Robert Mason or Melissa Foster.

Very truly yours,

Kimberly J. Hellwig
Energy & Environmental Policies Specialist

MAF:jmw
Enclosures
cc: Service List

Huntington Beach Energy Project

(12-AFC-02)

Staff's Email Requests 5-7

(Water Resources)

Submitted to

California Energy Commission

Prepared by

AES Southland Development, LLC

With Assistance from

CH2MHILL®

2485 Natomas Park Drive
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Sacramento, CA 95833

September 30, 2013

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Table 1

Introduction

Attached are AES Southland Development, LLC's (AES or the Applicant) responses to the California Energy Commission (CEC) Staff's three additional Requests (Informal Data Requests) regarding Water Resources provided via email on August 13, 2013, regarding the Huntington Beach Energy Project (HBEP) (12-AFC-02) Application for Certification (AFC).

The responses are presented in the same order as CEC Staff presented them and are keyed to the Staff Email Request (SER) numbers. New or revised graphics or tables are numbered in reference to the SER number. For example, the first table used in response to SER 107 would be numbered Table SER107-1. The first figure used in response to SER 107 would be Figure SER107-1, and so on.

Additional tables, figures, or documents submitted in response to a data request (for example, supporting data or stand-alone documents such as plans, folding graphics, etc.) are found at the end of the section and may not be sequentially numbered.

Water Resources

STAFF'S EMAIL REQUESTS (INFORMAL DATA REQUESTS)

The information you requested regarding potential alternative cooling water sources for the existing Huntington Beach Generating Station (HBGS) as part of the evaluation of the Huntington Beach Energy Project (HBEP) No Project Alternative is provided below. The Applicant hereby incorporates by reference Applicant's August 15, 2013 email to staff regarding the HBEP No Project Alternative (see Attachment 1).

1. Can you confirm that the OCSD facility referenced in the AFC is located at the southeast corner of Ellis Ave. and Ward St. in Huntington Beach?

Response:

The AFC mentions the Orange County Sanitation District's (OCSD's) Huntington Beach treatment facility but does not mention there are two OCSD treatment plants in the Huntington Beach area (see Figure 1). OCSD Plant No. 1 is located at the southeast corner of Ellis Ave. and Ward St. in Huntington Beach. OCSD Plant No. 2 is located south of Hamilton Avenue between Brookhurst Street and the adjacent to the Santa Ana River. The excess secondary effluent from Plant No. 1 flows by gravity to Plant No. 2 via an interplant pipeline along the Santa Ana River (see Figure 3-3). A portion of the flow from Plant No. 1 goes to the Orange County Water District (OCWD) for use in the District's groundwater replenishment program. The OCWD's groundwater replenishment program has been expanded in the past, and it could potentially be expanded in the future (though no specific additional expansion has been has been announced by the District). If the program is expanded in the future additional flow will be needed from OCSD Plant No.1 this could potentially result in less excess flow that could be used for other purposes. OCSD Plant No. 2 is closer to the Huntington Beach Generating Station (HBGS) and all secondary effluent from Plant No. 2 is discharged to the ocean; therefore, OCSD Plant No. 2 could potentially be a source of secondary treated effluent water for the No Project alternative at HBGS.

2. If there would need to be a pipeline routed from the OCSD facility to the HBGS, Staff is assuming a buried pipeline route would likely follow Brookhurst Street south, then west on Hamilton Avenue to the HBGS site. Does this routing make sense? Or, is there another/better route?

Response:

As noted in the response to question no. 1 above, there is an interplant pipeline located along the Santa Ana River (see Figure 3-3). The interplant pipeline could potentially be tapped at Hamilton Avenue to minimize the pipeline route. A new 1.5 to 2 mile pipeline could be constructed along Hamilton Avenue to Newland Street, and along Newland Street to the HBGS site to deliver secondary effluent from OCSD Plant No. 1. A new pipeline for secondary treated effluent from OCSD Plant No. 2 could also be constructed and routed along the Santa Ana River to Hamilton Avenue to Newland Street to the HBGS site; however, this route may require the water to be pumped from OSCD Plant No. 2 to Hamilton Avenue.

