

# Memorandum

**Date:** January 14, 2002  
**Telephone:** (916) 651-8839  
**File:** Inland Empire Energy Center

**To:** Robert Pernell, Presiding Member  
Michal C. Moore, Associate Member

**From:** California Energy Commission      James A. Bartridge,  
1516 Ninth Street                              Project Manager  
Sacramento, CA 95814-5512

**Subject:** **INLAND EMPIRE ENERGY CENTER (01-AFC-17) ISSUE IDENTIFICATION REPORT**

Attached is the staff's Issue Identification Report. This report serves as a preliminary scoping document as it identifies the issues the Energy Commission staff believe will require careful attention and consideration. Energy Commission staff will present the Issues Report at a scheduled Information Hearing on January 30, 2002, at 3:30 p.m. at the Eastern Municipal Water District, 2270 Trumble Road, Perris, California, 92572.

## Attachments

cc: Docket (01-AFC-17)  
Michael Hatfield, Calpine  
Andrea Grenier, Argonaut Consulting

Proof of Service List



# **ISSUE IDENTIFICATION REPORT**

## **INLAND EMPIRE ENERGY CENTER PROJECT**

**(01-AFC-17)**

**CALIFORNIA ENERGY COMMISSION**

**Systems Assessment and Facilities Siting Division**



# TABLE OF CONTENTS

<b>PURPOSE OF REPORT</b> .....	<b>1</b>
<b>PROJECT DESCRIPTION</b> .....	<b>1</b>
<b>POTENTIAL MAJOR ISSUES</b> .....	<b>2</b>
AIR QUALITY .....	3
LAND USE .....	4
POWER PLANT EFFICIENCY .....	4
SOCIOECONOMICS.....	5
WATER RESOURCES.....	5
<b>SCHEDULING ISSUES</b> .....	<b>6</b>
<b>ENERGY COMMISSION STAFF'S PROPOSED SCHEDULE</b> .....	<b>7</b>



## **PURPOSE OF REPORT**

---

This report has been prepared by the California Energy Commission staff to inform the Committee and all interested parties of the potential issues that have been identified in the case thus far. Issues are identified as a result of discussions with federal, state, and local agencies, and our review of the Inland Empire Energy Center Project Application for Certification (AFC), Docket Number 01-AFC-17. This Issue Identification Report contains a project description, summary of potentially significant environmental issues, and a discussion of the proposed project schedule. The staff will address the status of potential issues and progress towards their resolution in periodic status reports to the Committee.

## **PROJECT DESCRIPTION**

---

Calpine proposes to construct and operate an energy generating facility known as the Inland Empire Energy Center (IEEC) in the County of Riverside. The facility would be a natural gas-fired, combined cycle plant with the nominal gross generating capacity of 670 megawatts (MW). The proposed electric generating facility would be located on approximately 46-acres near Romoland, within Riverside County. The project site is bordered by McLaughlin Road to the south, San Jacinto Road to the east, Antelope Road to the west, and the Burlington Northern Santa Fe railway to the north.

The proposed facility would include two GE PG 7251(FB) combustion turbine-generators (CTGs) with two heat recovery steam generators (HRSG), a single steam turbine-generator (STG), and a 14-cell mechanical draft cooling tower. Each HRSG unit would have 195 foot exhaust stacks and would be equipped with duct burners for additional steam production when increased electric power generation is necessary.

Natural gas would be supplied from a 0.9 mile pipeline that would be constructed to deliver fuel from an existing Sempra Energy gas transmission pipeline that runs along Menifee Road (located approximately one mile east of the project site). Delivery of gas from this source would require the construction and operation of a compressor station to maintain gas pressure in the Sempra pipeline south of the project site during periods of power plant operation.

