GWF Henrietta Combined Cycle Power Plant

(01-AFC-18C)

Data Responses Set 1

(Responses to Data Requests 1 through 11)

Submitted to

California Energy Commission

Submitted by

GWF Energy, LLC

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With Assistance from

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Introduction

Attached are GWF Energy LLC's responses to the California Energy Commission (CEC) staff's Data Requests numbered 1 through 6 – Cultural Resources, 7 – Public Health, 8 and 9 – Transmission System Engineering, 10 – Visual Resources, and 11 – Waste Management for the GWF Henrietta Combined Cycle Power Plant Project (GWF Henrietta). The CEC staff served these data requests on December 3, 2008, as part of the discovery process for GWF Henrietta's Petition for License Amendment (01-AFC-18). The responses are presented in the same order as the CEC staff presented them and numbered (1 through 11). New or revised graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Data Request 3 would be numbered Table DR3-1. The first figure used in response to Data Request 3 would be Figure DR3-1, and so on.

Additional documents submitted in response to a data request i.e., stand-alone documents) are found at the end of this Data Response submittal and are not sequentially page-numbered with the remainder of the document, though they may have their own internal page numbering system.

The Applicant looks forward to working cooperatively with CEC staff as GWF Henrietta proceeds through the License Amendment process. We trust that these responses address the staff's questions and remain available to have any additional dialogue the staff may require.

Cultural Resources (1–6)

Background

The previous construction of the Henrietta Peaker Project (HPP) probably resulted in the disturbance of the upper soil layers of the entire site. The present GWF Henrietta Petition for Amendment does not provide information on the depth of that disturbance, nor do any of the other, prior information sources provided by GWF Energy LLC in support of the petition.

Staff, however, is concerned that undisturbed soils may exist at depths the previous excavations did not reach in the locations where the proposed new equipment would be installed. The GWF Henrietta's project description (pp. 1-1 to 1-2) lists several equipment installations that appear to require foundations capable of considerable weight-bearing. Staff assumes that such foundations would have to extend to some depth in the ground and additionally that overexcavation of the holes for these foundations and filling with engineered fill could be required to ensure the stability of the foundations. Thus it is possible that excavations associated with the new installation could reach previously undisturbed soil layers where intact archaeological deposits could exist.

To assess potential project impacts to possible buried archaeological resources, staff needs information on the locations and on the greatest depths to which the excavations for the previously installed equipment extended and on the greatest depths to which the proposed new equipment foundations would extend.

Data Request

1. Please provide the depths of the excavations, from the existing finish grade, required for the following foundations for proposed equipment and modifications to existing HPP equipment, systems, and features:

    a) new once-through steam generators (OTSGs)

    b) removal of HPP selective catalytic reduction (SCR) systems stacks

    c) new steam turbine-generator (STG)

    d) new air-cooled condenser (ACC)

    e) new auxiliary boiler and stack

    f) modified HPPP water piping system, fire protection system, natural gas piping system, wastewater treatment system, and stormwater drainage collection system

    g) HPP stormwater retention basin relocation and enlargement

    h) new water treatment building

i) new generator step-up transformer (GSU)

Response: The estimated excavation depths for the requested GWF Henrietta project components are listed in Table DR1-1.

TABLE DR1-1
Excavation Depths for the Largest GWF Henrietta Structures

Project Feature	Estimated Excavation Depth
Once-through steam generators (OTSGs)	4 feet below grade
Removal of SCR and stacks	4 feet below grade
Steam turbine generator (STG)	5 feet below grade
Air-cooled condenser (ACC)	7 feet below grade
Auxiliary boiler and stack	3.5 feet below grade
Modified fire protection system (greatest piping depth)	4.5 feet below grade
New stormwater retention basin *	3 feet below grade
New generator step-up transformer (GSU)	3.5 feet below grade

*The present grade elevation of the area where the new retention basin will be constructed is 3.5' lower than the current site elevation, therefore the required excavation depth is smaller than the final depth of the retention basin.

Data Request

2. Please provide a project site plan showing the locations of proposed equipment, pipelines, and underground tank installations the excavations for which would exceed 4 feet below the existing finish grade. A site plan such as Petition Figure 2-1 with the appropriate equipment and pipelines indicated by shading or other such convention would be acceptable.

Response: Please refer to attached Figure DR2-1. The shaded areas represent excavations expected to be greater than four feet in depth.

The existing HPP includes a storm water retention basin that is 6.5 feet deep on the eastern side of the plant, and as shown in Figure DR3-1, the majority of the new equipment will be constructed over the existing basin. The STG foundation will be elevated approximately 1.5 feet above the bottom of the existing retention basin and the ACC foundation will require excavation of an extra 6 inches from the bottom of the existing basin. Extensions of the fire protection system piping will require some additional trenching at depths greater than 4 feet, but the overall area is minimal. The installation of the existing ammonia spill tank at HPP required an excavation approximately 15 feet deep.

The areas requiring excavations greater than 4 feet in depth were significantly larger during the construction of HPP and no archaeological artifacts were found. The proposed modifications to the plant do not require any excavations deeper than those previously performed on site and the majority of the new construction will occur over already excavated areas.

Data Request

3. Please provide a separate project site plan showing the locations of existing equipment, pipelines, and underground tank installations the excavations for which exceeded four feet below the existing finish grade. A site plan such as Petition Figure 2-1 with the appropriate equipment and pipelines indicated by shading or other such convention would be acceptable.

Response: Please refer to attached Figure DR3-1. The shaded areas represent areas that were excavated to depths greater than 4 feet during the construction of the Henrietta Peaker Project (HPP).

Background

If a geotechnical study is planned, staff believes that could present an opportunity for the applicant to reduce the amount of archaeological monitoring that staff recommends in the revised conditions for certification that would accompany a decision from the Commission to allow the proposed project change. While it has not yet been established that the proposed project change would disturb previously undisturbed ground (which is the purpose of the previous two Data Requests), if the applicant were to provide factual field data on the archaeological potential of the undisturbed geological deposits that underlie the portions of the proposed project area subject to ground disturbance, staff would have a more objective basis for reducing possible archaeological monitoring requirements. If this possibility interests the applicant, staff recommends that a professional geoarchaeologist participate in any future geotechnical study and collect the data needed for an analysis of the potential for buried archaeological deposits at the proposed GWF Henrietta plant site. (”Professional geoarchaeologist” means an archaeologist who is able to demonstrate the completion of graduate-level coursework in geoarchaeology, Quaternary science, or a related discipline.)