3. Because this water source would require additional treatment prior to power plant use, would you be able to give us a rough estimate as to the footprint and general size (i.e., height/massing) of such a treatment facility and likely location (within the HBGS or within the

OCSD facility, if the HBGS site is too constrained to accommodate such an on-site treatment facility)?

Response:

As discussed in Attachment 1, the HBEP No Project Alternative is the continued operation of HBGS existing Units 1 and 2 but with the elimination of the existing once-thru-cooling system (OTC) as required by California's OTC phase out requirements. Therefore, under the No Project Alternative a wet cooling tower system would be required for Units 1 and 2 to allow the elimination of the OTC system for these units. As noted above, treatment of the secondary treated effluent from OCSD to Title 22 tertiary standards would be required prior to use in the wet cooling tower system.

The assumed foot print for the additional tertiary treatment facility (~5 MGD based on 430 MW) is based on conventional mono-media sand filtration system designed for 5 gpm/square foot (four total units, 3 active and one standby) and a sodium hypochlorite disinfection system (chemical storage tank and feed pump). As show in Table 1, the total footprint is approximately 13,000 square feet (the height is approximately 23 feet) based on a 5 MGD facility that includes filtration and disinfection (chlorine contact tank) of secondary treated effluent to bring it into with the tertiary treatment requirements of Title 22. There would also need to be an equalization/ storage tank to ensure an adequate supply of tertiary treated water to meet peak demands of the no project alternative at HBGS. This is not included in the footprint estimate. The equalization/storage tank could,; however, be combined with the chlorine contact tank to optimize the overall footprint. There may be room for other site optimization based on type of filtration equipment, etc.

Based on site drawings, the OCSD Plant No.1 (see Figure 3-5) is too congested for the added treatment facilities. There is some room currently available on the north end of OCSD Plant No.2 that could potentially be suitable for additional treatment (see Figure 3-6). Additional information would be required from OCSD to confirm whether an additional treatment facility could be located on OCSD Plant No. 2 site. Also, OCSD and AES would need to agree on the terms of use of that area, and OCSD board would need to approve such a use.

As discussed in Response 2, if a water supply pipeline from OCSD Plant No. 2, (containing either secondary treated effluent or if a tertiary treatment facility is located at Plant No. 2) could be routed (possibly requiring pumping) to the HBGS along the Santa Ana River to Hamilton Avenue, then along Hamilton to Newland Street, and to the HBGS site. Either option would require a tertiary treated water (Title 22) discharge pipeline along Hamilton Avenue to Newland Street and down Newland Street to the HBGS (see figures attached), and would require storage of tertiary treated Title 22 at HBGS.

With the elimination of OTC for HBGS Units 1 and 2 under the No Project Alternative, a wet cooling tower would be required at HBGS, using either tertiary treated effluent from OCSD Plant No. 2 or secondary treated water from OCSD Plant No. 2 with a tertiary treatment facility at HBGS. An initial estimate indicates the elimination of OTC for HBGS Units 1 and 2 would require a wet cooling tower with approximate dimensions of 60 feet wide by 650 feet long (approximately 38,880 sq ft) and 50 feet high. Given the coastal location of HBGS, it is assumed a plume-abated cooling tower would be required.

As shown on Figure DR-6 the HBGS site is significantly constrained by other existing uses (SCE switchyard), an area owned by the City of Huntington Beach, and an area set aside under a lease for a pending desalination plant. Figure DR-6 also shows the only feasible available location for water treatment facility and wet cooling towers for the No Project Alternative. As shown on Figure DR-6, the water treatment facility and the wet cooling towers would result in the demolition of various support building and facilities at HBGS that would hamper the efficient operation of Units 1 and 2 under the No Project Alternative.

We trust this information and the attachments provided herewith contain the information you need to complete the No Project Alternatives analysis.