The combined cycle units are proposed to use a maximum of 4.5 million gallons of water per day (gpd) or 5,000 acre feet per year. During the first five years of operation, the cooling and process water used at IEEC would consist of raw water (approximately 20 percent) supplied by Metropolitan Water District (MWD) and recycled water (approximately 80 percent) supplied by Eastern Municipal Water District (EMWD). After five years, cooling and process water used at IEEC would consist of 100 percent recycled water supplied by EMWD. Potable water for drinking and other domestic uses would also be supplied by EMWD.

The IEEC would interconnect with the electrical grid from a switchyard built on the plant site, that connects to the SCE Valley Substation located approximately 0.9 miles east of the project site. The proposed transmission line is a new 0.9 mile 500-kilovolt (kV)

overhead line would utilize new single and double-circuit steel lattice towers to connect to the existing substation.

To control emissions of air pollutants, the IEEC would have gas turbines with dry, low nitrogen oxides (NO<sub>x</sub>) burners. The units would use the best available control technology (BACT) including selective catalytic reduction (SCR) for control of NO<sub>x</sub>. The SCR system consists of a reduction catalyst and an aqueous ammonia injection system. In addition, the IEEC is required by the South Coast Air Quality Management District to provide emission reduction credits for NO<sub>x</sub> and precursor organic compounds (POC).

Calpine proposes construction to begin on the project in the spring of year 2003 and take approximately 24 months. Commercial operation of IEEC is expected to begin by the summer of year 2005. The construction force necessary for IEEC is expected to peak at 490 workers. Once the new units are on line, the operational staff required is expected to be about 25 employees. The capital cost of the RCEC project is expected to be between \$300 and \$400 million.

## **POTENTIAL MAJOR ISSUES**

---

This portion of the report contains a discussion of the potential issues the Energy Commission staff has identified to date. This report may not include all the significant issues that may arise during the case, as discovery is not yet complete, and other parties have not had an opportunity to identify their concerns. The identification of the potential issues contained in this report was based on our judgement of whether any of the following circumstances will occur:

- Significant impacts may result from the project which may be difficult to mitigate;
- The project as proposed may not comply with applicable laws, ordinances, regulations or standards (LORS);
- Conflicts may arise between the parties about the appropriate findings or conditions of certification for the Commission decision that could result in a delay to the schedule.

The following table lists all the subject areas evaluated and notes those areas where the potential significant issues have been identified and where data requests have been requested. Even though an area is identified as having no potential issues, it does not mean that an issue will not arise related to the subject area.

Potential Issue	Data Req	Subject Area	Potential Issue	Data Req	Subject Area
Yes	Yes	Air Quality	No	Yes	Public Health
No	Yes	Biological Resources	Yes	Yes	Socioeconomics
No	Yes	Cultural Resources	No	No	Traffic & Transportation
Yes	Yes	Reliability/Efficiency	No	No	Transmission Safety
No	No	Facility Design	No	No	Transmission Sys. Eng.
No	Yes	Geological/Paleo Resources	No	Yes	Visual Resources
No	Yes	Hazardous Materials	No	No	Waste Management
Yes	Yes	Land Use	Yes	Yes	Water & Soils
No	Yes	Noise	No	No	Worker safety

## **AIR QUALITY**

There are three potentially critical air quality issues that may affect the timing and outcome of the licensing process for the Inland Empire Energy Center. They include: 1) potentially significant construction impacts; 2) achieving requirements for the best available control technology; and, 3) acquisition of emission reduction credits (or offsets).

### ***CONSTRUCTION IMPACTS***

The analysis provided in the AFC indicates that there are potentially significant air quality impacts from construction of this project. The impact analysis predicts that the construction of the project will potentially cause or worsen existing violations of ambient air quality standards for PM<sub>10</sub> and NO<sub>2</sub>. This is a concern because of the proximity of residences and the Romoland Elementary School. Staff has concerns that the emissions and impacts during construction have not been adequately estimated and some model inputs appear to be erroneous. Staff will request that the applicant revise its analysis to correct errors and omissions.