Involving a geoarchaeologist in a future geotechnical study is strictly voluntary. Staff offers two options below for this participation. The greater involvement the geoarchaeologist has in the geotechnical study, the more likely that the resulting cultural resources information would either reduce the project’s archaeological monitoring requirements or focus them more efficiently and cost effectively than would otherwise be possible.

Data Request

4. Please choose one of the following options for the participation of a geoarchaeologist in the planned geotechnical study at the GWF Henrietta project site.

   a) Please provide a professional geoarchaeologist the opportunity to observe, in the field, the removal of any sediment cores by the geotechnicians, to examine the cores in the field or a laboratory for physical and chemical indices of human activity, and, where feasible, to collect chronometric dating samples from the cores. At least one of the

cores should be drilled to a depth that exceeds, by approximately one meter, the deepest construction excavations planned for the project. Prior to the field work, the geoarchaeologist should conduct background research on the geology and geomorphology of the project area to be able to place the stratigraphic units observed in the cores into a meaningful local sequence. The geoarchaeologist should write a brief letter report for staff that describes the fieldwork and the stratigraphic units observed, that estimates the probable age of those units, that interprets the depositional history of the units, and that assesses the likelihood that the units contain buried archaeological deposits.

b) Or, please have a trench excavated to the specifications of a professional geoarchaeologist in the part of the proposed project site where project excavations are expected to extend to the greatest depth. Prior to the field work, the geoarchaeologist should conduct background research on the geology and geomorphology of the project area to be able to place the stratigraphic units observed in the trench into a meaningful local sequence. Have the geoarchaeologist record reasonably detailed written descriptions of the lithostratigraphic and pedostratigraphic units in one profile of the trench. The recordation of that profile should include a measured drawing of the profile, a profile photograph with a metric scale and north arrow, and the screening of a small sample (three 5-gallon buckets) of sediment from the major lithostratigraphic or pedostratigraphic units in the profile, or from two arbitrary levels in the profile, through ¼-inch hardware cloth. Soil humate samples for dating the profile's stratigraphic sequence should also be collected, as appropriate. Have the soil humate samples assayed at a professional radiocarbon laboratory, per the geoarchaeologist's instructions, and have the results provided to the geoarchaeologist. The geoarchaeologist should write a brief letter report for staff that describes the fieldwork and the stratigraphic units observed, estimates the probable age of those units, interprets the depositional history of the units, and assesses the likelihood that the units contain buried archaeological deposits.

Response:

As discussed in Section 3.3.2 of the Petition for License Amendment, no significant impacts to cultural or archaeological resources are anticipated from the construction of GWF Henrietta. For the construction of the existing HPP, the areas that required excavations greater than 4 feet in depth were significantly larger than the excavation areas proposed for GWF Henrietta and no archaeological artifacts were found during HPP construction. The proposed project does not require any excavations deeper than those previously performed onsite and the majority of the new construction will occur over already excavated areas. Therefore, it is reasonable to estimate that new excavations associated with GWF Henrietta will not produce buried archaeological deposits. In the unlikely event that an unidentified, buried archaeological resource is discovered during the construction of GWF Henrietta, the mitigation approach discussed in Section 3.3.3 of the Petition for License Amendment

would ensure that any potential impacts to the resources would be reduced to less than significant levels.

The Applicant believes that additional geotechnical studies would not be required to support scaling back the standard archaeological monitoring requirements, which GWF believes is appropriate. While final engineering will determine the location of foundation pilings, installation of pilings will not involve excavations into previously undisturbed soils. The guide hole for each pile will be excavated to previously disturbed soil depths. Pile driving will not result in any spoil piles, and therefore, it is the Applicant's opinion that geoarchaeological monitoring will not be required.

The Applicant believes the approach proposed in Section 3.3 of the Petition for License Amendment represents the most efficient, cost-effective way to ensure the proposed project's construction activities will not significantly impact undiscovered archaeological resources, even in the very unlikely event such resources are encountered given the highly disturbed nature of the site. The Applicant would likely bear substantial costs and risks of delay to provide the information described in Data Request 4. The Applicant believes the benefit of the additional information would not warrant the additional costs and potential delays because any potential impacts are highly unlikely and can be mitigated to less than significant levels based on the approach provided in the Petition for License Amendment. As such, the Applicant respectfully declines to perform the additional geotechnical studies described in Data Request 4.

Background

The previous cultural resources investigations for the Henrietta Peaker Project (HPP) resulted in a final Cultural Resources Report (Brian Hatoff and Heather Dudock, "GWF Henrietta Peaker Project Final Cultural Resources Report, Condition of Certification CUL-3," prepared by URS for the California Energy Commission, July, 2002) that cites some cultural resources forms and a cultural resources survey report that staff has been unable to find in either the materials submitted by the applicant or in the HPP files retained by the Energy Commission. Staff needs to review these materials to complete its identification of both potential cultural resources and potential project impacts. If copies of these materials cannot be obtained from the HPP's previous cultural resources consultant, staff notes that they were filed at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (CHRIS) and should be obtainable there.

Data Request

5. Please provide copies of the Department of Parks and Recreation Form 523 (DPR 523) site records previously completed/updated by the HPP cultural resources consultants for the resources listed as a-d, below. HPP-2 and HPP-4 are transmission lines, probably the paired 230-kV Gates-McColl and Gates-Gregg transmission lines and the co-located 115-kV Henrietta-Kingsburg and 70-kV Henrietta-Tulare Lake transmission lines, but staff does not have information on which is HPP-2 and which is HPP-4.

    a. HPP-1 (Henrietta Substation);

b. HPP-2;

c. HPP-3 (70-kV Henrietta-Lemoore NAS [Naval Air Station] transmission line); and

d. HPP-4.

Response: As described in Section 1.5.1.1, Key Findings/Recommendations, of the GWF Henrietta Peaker Project Final Cultural Resources Report (Condition of Certification CUL-3), dated July 2002 (Final Report), Sites HPP-1 through HPP-4 were determined to be ineligible for listing in the California Register of Historic Resources (CRHR) or in the National Register of Historic Places (NHRP) and were not affected by the construction of the HPP.