Salazar, Cindy/SCO

Subject: RE: HBEP Alts: Orange County Sanitation District

From: Mason, Robert/SCO
Sent: Thursday, August 15, 2013 1:43 PM
To: 'Miller, Felicia@Energy'
Cc: Bell, Kevin W@Energy
Subject: FW: HBEP Alts: Orange County Sanitation District

Felicia

We are gathering the info requested by staff in their e-mail below.

While we are doing that, we wanted to bring the following key items back to your attention (please forward to Negar and to other staff as appropriate):

1. See section 1.2 Project Objectives (the overall text and the bullet list on p 1-4 that outlines the objectives of HBEP). As you know, the analysis of the No Project Alternative must consider how the No Project alternative will feasibly attain most these objectives.
2. In addition, the No Project Alternative is informed by the Project Description and reflects what would be reasonably foreseeable if the project did not proceed. As discussed in various sections of the AFC – see 2.0 Project Description – page 2-1 – 3rd para in the intro portion of the Project Description:

"Existing Huntington Beach Generation Station Units 3 and 4 were licensed through the California Energy Commission (CEC 00-AFC-13C) and demolition of these units is authorized under that license and will proceed irrespective of the HBEP. Therefore, demolition of existing Huntington Beach Generating Station Units 3 and 4 is not part of the HBEP project definition. However, to ensure a comprehensive review of potential project impacts, the demolition of existing Huntington Beach Generating Station Units 3 and 4 is included in the cumulative impact assessment. Removal/demolition of existing Huntington Beach Generating Station Units 3 and 4 will be in advance of the construction of HBEP Block 2."

As you consider the No Project, it is important to keep in mind that Units 3 and 4 are owned by Edison Mission Energy and are operated by AES under a contract with EME. Also, as part of the commissioning and commercial operation of EME's Walnut Creek, the air emission credits for Units 3 and 4 were transferred to EME Walnut Creek and are no longer available for Units 3 and 4, and Units 3 and 4 were retired. In addition, subsequent to the retirement of Units 3 and 4 and the transfer of emission credits, Units 3 and 4 have been brought back online as synchronous condensers under CAISO to provide voltage support, with physical changes that prevent the boilers from being fired in the future (without physical changes) – along with its emission credits being transferred.

Therefore, the No Project Alternative is the continued operation of Units 1 and 2 for power generation (and the need for Units 1 and 2 to meets their OTC timeline) and the continued operation of Units 3 and 4 as synchronous condensers. HBEP is AES's OTC compliance plan – that is HBEP allows existing Units 1 and 2 to be retired to meet the OTC timeline for these units.

As discussed in the Project Description, existing Units 1 and 2 must continue to operation until HBEP Blocks 1 and 2 are both COD. As defined in the Project Description, when HBEP Block 1 is COD, then HBGS Units 3

and 4 will be demolished (under its separate license) and HBEP Block 2 will be constructed on the basic footprint of existing Units 3 and 4. After both HBEP Blocks 1 and 2 are COD, the demo of existing Units 1 and 2 will occur.

Thanks

Robert

From: Negar Vahidi [mailto:NVahidi@aspeneg.com]
Sent: Tuesday, August 13, 2013 12:15 PM
To: Mason, Robert/SCO
Cc: Scott Debauche; Stennick, Amanda@Energy; Miller, Felicia@Energy (Felicia.Miller@energy.ca.gov)
Subject: RE: HBEP Alts: Orange County Sanitation District

Hi Bob,

AFC Section 6.7.2 (Power Plant Cooling Alternatives) discusses several potential water sources for a No Project scenario where the existing HBGS would be converted for continued wet cooling use compliant with the SWRCB's OTC policy. With respect to utilizing secondary treated water from the OCSD's Huntington Beach treatment facility:

1) Can you confirm that the OCSD facility referenced in the AFC is located at the southeast corner of Ellis Ave. and Ward St. in Huntington Beach?
2) If there would need to be a pipeline routed from the OCSD facility to the HBGS, Staff is assuming a buried pipeline route would likely follow Brookhurst Street south, then west on Hamilton Avenue to the HBGS site. Does this routing make sense? Or, is there another/better route?
3) Because this water source would require additional treatment prior to power plant use, would you be able to give us a rough estimate as to the footprint and general size (i.e., height/massing) of such a treatment facility and likely location (within the HBGS or within the OCSD facility, if the HBGS site is too constrained to accommodate such an on-site treatment facility)?