### ***BEST AVAILABLE CONTROL TECHNOLOGY***

The U.S. Environmental Protection Agency recently identified new Best Available Control Technology (BACT) levels for natural gas combustion turbines. Staff anticipates further information from the applicant regarding the reduced levels, and will request additional information to verify that the project will comply.

### ***EMISSIONS OFFSETS***

The applicant proposes to mitigate increased emissions of air contaminants and comply with laws, ordinances, regulations, and standards (LORS) by securing emission reduction credits (ERC) from existing nearby sources. A complete analysis of proposed credits for required PM<sub>10</sub> offsets has not yet been presented by the applicant. The South Coast Air Quality Management District and the Energy Commission staff must agree on the quantification, permanence, and enforceability of the credits proposed by

the applicant. The limited availability of PM<sub>10</sub> credits makes project emissions difficult to mitigate.

## **LAND USE**

The IEEC project site is currently zoned for heavy industrial use, although power plants are not specifically listed as permitted or conditional uses within the Riverside County Zoning Ordinance. However, power plants are similar in nature to other presently listed heavy industrial uses allowed within the zone. The proposed project's heat recovery steam generator (HRSG) stacks (195 feet) would also exceed the County's height restrictions of 105 feet. Staff is consulting with County staff to obtain their input as to whether a land use consistency finding and a height variance for the power plant and stacks are appropriate, as well any conditions the County would place upon the project. The County has indicated its general support for the project.

In addition, the proposed IEEC project site is located approximately 1,250 feet from Romoland Elementary School. The Romoland School District has indicated their concerns regarding the proximity of the proposed plant to the existing elementary school, potential health and safety impacts to students, and concerns that the proposed IEEC project would restrict the future siting of additional schools within the immediate area. Staff has met with representatives of the District regarding these issues and will address them within the context of the Staff Assessment.

## **POWER PLANT EFFICIENCY**

Combined cycle power plants, such as the Inland Empire Energy Center, typically represent the most fuel-efficient means to convert a fossil fuel into electricity. The project, however, proposes to employ duct burners much larger than is customary, resulting in a power plant that is much less efficient than might be expected.

The IEEC, a two-on-one combined cycle power plant (two gas turbine generators and one steam turbine generator) will generate 538 MW without duct burners, and 670 MW nominal with duct burners operating. Typical nominal power outputs for two-on-one combined cycle power plants are in the range of 600 MW with duct burners operating. The proposed plant uses duct burners to significantly increase maximum power output.

While the efficiency of a combined cycle power plant commonly ranges around 56 percent, that of a duct burner is closer to 40 percent, equivalent to a simple cycle peaking power plant. By relying on duct burners for up to 142 MW of output, the Applicant is significantly reducing the overall efficiency of the project. At maximum output, it is the equivalent of a 538 MW combined cycle power plant and three or four 40 MW simple cycle peaker units. Staff has issued a Data Request to obtain additional information regarding the reliability and efficiency performance for the project and will address the issue within the context of the Staff Assessment.

## **SOCIOECONOMICS**

Based on Census 2000 demographic data, staff has determined that there is a minority population of greater than 50 percent within a six-mile radius of the proposed Inland

Empire Energy Center site. Therefore, staff in several technical areas will conduct a focused environmental justice analysis to determine if the project would result in significant impacts on the minority population, to identify appropriate local mitigation, and to determine if there are unmitigated significant impacts that disproportionately affect the minority population.