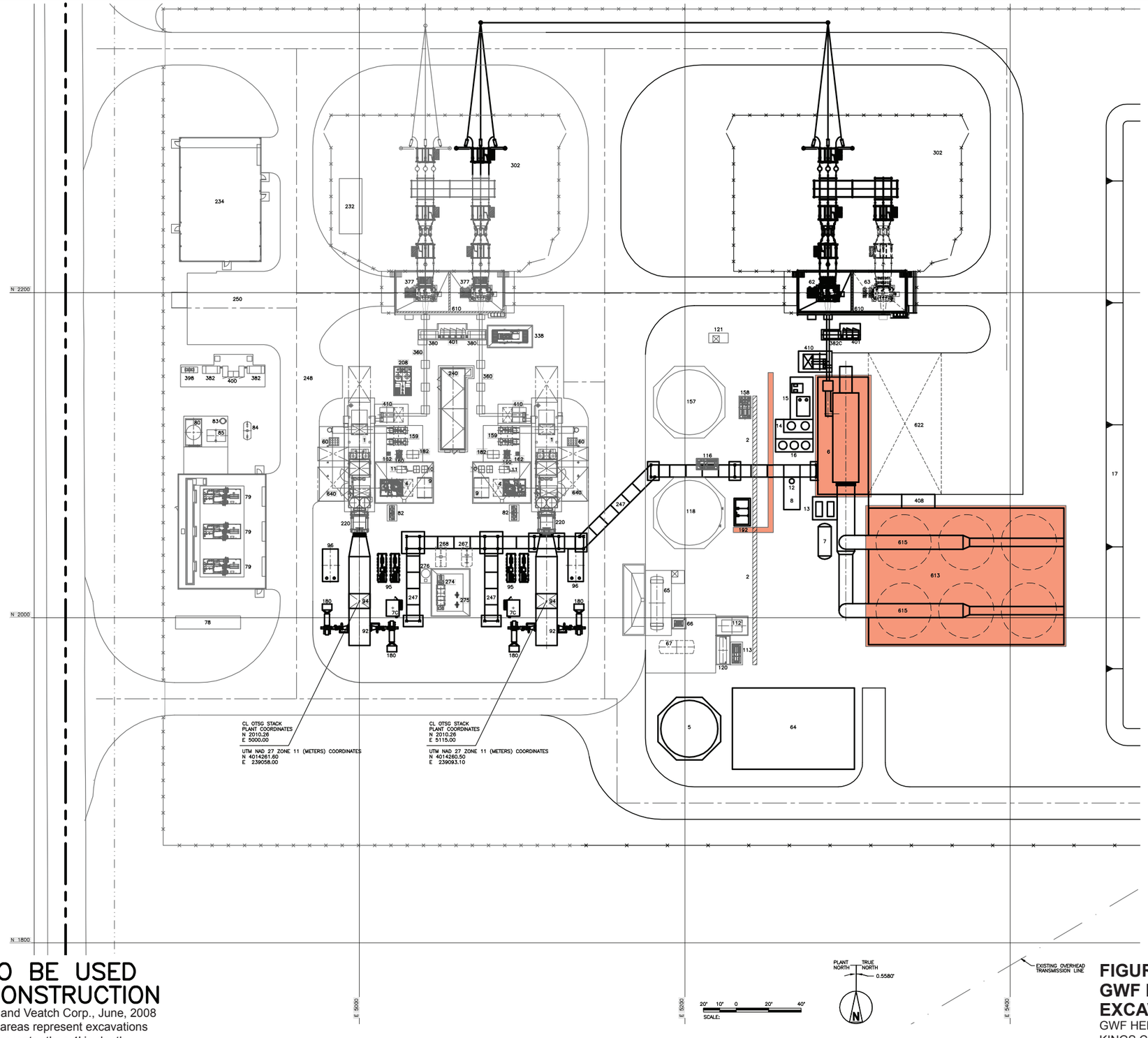
HPP-1 is the previously recorded existing Henrietta Substation, constructed in 1911. HPP-2, HPP-3, and HPP-4 are all previously recorded transmission lines. These sites are described in greater detail in Section 2.1, Previously Recorded Sites, in the Henrietta Peaker Project, Technical Report, Addendum 1, dated March 5, 2002 (Addendum 1).

Further, as part of the findings of the cultural resources monitoring of the HPP as described in Section 3.3.1.1 of the Petition for License Amendment, it was noted that no cultural resources were encountered in the area of these four sites, and subsequently no mitigation measures were required. Additionally, it was determined that no cultural resources were affected through implementation of the HPP. The potential affect of GWF Henrietta on cultural resources is confined to the larger area previously evaluated for the HPP. No resources were encountered with the implementation of the HPP, therefore, these sites will not be affected as part of implementation of GWF Henrietta. The cultural resources reports were filed under confidentiality as part of Attachment G (Reference CD) to the GWF Henrietta Petition for License Amendment.

Data Request

6. Please provide a copy of the following addendum to the HPP AFC: URS, "Henrietta Peaker Project Cultural Resources Technical Report Addendum 1, Appendix C (Telephone Line)," 2002.

Response: This report was included in the original Petition for License Amendment submittal as part of the "Henrietta Peaker Project Cultural Resources Technical Report Appendix C" document located on the Confidential Cultural and Paleontological Reports CD. Please see page 43 of said document for the Telephone Line Addendum (Addendum 1).



