



October 5, 2004

**BY ELECTRONIC TRANSMISSION**

The Honorable Magalie Roman Salas  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Re: California Independent System Operator Corporation  
**Docket No. EL00-95 et al. and EL00-98 et al.**

Dear Secretary Salas:

Enclosed for electronic filing please find Answer of the California Independent System Operator Corporation to Indicated Generators' Motion to Reject the CAISO's Fuel Cost Submission Template, and the City of Anaheim's Answer in Support in the above-referenced docket.

Thank you for your assistance in this matter.

Very truly yours,

**/s/ Gene L. Waas**

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Gene L. Waas

Counsel for the California Independent  
System Operator Corporation

Enclosures

cc: All parties of record

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

<b>San Diego Gas &amp; Electric Company,</b>	)	
<b>Complainant,</b>	)	
	)	
<b>v.</b>	)	<b>Docket Nos. EL00-95-098</b>
	)	<b>EL00-95-102</b>
<b>Sellers of Energy and Ancillary Services</b>	)	
<b>Into Markets Operated by the California</b>	)	
<b>Independent System Operator and the</b>	)	
<b>California Power Exchange,</b>	)	
<b>Respondents.</b>	)	
	)	
<b>Investigation of Practices of the California</b>	)	<b>Docket Nos. EL00-98-086</b>
<b>Independent System Operator and the</b>	)	<b>EL00-98-090</b>
<b>California Power Exchange</b>	)	

**ANSWER OF THE CALIFORNIA INDEPENDENT SYSTEM  
OPERATOR CORPORATION (“CAISO”) TO INDICATED GENERATORS’  
MOTION TO REJECT THE CAISO’S FUEL  
COST SUBMISSION TEMPLATE AND THE CITY OF ANAHEIM’S ANSWER IN  
SUPPORT**

**I. INTRODUCTION AND SUMMARY**

Pursuant to Rule 213 of the Commission’s Rules of Practice and Procedure, 18 C.F. R. §385.213 (2001), the California Independent System Operator Corporation <sup>1</sup> hereby files its answer to the motions of Indicated Generators<sup>2</sup> to reject the CAISO’s template for fuel cost submissions, filed on

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<sup>1</sup> Capitalized terms not otherwise defined herein shall have the meaning set forth in the Master Definitions Supplement, Appendix A to the CAISO Tariff.

September 28, 2004 (“Indicated Generators’ Motion”) and the City of Anaheim’s supporting answer (which was in substance a motion), filed on September 30, 2004 (“Anaheim Motion”). This answer is being filed within the shortened time for answers established by the Commission by notice dated September 30, 2004<sup>3</sup>.

On September 13, 2004, the CAISO posted on its website, in accordance with the Commission’s order of September 2, 2004, titled Order on Auditor Selection and Request for Waiver and Clarifying Audit Issues, 108 FERC ¶¶ 61,219 (2004), its view of the needed format for the submission of fuel cost information to the CAISO (herein referred to as the CAISO’s “fuel cost allowance format”)<sup>4</sup>. On the same date, the CAISO gave notice to the CAISO Market that such a posting had been made and the location of the information on its website.

The intent of the CAISO in this posting was to assist the Commission and Market Participants in the efficient determination of fuel cost allowances and the proper submission of those allowances to the CAISO for processing. