

DOCKETED

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CALIFORNIA ENERGY COMMISSION

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**NOTICE OF DETERMINATION
AND
STAFF'S ANALYSIS FOR THE
PETITION TO MODIFY THE PROJECT DESCRIPTION
FOR THE LODI ENERGY CENTER PROJECT
(08-AFC-10C)**

On April 1, 2014, Northern California Power Agency (NCPA) filed a petition with the California Energy Commission (Energy Commission) requesting to modify the Final Decision for the Lodi Energy Center (LEC). The combined-cycle, natural gas-fired, electricity-generating, 296-megawatt facility was certified by the Energy Commission in its decision on April 21, 2010, and became operational on November 27, 2012. The facility is located in the city of Lodi (City), San Joaquin County, California.

DESCRIPTION OF PROPOSED MODIFICATION

The facility owner's Petition to Amend proposed to address a wastewater discharge permitting issue associated with the wastewater underground injection wells and discharge process. When the LEC was licensed, all wastewater generated by the project would be discharged to its own, new injection wells, with no direct connection to the City's White Slough Water Pollution Control Facility (WPCF). In 2009, the U.S. Environmental Protection Agency (U.S.EPA) approved three injection wells for both the LEC facility and the adjacent Steam Injected Gas Turbine Project #2 (STIG) power plant that was commissioned in 1995. Furthermore, the U.S.EPA approved the discharge of wastewater from either power plant to any of the three injection wells. STIG has an approved wastewater discharge permit to the City's WPCF. To date, LEC has constructed one new well for use (LEC-1), with the third well (LEC-2) "on reserve." During construction of the LEC project, a cross-connect between the LEC wastewater tank and the STIG wastewater tank was established. LEC's connection to the STIG was for emergency use of the STIG injection well, and the connection by extension to WPCF was unintentional.

This cross-connection was not originally discussed in the Energy Commission license. With this cross-connection, there exists a possibility for the STIG waste stream to comingle with LEC's waste stream, whereby some LEC water might make its way back to the city's WPCF even though all wastewater is intended for the injection wells.

To address this issue, this petition was submitted at the request of Energy Commission staff. The petition does not request any equipment modifications or changes to the conditions of certification for the LEC. The purpose of this petition is to verify whether LEC's approved backup method of process wastewater disposal, which could result in comingling with STIG process wastewater and subsequent disposal to the White Slough WPCF, would require new or modified conditions of certification.

The Energy Commission's webpage for this facility, <http://www.energy.ca.gov/sitingcases/lodi/>, has a link to the amendment petition on the right

side of the webpage in the box labeled "Compliance Proceeding." Click on the "Documents for this Proceeding (Docket Log)" option.

ENERGY COMMISSION STAFF REVIEW AND DETERMINATION

Energy Commission technical staff reviewed the petition for potential environmental effects and consistency with applicable laws, ordinances, regulations, and standards (LORS). Staff has determined that the technical or environmental areas of Air Quality, Alternatives, Biological Resources, Cultural Resources, Facility Design, Geological Hazards and Resources, Hazardous Materials Management, Land Use, Noise and Vibration, Paleontological Resources, Public Health, Socioeconomics, Traffic and Transportation, Transmission Line Safety and Nuisance, Transmission System Engineering, Visual Resources, Waste Management, and Worker Safety and Fire Protection are not affected by the proposed changes, and no revisions or new conditions of certification are needed to ensure the project remains in compliance with all applicable LORS and existing conditions of certification for these areas.

Staff determined, however, that the technical or environmental area of Soil and Water Resources would be affected by the proposed project changes. However no proposed modifications to the existing conditions of certification are required. The Staff Analysis of Soil and Water Resources is attached to this notice.

Staff’s conclusions for each technical or environmental area are summarized in the following table.

Summary of Staff Responses to Petition

TECHNICAL/ENVIRONMENTAL AREAS REVIEWED	STAFF RESPONSE			Revised Conditions of Certification Recommended
	Technical Area Not Affected	No Significant Environmental Impact*	Process As Amendment	
Air Quality	X			No
Alternatives				No
Biological Resources	X			No
Cultural Resources	X			No
Efficiency				No
Facility Design	X			No
Geological & Paleontological Resources	X			No
Hazardous Materials Management	X			No
Land Use	X			No
Noise & Vibration	X			No
Public Health	X			No
Socioeconomics	X			No
Soil & Water Resources		X		No
Traffic & Transportation	X			No
Transmission Line Safety & Nuisance	X			No
Transmission System Engineering	X			No
Visual Resources	X			No
Waste Management	X			No
Worker Safety & Fire Protection	X			No

*There is no possibility that the proposed modifications would have a significant effect on the environment, and the modifications would not result in a change in or deletion of a condition adopted by the Commission in the Final Decision, or make changes that would cause project noncompliance with any applicable laws, ordinances, regulations, or standards (20 Cal. Code Regs., § 1769 (a)(2)).

Section 1769(a)(2) of Title 20, California Code of Regulations, states, “(w)here staff determines that there is no possibility that the modifications may have a significant effect on the environment, and if the modifications will not result in a change or deletion of a condition adopted by the commission in the final decision or make changes that would cause the project not to comply with any applicable laws, ordinances, regulations, or standards, no commission approval is required....”

Pursuant to that section, Energy Commission staff has determined for this petition that approval by the full Commission is not required and the proposed modifications meet the criteria for approval at the staff level because:

- The modification[s] will not have any significant effect on the environment;
- Existing conditions of certification are sufficient to cover the proposed modification[s] without changes to, or deletions of, any conditions of certification; and
- The project as modified will maintain full compliance with applicable LORS.

This Notice of Determination has been mailed to the Commission's facility mail list of interested parties and property owners adjacent to the facility site. It has also been e-mailed to the facility listserv. The listserv is an automated Energy Commission e-mail system by which information about this facility is e-mailed to parties who have subscribed. To subscribe, go to the Commission's webpage for this facility, cited above, scroll down the right side of the project's webpage to the box labeled "Subscribe," and provide the requested contact information.

Any person may file an objection to staff's determination within 14 days of the date of this Notice on the grounds that the project modification does not meet the criteria set forth in section 1769(a)(2). Absent any relevant objections, the amendment petition will be approved 14 days after this Notice is docketed. To use the Energy Commission's electronic commenting feature to object to staff's determination, go to the Energy Commission's webpage for this facility, cited above, click on the "Submit e-Comment" link, and follow the instructions in the on-line form. Be sure to include the facility name in your comments. Once submitted, the Energy Commission Dockets Unit reviews and approves your comments, and you will receive an e-mail with a link to them.

Written comments may also be mailed or hand-delivered to:

California Energy Commission
Dockets Unit, MS-4
Docket No. 08-AFC-10C
1516 Ninth Street
Sacramento, CA 95814-5512

All comments and materials filed with and approved by the Dockets Unit will be added to the facility Docket Log and be publicly accessible on the Energy Commission's webpage for the facility.

If you have questions about this Notice, please contact Christine Stora, Compliance Project Manager, at (916) 654-4745, or by fax to (916) 654-3882, or via e-mail at christine.stora@energy.ca.gov.

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For information on participating in the Energy Commission's review of the petition, please call the Public Adviser at (800) 822-6228 (toll-free in California) or send your e-mail to publicadviser@energy.ca.gov. News media inquiries should be directed to the Energy Commission Media Office at (916) 654-4989, or by e-mail to mediaoffice@energy.ca.gov.

Date: _____

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LODI ENERGY CENTER (08-AFC-10C)
Project Modification
SOIL AND WATER RESOURCES
Marylou Taylor, P.E.

INTRODUCTION

The Lodi Energy Center (LEC) project owner, Northern California Power Agency (NCPA), has filed a Petition to Amend to address a minor wastewater discharge permitting issue associated with the wastewater underground injection wells and discharge process associated with the facility. The purpose of this analysis is to determine whether LEC's backup method of process wastewater disposal would require new or modified conditions of certification.

BACKGROUND

The NCPA site in Lodi consists of two separate power plant projects: STIG¹ and LEC. STIG was commissioned in 1995 and has two options for discharging its process wastewater. A permit from the US Environmental Protection Agency (EPA) allows discharge of process wastewater into an onsite injection well, and a permit from the City of Lodi (City) allows discharge up to 80 percent of STIG's annual process wastewater to the City's White Slough Water Pollution Control Facility (WPCF).

During the licensing process of LEC by the California Energy Commission, the Application for Certification stated that all wastewater generated by the LEC project would be discharged to its own, new injection wells. LEC would use the existing STIG injection well for backup. The Final Commission Decision (Final Decision) was issued in 2010 approving LEC, including the proposed use of injection wells as the main and backup methods to dispose process wastewater. The Commission found that deep well injection, permitted by the EPA, will not cause an adverse impact to soil or water resources if the project owner complied with Condition of Certification **SOIL&WATER-9**. This condition required the project owner obtain a Class I Nonhazardous UIC (underground injection control) Permit² issued by the EPA prior to project construction.

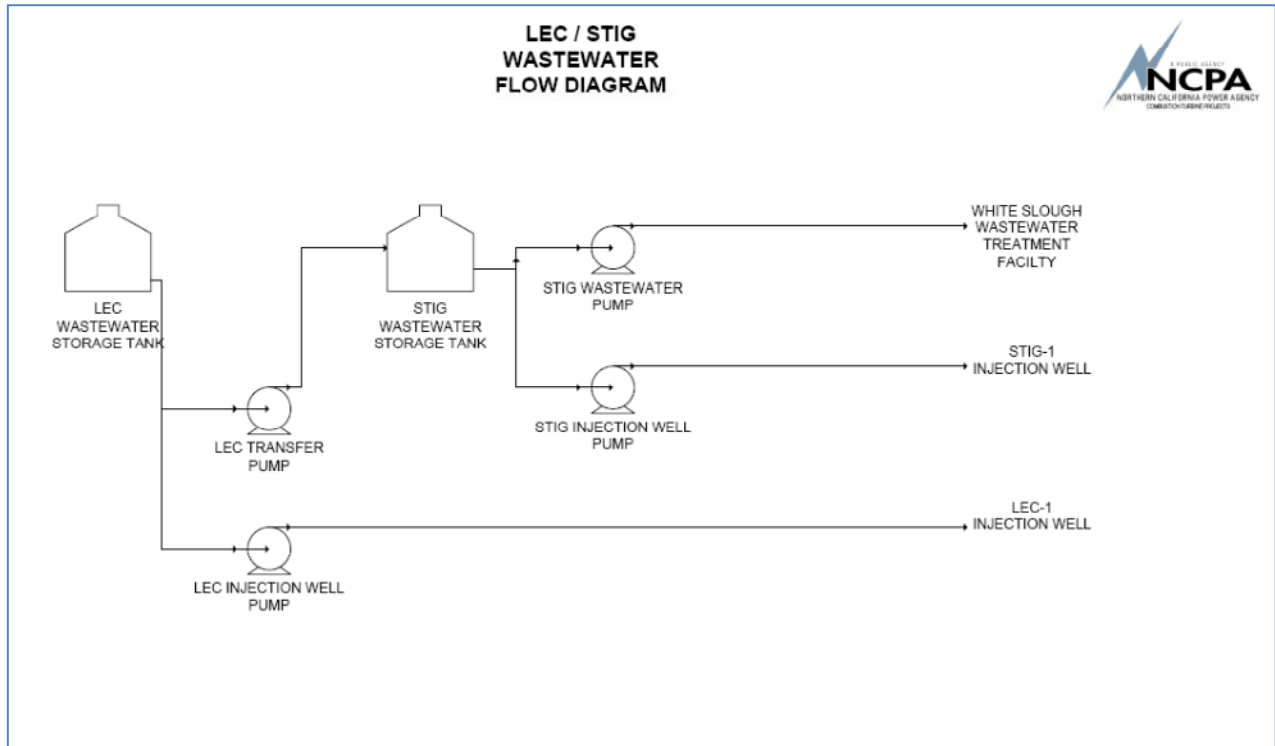
The UIC permitting process with EPA for the LEC injection wells occurred at the same time renewal was required for the STIG injection well, and NCPA chose to submit an application to EPA for a joint permit which included both power plants. As a result, in October 2009 EPA approved three injection wells at the NCPA site³: one existing well (labeled STIG-1), and two additional wells (LEC-1 and LEC-2). The UIC permit approved the discharge of water from either power plant to any of the three injections wells. NCPA constructed only one new