## **WATER RESOURCES**

### ***WATER SUPPLY***

The Inland Empire Energy Center (IEEC) proposes to use Eastern Municipal Water District (EMWD) reclaimed water, supplemented until 2010 with imported fresh surface water, for an average annual demand of 3,814 AF/Yr and a peak annual demand of 5,604 AF/Yr. According to updated projections provided by the Applicant in its December 4, 2001 Data Adequacy Response, it is estimated that reclaimed water supply will be sufficient to meet total IEEC demand on an average annual basis around 2010, although the reclaimed water supply is dependent on projected population growth, and any shortfalls are proposed to be met with imported fresh surface water. In addition to the expected reliance on fresh water between 2004 – 2010, the Applicant's proposed use of reclaimed water has a secondary effect of reducing groundwater recharge and supply for EMWD's planned brackish water desalination project, resulting in comparable increases in fresh water supply to the area. Significant long-term reductions in net fresh water demands on EMWD's system could potentially be achieved with use of an alternative cooling process, alternative supplies and/or reclaiming proposed discharges of wastewater. SWRCB Resolution 75-58 states that use of fresh inland waters for power plant cooling is only warranted when the use of other water supplies or other methods of cooling would be environmentally undesirable or economically unsound. Although the Applicant proposes to use reclaimed water to the extent it is available, the effects of such use may cause more reliance on ground water or fresh water by other EMWD customers. Staff will analyze the use of alternative cooling processes, sources of supply and options for further reclaiming proposed discharges of wastewater. In addition, staff will analyze the adequacy of onsite storage of recycled water to avoid unnecessary demands of fresh water for make-up of short-term fluctuations, or temporary upsets in recycled water supply.

### ***STORMWATER***

Design criteria for the proposed storm water system has not been clearly defined, nor has data been provided to demonstrate that project discharges of storm water will not exceed pre-developed discharges under a range of storm events. In addition, it is not clear if the proposed discharge of storm water will have any effects on adjacent wetlands to the IEEC site. Staff will analyze the consistency of the proposed storm water system with design criteria specified by the appropriate agencies, as well as consider any effects to adjacent wetlands.

## **SCHEDULING ISSUES**

---

Staff has begun its analyses of the project and is currently in the discovery phase. Staff is collecting information through data requests, workshops, and site visits, which will be utilized in its assessment of environmental and engineering aspects of the applicant's proposal. Staff's initial findings regarding the major issues discussed above, as well as other environmental and engineering findings regarding the project, will be presented in the Preliminary Staff Assessment (PSA) expected to be filed on June 6, 2002. After filing the PSA, staff will conduct additional public workshops to discuss our findings, recommendations and proposed conditions of certification. Incorporating the input and information received during these workshops, staff will present final conclusions and recommendations in the Final Staff Assessment (FSA) expected to be filed on July 17, 2002.

Following is staff's proposed schedule for key events of the project. The ability of staff to be expeditious in meeting this schedule will depend on factors which include the applicant's timely response to staff's data requests, the filing of Determination of Compliance from the air district, and approval from the Independent System Operator (Cal-IS0).

## STAFF'S PROPOSED SCHEDULE FOR INLAND EMPIRE ENERGY CENTER

DATE	DAYS	EVENT
8/17/01	-	Inland Empire Energy Center (IEEC) AFC filed (01-AFC-17)
12/19/01	0	Energy Commission Deems AFC Complete
1/10/02	22	Staff files Data Requests
1/11/02	23	Staff files Issue Identification Report
1/30/02	42	Information Hearing & Site Visit
2/13/02	56	Data Responses Due From Applicant
2/22/02	65	Data Response and Issue Workshop
4/18/02*	120	South Coast Air Quality Management District (SCAQMD) files Preliminary Determination Of Compliance (PDOC)
5/17/02	149	Staff files Staff Assessment (PSA)
6/7/02	170	Staff holds PSA workshop(s)
6/17/02*	180	SCAQMD files Final DOC
7/17/02	211	Final Staff Assessment
7/24/02	218	Committee Prehearing Conference
7/31- 8/16/02	225- 241	Evidentiary Hearings
10/21/02	305	Committee issues Presiding Member's Proposed Decision
12/4/02	349	Committee issues Presiding Member's Proposed Decision
12/18/02	363	Commission Adopts Decision

\*Anticipated filing dates only