LEGEND

No.	COMPONENT NAME
1	COMBUSTION TURBINE LM6000
2	EXISTING PIPE RACK
4	AUXILIARY SKID
5	FIRE WATER TANK
6	STEAM TURBINE GENERATOR
7	CONDENSATE DRAIN TANK
7C	CONTINUOUS EMISSION MONITORING EQUIPMENT
8	AUXILIARY BOILER
9	FIN FAN LUBE OIL COOLER
10	FIN FAN CLUTCH LUBE OIL COOLERS
11	SSS CLUTCH LUBE OIL SKID
12	AUXILIARY BOILER STACK
13	CONDENSATE PUMPS
14	TURBINE LUBE OIL COOLING UNIT
15	STEAM TURBINE LUBE OIL UNIT
16	STEAM TURBINE LUBE OIL WSAC UNIT
17	STORMWATER RETENTION BASIN
60	CO2 BOTTLES
62	STEAM TURBINE SUBSTATION STEP-UP TRANSFORMER
63	FUTURE SOLAR SUBSTATION STEP-UP TRANSFORMER
64	WATER TREATMENT BUILDING
65	AMMONIA STORAGE TANK
66	AMMONIA FORWARDING PUMP SKID
67	AMMONIA SPILL CONTAINMENT TANK (BURIED)
78	FUEL GAS METERING STATION
79	FUEL GAS COMPRESSOR SKID
80	FUEL GAS COOLER
82	FUEL GAS FILTER
83	FUEL GAS ACCUMULATOR
84	FUEL GAS WASTE SUMP (BURIED)
85	FUEL GAS COALESCING FILTER
92	ONCE THROUGH STEAM GENERATOR (OTSG)
94	OTSG STACK
95	BOILER FEED PUMPS
96	COMBINED CYCLE AMMONIA SKID
112	POTABLE WATER TREATMENT SKID
113	RAW WATER BOOSTER PUMP SKID
116	RAW WATER FORWARDING PUMPS
118	RAW/FIRE WATER STORAGE TANK
120	RAW WATER TREATMENT SKID
121	SERVICE WATER BOOSTER PUMP SKID
157	DEMINERALIZED WATER STORAGE TANK
158	DEMINERALIZED WATER INJECTION FORWARDING PUMPS
159	WATER INJECTION BOOST PUMP SKID
160	SPRINT PERFORMANCE SKID
162	HIGH PRESSURE DEMIN. WATER FILTER SKID
180	TEMPERING AIR FANS
182	SPRAY MIST EVAP. COOLER PUMP SKID
191	FIRE CARTS (NOT SHOWN FOR CLARITY)
192	FIRE PUMP SKID
208	AIR COMPRESSOR SKID
220	ANTI-ICING HEAT EXCHANGER SYSTEM
232	ELECTRICAL BUILDING
234	ADMINISTRATION/MAINTENANCE BUILDING
240	POWER CONTROL MODULE
247	PIPE AND CABLE WAYS
248	ROAD
250	PARKING AREA
267	WASTE WATER WASH TANK (BURIED)
268	OILY WATER SUMP TANK (BURIED)
274	OIL/WATER SEPARATOR
275	OIL ABSORBENT FILTER
276	RAW WATER RETURN SKID
302	SUBSTATION
338	EMERGENCY DIESEL GENERATOR
360	NON-SEGREGATED BUS DUCT
377	MAIN SUBSTATION STEP-UP TRANSFORMER
380	AUXILIARY TRANSFORMER 13.8/480V
382	GAS COMPRESSOR TRANSFORMER 13.8/4160V
382C	TRANSFORMER 13.8/480V (COMBINED CYCLE)
398	480V GAS COMPRESSOR MCC
400	4160V DISTRIBUTION PANEL
401	480V DISTRIBUTION PANEL
408	COOLING TOWER SWITCHGEAR
410	MEDIUM VOLTAGE SWITCH GEAR
610	TRANSFORMER FIRE WALL
613	AIR COOLED CONDENSER
615	STEAM DUCT
622	STEAM TURBINE MAINTENANCE AREA
640	ENGINE REMOVAL AREA

NOT TO BE USED FOR CONSTRUCTION

Source: Black and Veatch Corp., June, 2008
Note: Shaded areas represent excavations expected to be greater than 4' in depth.

FIGURE DR2-1
GWF HENRIETTA COMPONENTS REQUIRING EXCAVATION GREATER THAN FOUR FEET IN DEPTH
GWF HENRIETTA COMBINED-CYCLE POWER PLANT
KINGS COUNTY, CALIFORNIA

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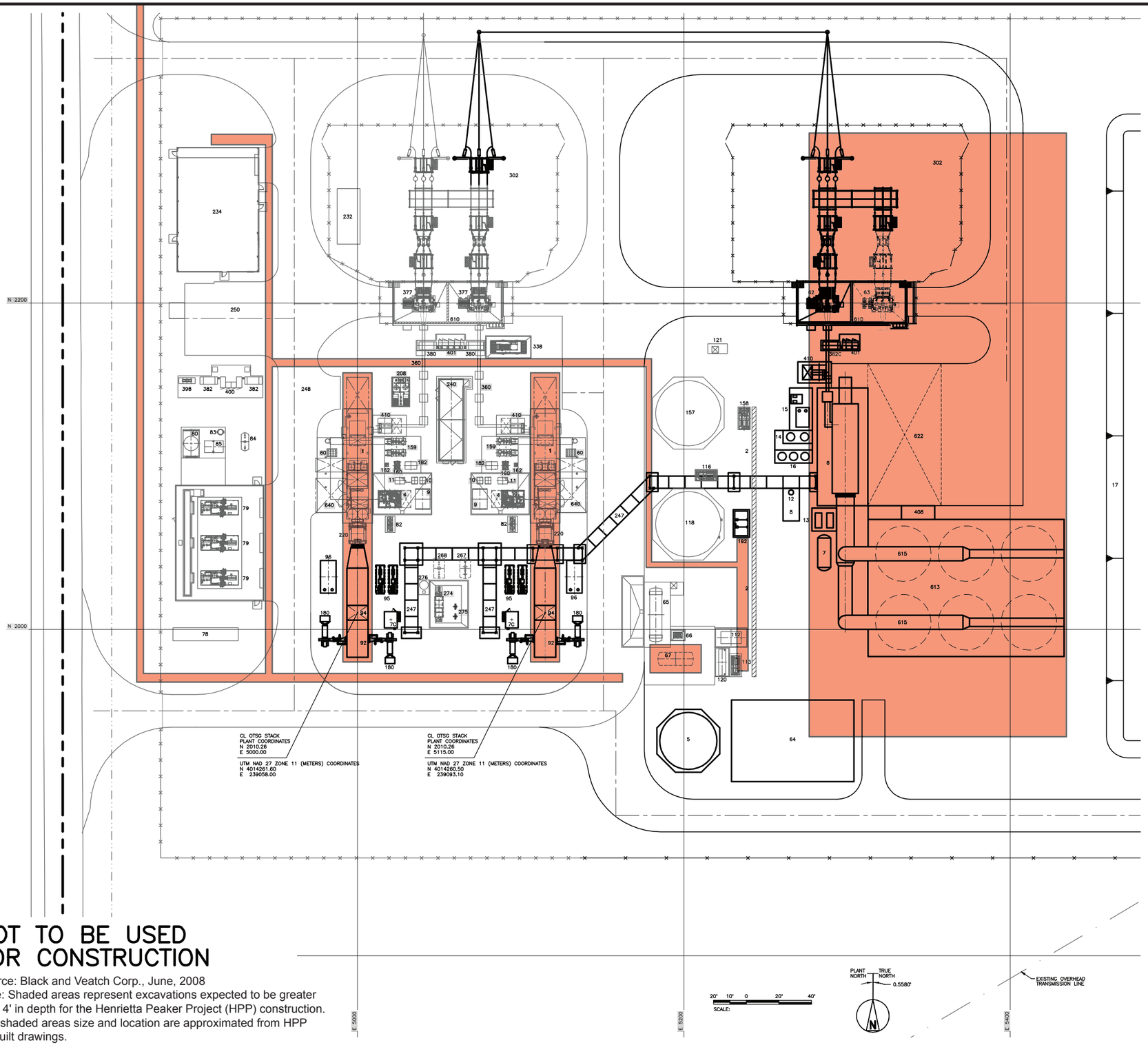

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640	ENGINE REMOVAL AREA

NOT TO BE USED
FOR CONSTRUCTION

Source: Black and Veatch Corp., June, 2008
Note: Shaded areas represent excavations expected to be greater than 4' in depth for the Henrietta Peaker Project (HPP) construction. The shaded areas size and location are approximated from HPP as-built drawings.

FIGURE DR3-1
HPP COMPONENTS PREVIOUSLY EXCAVATED GREATER THAN FOUR FEET IN DEPTH
GWF HENRIETTA COMBINED-CYCLE POWER PLANT
KINGS COUNTY, CALIFORNIA

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Public Health (7)

Background

The Petition to Amend did not provide a health risk assessment for the diesel emissions from construction activities nor did it provide diesel particulate matter (DPM) emission factors for the equipment that will be used. While staff understands that project construction emissions are short-term and may indeed pose an insignificant risk to public health as the Petition states, staff needs to verify this by reviewing the DPM emission factors for construction activities.

Data Request

7. Please provide DPM emission factors for construction activities in pounds per day and tons per year. This value can be submitted as a single number estimate of total emissions from all sources.

Response: The estimated daily and annual diesel particulate matter (DPM) emissions for the GWF Henrietta construction activities are included in Table DR6-1.

TABLE DR6-1
Diesel Particulate Matter Emissions for Construction Activities

	Maximum Daily DPM (lb/day)	Maximum Annual DPM (ton/year)
Onsite Construction Equipment (including onsite truck travel)	7.0	0.75
Offsite Delivery Trucks	0.13	0.01

Notes: Data extracted from the detailed construction emission calculations included in Attachment C1 of the "Petition for Amendment to Henrietta Peaker Project (01-AFC-18)"

Transmission System Engineering (8–9)

Background

Staff needs to determine the system reliability impacts of the project interconnection and to identify the interconnection facilities including downstream facilities needed to support the reliable interconnection of the proposed Henrietta Combined-Cycle Power Plant (Henrietta Plant). The interconnection must comply with the Utility Reliability and Planning Criteria, North American Electric Reliability Council (NERC) Planning Standards, NERC/Western Electricity Coordinating Council (WECC) Planning Standards, and California Independent System Operator (California ISO) Planning Standards. In addition the California Environmental Quality Act (CEQA) requires the identification and description of the "Direct and indirect significant effects of the project on the environment."

For the compliance with planning and reliability standards and the identification of indirect or downstream transmission impacts, staff relies on the System Impact Study (SIS) and Facilities Study (FS) as well as review of these studies by the agencies responsible for insuring the adjacent interconnecting grid meets reliability standards, in this case, Pacific Gas and Electric (PG&E) and/or California ISO. The studies analyze the effect of the proposed project on the ability of the transmission network to meet reliability standards. When the studies determine that the project will cause the transmission to violate reliability requirements the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include modification and construction of downstream transmission facilities. The CEQA requires environmental analysis of any downstream facilities for potential indirect impacts of the proposed project.

Staff requires the SIS, (and or FS),and one line diagrams to identify potential downstream transmission facilities that may require due to interconnection of the Henrietta Plant to the California ISO grid and to determine the interconnection would comply with the NERC/WSCC and /or Utility planning standards and reliability criteria.

Data Request

8. Please provide a System Impact Study for the Henrietta Combined Cycle Power Plant. The Study should analyze the system impact with and without the project during peak and off-peak system conditions, which will demonstrate conformance or non-conformance with the utility reliability and planning criteria with the following provisions:

    a. Identify major assumptions in the base cases including imports to the system, major generation and load changes in the system and queue generation.

b. Analyze system for N-0, important N-1 and critical N-2 contingency conditions and provide a list of criteria violations in a table showing the loadings before and after adding the new generation.

c. Analyze the PG&E system for Short Circuit currents with and without the Henrietta Plant at strategic buses for three-phase and single line to ground faults. Submit the following along with a summary of the results.

d. Analyze system for Transient Stability and Post-transient voltage conditions under critical N-1 and N-2 contingencies, and provide related plots, switching data and a list for voltage violations in the studies. Provide a list of contingencies evaluated for each study.

e. List mitigation measures considered (required) and those selected for all criteria violations.

f. Provide electronic copies of *.sav and *.drw PSLF files.

g. Provide power flow diagrams (MW, % loading & P. U. voltage) for base cases with and without the project. Power flow diagrams must also be provided for all N-0, N-1 and N-2 studies where overloads or voltage violations appear.

Response: The GWF Henrietta System Impact Study (SIS), prepared by Navigant, is included as Attachment DR8-1. Two copies of the SIS, and five electronic copies (including PSLF files), are being included as part of this submittal.

Data Request

9. Provide a one-line diagram for the existing PG&E 70 kV Henrietta Substation after interconnection of the modified project. Show the existing bay arrangement of the equipments with ratings such as breakers, disconnect switches and relays, etc. which are required to interconnect the project.

Response: The SIS shows that no modifications in PG&E's 70-kV Henrietta Substation are required to accommodate the additional power generated from the STG. Attached Figure DR9-1 is a conceptual single-line diagram of the Henrietta Substation 70-kV bus where the plant interconnects.

ATTACHMENT DR8-1

GWF Henrietta System Impact Study

ATTACHMENT DR8-1

GWF Henrietta System Impact Study

Two hard copies and five CDs of the System Impact Study have been provided under separate cover to the CEC.