¹ "STIG" refers to the NCPA Combustion Turbine Project #2, which is a 49 megawatt Steam Injected Gas Turbine (STIG) plant and is not subject to Energy Commission jurisdiction.

² The EPA's UIC program is a comprehensive regulatory program for the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal. A Class I Nonhazardous UIC Permit allows LEC to inject its nonhazardous industrial wastewater into isolated formations beneath the lowermost underground source of drinking water.

³ [Permit No. CA 10910003](#). Minor modifications were approved by EPA in [April 2011](#) and [May 2013](#) which incorporate minor clarifications and revise permit requirements based on updated project information.

well (LEC-1) for use, and may construct well LEC-2 in the future as a back up well to both STIG-1 and LEC-1 if the capacity of the two other wells does not enable both plants to be fully-functional. During the construction of LEC, a cross-connect between the LEC wastewater tank and the STIG wastewater tank was established (see Wastewater Flow Diagram below). This cross-connect would allow for flexibility if one of the wastewater tanks or injection wells were to be temporarily out-of-service. While not shown on the flow diagram, wastewater can flow from the STIG tank through the LEC transfer pump to the LEC-1 injection well. The cross-connection could also result in an unanticipated connection between LEC and the WPCF via the STIG storage tank.



In July 2013, the City’s WPCF underwent an audit to verify compliance with the EPA’s National Pretreatment Program⁴. One finding in this audit was that LEC’s unintentional, but potential discharge to the WPCF is subject to categorical pretreatment standards, which prevents the introduction of pollutants that could cause a violation of WPCF’s National Pollution Discharge Elimination System (NPDES) permit. Although NCPA’s intent is to discharge the full volume of wastewater produced by LEC into the underground injection wells, there is a possibility that some of LEC wastewater could enter into the WPCF. This would occur if the LEC-1 injection well is temporarily out-of-service and the STIG-1 injection well is needed to discharge LEC wastewater. The STIG wastewater tank would be used to hold LEC wastewater prior to disposal into the STIG-1 injection well. The mixture of wastewater from both power plants could result in the WPCF receiving constituents found in LEC wastewater. In order to ensure that the WPCF is aware of the water quality and

⁴ The National Pretreatment Program, a component of the NPDES Permit Program, provides the regulatory basis to address indirect discharges from industrial and commercial dischargers to publicly owned treatment works (POTWs). These nondomestic dischargers must pretreat or otherwise control pollutants in their wastewater to meet specific effluent quality standards before discharging it to a POTW.

volumes that might be associated with this stream, EPA is requiring the City to issue a permit to LEC prior to accepting any discharge that may contain LEC wastewater.

ANALYSIS

The Final Decision determined that disposal of LEC process wastewater via deep well injection, permitted by the EPA, will not cause adverse impacts to soil or water resources. In compliance with **SOIL&WATER-9**, NCPA provided the CPM with evidence of a Class I Nonhazardous UIC Permit for the two new LEC injection wells issued by EPA. To date, NCPA constructed only one new injection well for use (LEC-1), holding the second new injection well (LEC-2) “on reserve.” Staff analyzed two scenarios (below) that could result from use of the cross-connect between the LEC wastewater tank and the STIG wastewater tank and subsequent comingling of both streams.