Thank you in advance for any information you may be able to provide!

Negar Vahidi
Senior Associate
(310) 387-6807 cell
www.aspeneg.com


Hyperion TP
Edward C. Little WRF
Los Angeles
Los Coyotes WRP
AES Redondo Beach LLC
Carson Regional WRF
Joint Plant
Long Beach WRP
AES Alamitos LLC
Terminal Island WRP
Orange
Green Acres Project (GAP)
OCSD Plant #1
Michelson WRP
AES Huntington Beach LLC
OCSD Plant #2
San Bernardino
Legend
AES Power Plant
Wastewater Treatment Plant
Figure 1
Reclaimed Water Sources
Reclaimed Water Study
AES Southland Repowering Project
0
2.5
5 Miles

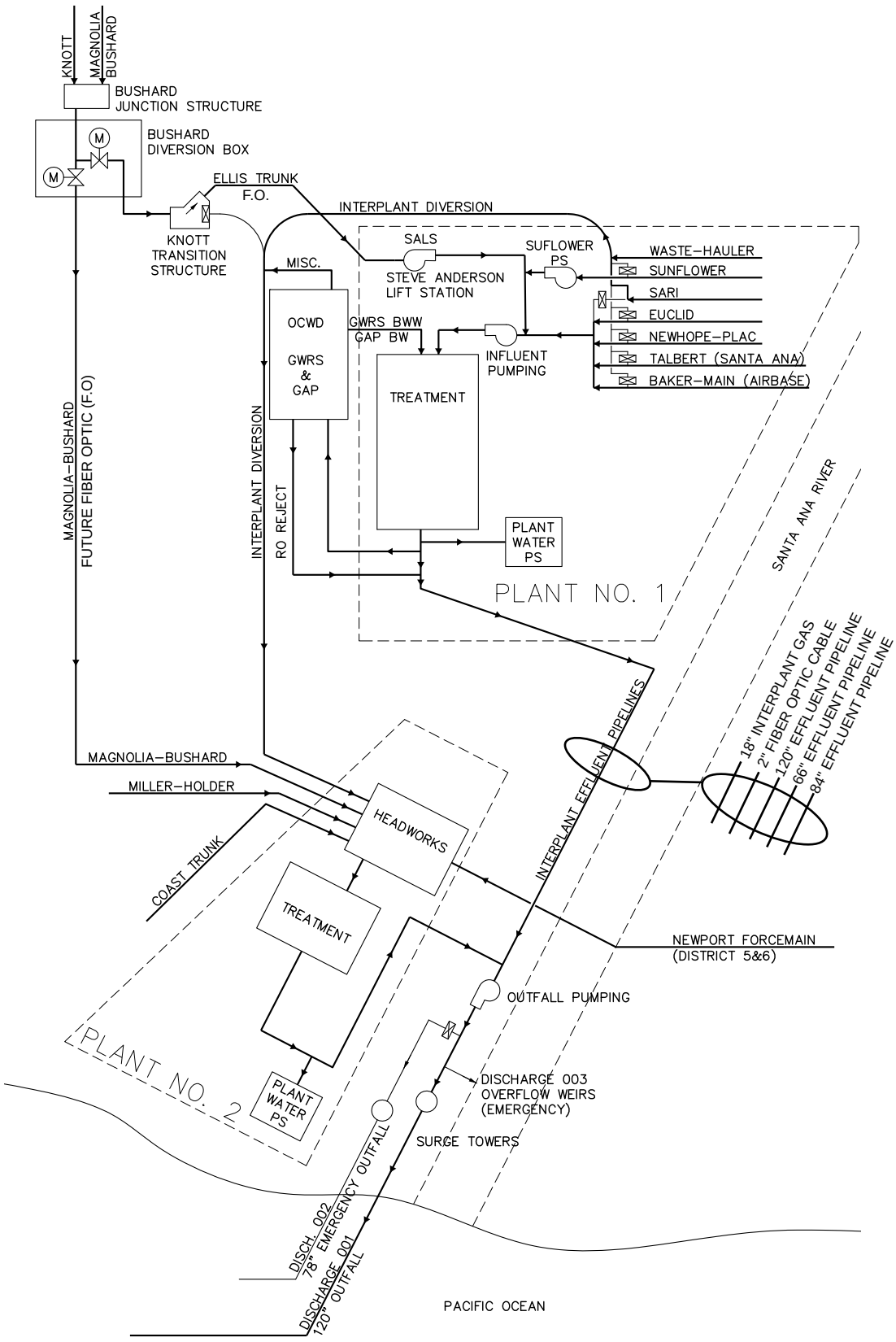

EXHIBIT 3-3
Interplant Diversions

Orange County Sanitation District
2009 Master Plan

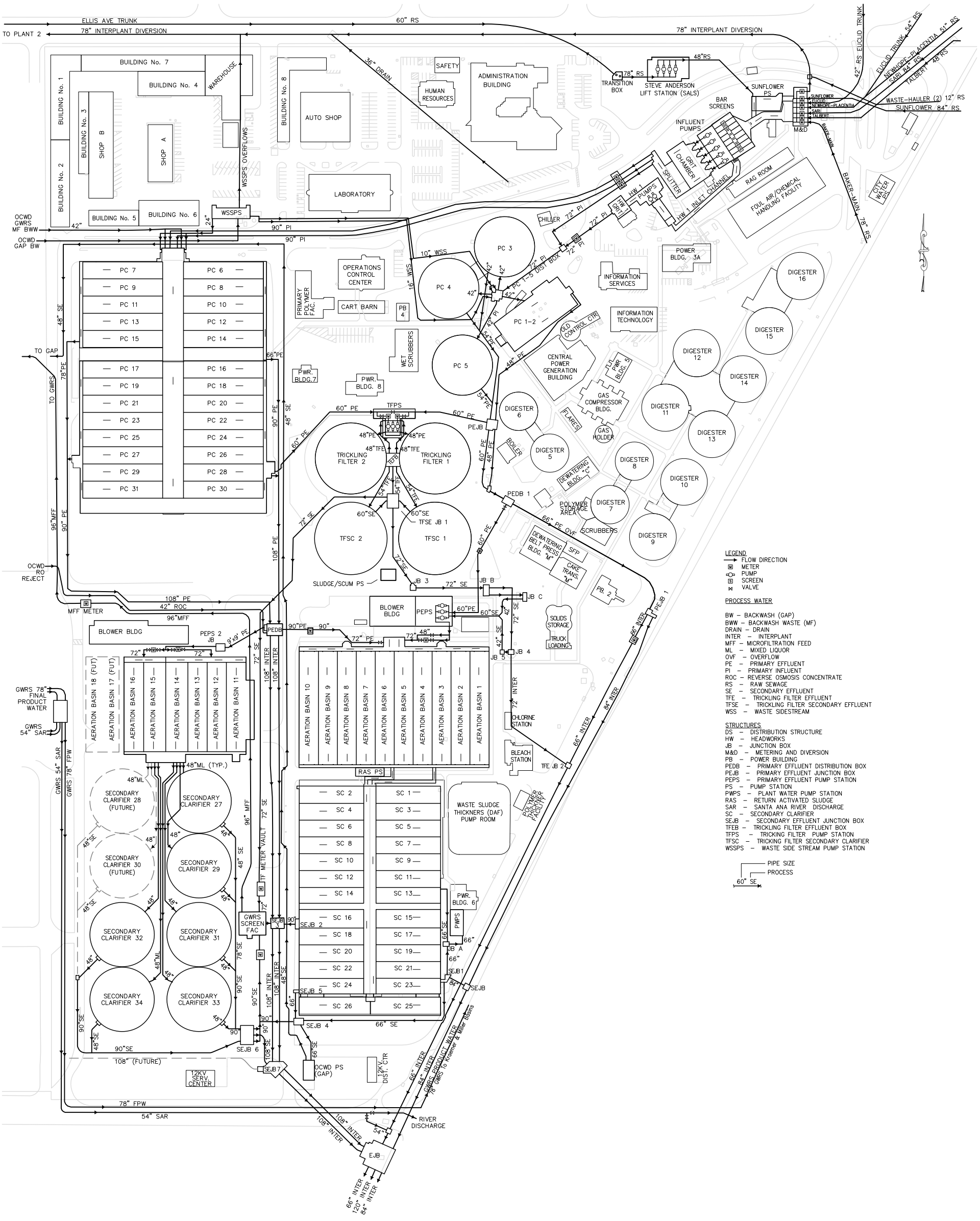

EXHIBIT 3-5
Plant No. 1

Orange County Sanitation District
2009 Master Plan

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LEGEND
- FLOW DIRECTION
- METER
- PUMP
- SCREEN
- VALVE

PROCESS WATER

DRAIN – DRAIN