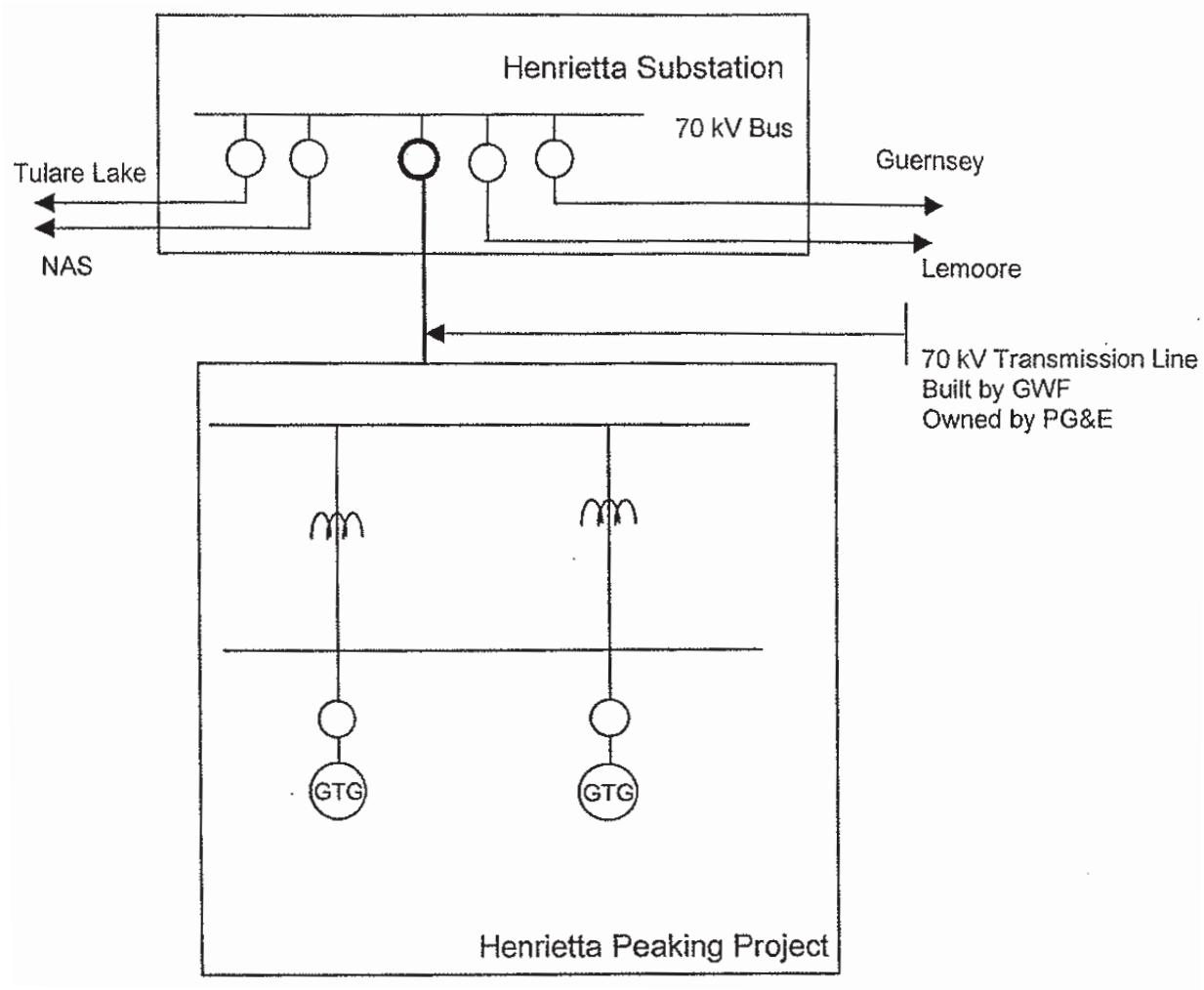


FIGURE DR9-1
CONCEPTUAL ONE-LINE DIAGRAM OF THE HENRIETTA SUBSTATION 70-KV BUS AFTER INTERCONNECTION OF THE MODIFIED PROJECT
GWF HENRIETTA COMBINED-CYCLE POWER PLANT
KINGS COUNTY, CALIFORNIA

NOT TO BE USED
FOR CONSTRUCTION

CH2MHILL

EY072008002SAC Figure_DR9-1.ai 01.16.09 tdaus

Visual Resources (10)

Background

To comply with Appendix B (g) (6) (F) of the Energy Commission's siting regulations as well as to ensure a comprehensive visual review of the existing site, applicants are required to provide full-page color photographic reproductions of the existing site.

According to Section 3.12.1, Environmental Baseline Information, in the Petition for License Amendment, the exiting site will be expanded within the existing site fence line.