1. Comingled disposal to LEC-1, LEC-2, or STIG-1

As discussed above, the Class I Nonhazardous UIC permit approved discharge of water from either power plant to any of the three injection wells. Specific permit requirements allow injection of approved fluids (namely, nonhazardous⁵ process wastewater from gas turbine power plants at NCPA facilities) and limit the maximum pressure and rate of injection. Because the UIC permit includes use of the existing STIG-1 injection well, staff believes that the permit addresses potential impacts of the STIG-1 injection well as temporary backup of LEC. Additionally, the LEC injection well(s) can function as temporary backup for STIG wastewater disposal. Therefore, the cross-connect between the two wastewater tanks does not require new or modified conditions of certification for comingled LEC-STIG wastewater discharge to any of the three approved injection wells.

2. Comingled disposal to WPCF

During LEC’s certification process, staff did not analyze the potential impacts of LEC process wastewater discharge to WPCF. No direct connection to the WPCF was proposed because all wastewater generated by LEC was intended for discharge to injection wells. However, the potential comingling of LEC-STIG wastewater streams provides an indirect connection between LEC and WPCF, which can result in an increase of volume discharge and water quality issues not covered by the City’s Wastewater Discharge Permit issued to STIG.

Because LEC process wastewater is planned for disposal into injection wells only, the full volume of LEC wastewater entering the STIG wastewater tank results in the equal volume of wastewater disposed into the STIG-1 injection well when used as emergency backup. For this reason, staff believes the potential comingling of LEC-STIG wastewater discharge would only minimally increase volume of discharge from the STIG wastewater tank to WPCF, if at all.

The potential comingling of LEC-STIG wastewater streams could result in the WPCF receiving constituents found in LEC wastewater. Although both STIG and LEC receive tertiary-treated water from WPCF for generating electricity, LEC is a combined-cycle facility with different process requirements compared to STIG. For example, LEC may add different types or amounts of chemicals to its circulating water to control scaling and biofouling of the

⁵ An Injectate Hazardous Waste Determination shall demonstrate that the injectate does not meet the definition of hazardous waste as defined in 40 CFR §261.

cooling tower and to control corrosion of the circulating water piping and intercooler. LEC's UIC permit ensures safe disposal of process wastewater into injection wells, but discharge flows to WPCF are treated for reuse.

The City's Wastewater Discharge Permit would specify effluent limitations, monitoring requirements, and other conditions to authorize discharge of industrial wastewater to WPCF. Sampling analysis provided by NCPA shows that the LEC discharge and the STIG discharge are comparable in composition. The combined stream of both discharges is anticipated to be well below the WPCF requirements. Staff believes that the Wastewater Discharge Permit, issued to LEC by the City, would mitigate potential water quality impacts for this potential waste stream. Furthermore, staff believes issuance of this permit does not require new or modified conditions of certification because it is a requirement for the WPCF to comply with its EPA NPDES permit, which is outside Energy Commission jurisdiction.

CONCLUSIONS AND RECOMMENDATIONS

Staff believes that LEC's backup method of process wastewater disposal (a cross-connect to the STIG wastewater tank and subsequent Wastewater Discharge Permit issued by the City) would not result in a change or deletion of a condition adopted by the commission in the Final Decision or make changes that would cause the project not to comply with any applicable laws, ordinances, regulations, or standards. Furthermore, the LEC injection well(s) can function as temporary backup for STIG wastewater disposal.

Staff's recommendation is to process this as a staff approved project modification.

REFERENCES

- CEC 2010—California Energy Commission ([tn: 56447](#)), Final Commission Decision for the Lodi Energy Center (08-AFC-10), April 28, 2010.
- CH2M 2014a – CH2M Hill ([tn: 201951](#)), Wastewater Discharge Permitting Request Amendment #4, April 1, 2014.
- CH2M 2014b – CH2M Hill ([tn: 202663](#)), Lodi Energy Center's Responses to Staff Query 1 – Water Resources, July 2, 2014.
- NCPA 2008—Northern California Power Agency ([tn: 47973](#)), Submittal of AFC for the Lodi Energy Center, September 10, 2008.
- USEPA 2009 — US Environmental Protection Agency, Pacific Southwest, Region 9. Final Permit: Class I Nonhazardous Waste Injection Wells (Permit No. CA 1091003), October 16, 2009.