INTER – INTERPLANT
ML – MIXED LIQUOR
OUT – OUTFALL
OVF – OVERFLOW
PE – PRIMARY EFFLUENT
PI – PRIMARY INFLUENT
ROC – REVERSE OSMOSIS CONCENTRATE
RS – RAW SEWAGE
SE – SECONDARY EFFLUENT
TFE – TRICKLING FILTER EFFLUENT
TFSE – TRICKLING FILTER SECONDARY EFFLUENT
WSS – WASTE SIDESTREAM

STRUCTURES

BLDG – BUILDING
CHEM – CHEMICAL
DS – DISTRIBUTION STRUCTURE
EPSA – EFFLUENT PUMP STATION ANNEX
FAC – FACILITY
FB – FOSTER/BOOSTER
HW – HEADWORKS
IDB – INFLUENT DIVERSION BOX
JB – JUNCTION BOX
M&D – METERING AND DIVERSION
MH – MANHOLE
PB – POWER BUILDING
PEDB – PRIMARY EFFLUENT DISTRIBUTION BOX
PEJB – PRIMARY EFFLUENT JUNCTION BOX
PEPS – PRIMARY EFFLUENT PUMP STATION
PIJB – PRIMARY INFLUENT JUNCTION BOX
PS – PUMP STATION
PWDB – PLANT WATER DISTRIBUTION BOX
PWPS – PLANT WATER PUMP STATION
RAS – RETURN ACTIVATED SLUDGE
RSS – RETURN SECONDARY SLUDGE
SAR – SANTA ANA RIVER DISCHARGE
SC – SECONDARY CLARIFIER
SEJB – SECONDARY EFFLUENT JUNCTION BOX
SLB – SCREEN LOADING BUILDING