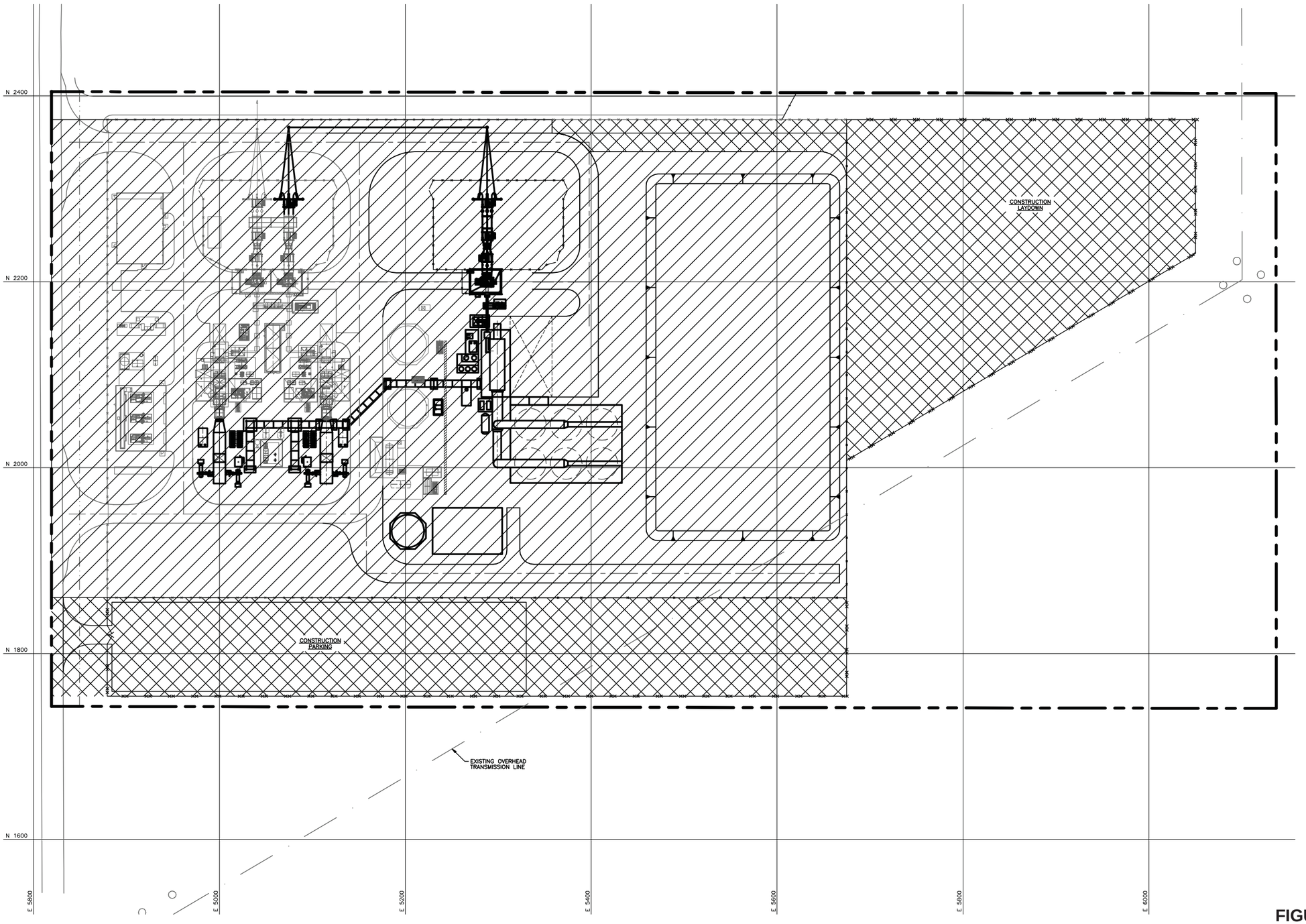
Data Request

10. Please provide full-page color photographic reproductions of the existing site, including expansions. Please clearly identify all expansion areas as to their use; for example, construction, laydown, and parking.

Response: Consistent with your request and following coordination with CEC staff, this response addresses CEC staff concerns related to the visibility of temporary construction and laydown areas for GWF Henrietta. Figure DR10-1 shows the disturbed areas associated with GWF Henrietta and specifically identifies the construction laydown and parking areas. Figure DR10-2 shows the locations of the key observation points (KOP) presented in the Visual Resources Section of the GWF Henrietta License Amendment and one additional view point used to respond to this request (View DR10-3). Figure DR10-3 shows the extent of the construction laydown and parking areas, as viewed along 25th Avenue, zoomed in at 200%. Figure DR10-4A shows a closer view along 25th Avenue with the construction laydown and parking areas highlighted. Figure DR10-4B shows the location of the construction laydown and parking areas from a view to the south-southeast along 25th Avenue, north of the project site.

During construction activities, the parking areas will accommodate construction worker parking and the laydown areas will provide temporary storage for construction equipment, project components, trailer offices, and construction materials.

Once construction activities are completed, these areas will be cleared of all debris and returned to pre-construction conditions.



NOTES

1. SEE DWG SS-3000 FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS.

LEGEND

TEMPORARY DISTURBED AREA = 4.52 ACRES

PERMANENTLY DISTURBED AREA = 9.86 ACRES

PLANT NORTH — TRUE NORTH
0.5580°

40' 20' 0 40' 80'
APPROXIMATE SCALE IN FEET

FIGURE DR10-1
DISTURBED AREAS
GWF HENRIETTA COMBINED-CYCLE POWER PLANT
KINGS COUNTY, CALIFORNIA

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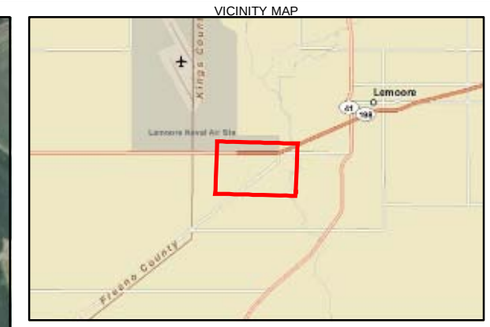

LEGEND

Project Area

View Points

N

0 0.25 0.5 Miles

APPROXIMATE SCALE IN FEET

FIGURE DR10-2
KEY OBSERVATION POINTS AND ADDITIONAL VIEWPOINTS
GWF HENRIETTA COMBINED-CYCLE POWER PLANT
KINGS COUNTY, CALIFORNIA

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View towards project site (along 25th Avenue, south of the project site) zoomed in at 200% in order to clearly see the extent of the construction laydown and parking areas. The existing HPP is visible in the center of this view, alongside 25th Avenue. The PG&E Henrietta substation, which borders the HPP to the north, is visible to the right of the HPP in this view. As shown on Figure DR10-1, the temporary construction laydown and parking area will run along the entire length of the south and southeast side of the existing HPP extending 1,350 feet long and 110 feet wide from the existing fenceline. The south side (left side of area shaded in magenta in the photograph, as viewed from this location) of this area will be used for temporary construction parking and the southeast side (right side of area shaded blue in the photograph, as viewed from this location) will be used for temporary construction laydown. Upon completion of construction, all equipment and materials will be removed from this area and it will be re-graded to the pre-construction condition.

FIGURE DR10-3
ADDITIONAL VIEW TOWARD PROJECT SITE AND LAYDOWN AREA
GWF HENRIETTA COMBINED-CYCLE POWER PLANT
KINGS COUNTY, CALIFORNIA

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A. View to the northeast of the project site from 25th Avenue. This location is not a Key Observation Point. The area to be temporarily disturbed by construction parking would occupy the entire area in front of the HPP in this view, extending approximately 110 feet from the existing fence line. The distance between the fence line and the wooden pole visible in the immediate foreground (center view), is approximately 300 feet. Beyond the HPP, but in front of the lattice transmission towers visible in the center-right portion of this view, is the location of the proposed construction laydown area. Construction equipment and activities at that location could be visible from this viewpoint. Both the parking and laydown areas will be temporarily disturbed; upon completion of construction, all equipment and materials will be removed from the temporary parking and laydown areas.