TFEB – TRICKLING FILTER EFFLUENT BOX
TFPS – TRICKING FILTER PUMP STATION
TFSC – TRICKING FILTER SECONDARY CLARIFIER
WSSPS – WASTE SIDE STREAM PUMP STATION

PIPE SIZE
PROCESS
60" SE

SCALE = 1:100

EXHIBIT 3-6
Plant No. 2

Orange County Sanitation District
2009 Master Plan

CH2MHILL

0 200 400 600 Feet

N

Legend

- AES Huntington Beach Generating Station
- AES Huntington Beach Energy Project
- Water Treatment Unit
- Wet Cooling Tower
- AES Huntington Beach Energy Project
- City of Huntington Beach
- Southern California Edison

FIGURE DR-6
Potential Location Alternative Wet Cooling Tower and Water Treatment Unit
AES Huntington Beach Energy Project
Huntington Beach, California

CH2MHILL

\\ZION\SACGIS\PROJ\AES\MAPFILES\HUNTINGTON_BEACH\PROJECT\HUNTINGTON_LOCATION_COOLINGTOWER.MXD KMINO 9/30/2013 10:03:03 AM

Table 1

Footprint of the Unit Processes

GMF	5,500
CCB	6,000
Chemical Facility	
Sodium Hypo	700
Ferric	500
Polymer	500
Total Area, sf	13,200