B. View to the south-southeast from a location on 25th Avenue, north of the project site. In the view from this location, the construction laydown area will occupy the area beyond the Henrietta Substation, as estimated in the photograph above. While some activities and equipment may be visible, the buildings and towers associated with the substation would likely obscure most views of the laydown site. The construction parking area, to be located on the south side of the HPP, would not be visible in this view. Upon completion of construction, all equipment and materials will be removed from the temporary laydown area.

FIGURE DR10-4
ADDITIONAL VIEWS TOWARD PROJECT SITE AND LAYDOWN AREAS
GWF HENRIETTA COMBINED-CYCLE POWER PLANT
KINGS COUNTY, CALIFORNIA

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Waste Management (11)

Background

Staff reviews the capacity available at off-site treatment and disposal sites and determines whether or not the proposed power plant's waste would have a significant impact on the volume of waste a facility is permitted to accept. Staff uses a waste volume threshold equal to 10 percent of a disposal facility's remaining permitted capacity to determine if the impact from disposal of project wastes at a particular facility would be significant. The California Integrated Waste Management Board provides guidance in their "Construction and Demolition and Inert Debris Tools and Resources Kit" which provides information on waste materials, densities, and methods for calculating waste volumes. This guidance can be found at http://www.ciwmb.ca.gov/leatraining/Resources/CDI/Tools/Calculations.htm.

Landfill capacities, in cubic yards, are identified in Amendment Section 3.13.1.2. Although Tables 3.13-1, 3.13-2, and Table 3.13-3 of Section 3.13 from the Amendment provide information on the estimated quantities of wastes generated during construction and operation, they do not provide a total volume of waste that would be generated during construction and operation. Therefore, staff cannot compare the volume of waste associated with the proposed GWF Henrietta Combined-Cycle Power Plant with the remaining volumetric capacity at potential landfill disposal sites.

Data Request

11. Please provide information on the total volume of waste, in cubic yards, that will be generated during construction and operation.

Response: GWF Henrietta will generate nonhazardous solid waste that will add to the total waste generated in Kings County and in California. Based on data collected during preparation of the License Amendment and confirmed in January 2009 and described in Section 3.13 Waste Management of the License Amendment, it was determined that there is adequate recycling and landfill capacity in California to recycle and dispose of the waste generated by the construction and operation of GWF Henrietta. It is estimated that GWF Henrietta will generate approximately 583.5 tons (398 cubic yards) of non-hazardous solid waste during construction and approximately 101.2 tons (67.5 cubic yards) of solid hazardous waste for a total of approximately 684.7 tons (456.5 cubic yards) of solid construction waste. The proposed project will also generate approximately 5.1 tons (3.4 cubic yards) a year of nonhazardous solid waste from operations and approximately 0.4 tons (0.26 cubic yards) of solid hazardous waste, for a total of approximately 5.5 tons (3.7 cubic yards) per year from operations. Detailed calculations are provided in Attachment DR11-1.

Considering that 653,963 tons (435,975.3 cubic yards) of solid wastes were landfilled in Kings County in 2007, GWF Henrietta's contribution will represent less than one percent of

the county's total waste generation. As discussed in Section 3.13.2 of the Petition for License Amendment, the GWF Henrietta project will not result in any significant impacts related to waste management.

Hazardous waste generated will consist of waste oil, filters and oily debris, and chemical cleaning wastes. Hazardous liquid waste streams such waste oil and turbine wash water waste will be recycled. Approximately every 3 to 5 years spent selective catalytic reduction (SCR) and oxidation catalysts will become part of the hazardous waste stream at approximately 20 to 30 tons (13.3 to 20 cubic yards) per event. Based on contacts with landfill operators made during preparation of the License Amendment and confirmed in January 2009, hazardous waste treatment and disposal capacity in California is more than adequate. Therefore, GWF Henrietta's contribution to hazardous waste recycling, treatment, and disposal capability within California will be less than significant.

ATTACHMENT DR11-1

Waste Generation Calculations

Table DR11-1
Cumulative Solid Waste to be Generated by GWF Henrietta

	Construction (Solid) (tons)	Operation (Solid) (tons per year)	Comments
Non-Hazardous Waste			**From Table 3.13-1 Non-Hazardous Wastes Generated During Construction**
Scrap wood, glass, plastic, paper, calcium silicate insulation, and mineral wool insulation	42.00	1.00	5,600lbs/mo*15mo=84000lbs=42tons
Scrap Metals	500.0	3.0	Construction period of 15 months used though start up and commissioning will likely generate less than peak construction
Concrete	40.0	0.0	
Empty Containers (Haz Mat and Non-Haz mat)	1.0	1.0	
Waste Oil Filters	0.5	0.1	70lbs/mo*15=1050lbs=0.525 tons; 20lbs/mo*12=240=0.12 tons
Subtotal - Non-Hazardous (tons)	**583.5**	**5.1**	
Hazardous Waste			**From Table 3.13-2 Hazardous Wastes Generated During Construction and Table 3.13-3 Hazardous Wastes Generated During Operations**
SCR and CO catalysts	100.0	see comment	20- 30 tons every 3-5 yrs
Spent Welding Materials	0.5	0.0	70 lbs/mo*15mo=1050lbs=0.525 tons
Oil Sorbent (Excluding Lube Oil Flushes)	0.5	0.2	Construction estimate includes rags and sorbent. 450 lb/yr=0.225 tons
Oily Rags	see above	0.1	195 lb/yr = 0.0975
Spent Lead Acid Batteries	0.1	0.1	25 lbs per battery standard used to determine total tonage. 4 batteries per year=100lbs=0.05tons
Spent Alkaline Batteries	0.1	0.0	8 per month*15mo=120lbs=0.06tons 40lbs/y=0.02
Flourescent, Mercury Vapor Lamps	0.0	0.0	65 lbs=0.0325 tons 40lbs/y=0.02
Subtotal - Hazardous Waste	**101.2**	**0.4**	
TOTAL - ALL WASTE (tons)	**684.7**	**5.5**	
TOTAL - ALL WASTE (cu yds)	**456.5**	**3.7**	**1.5 tons/ cubic yard conversion factor**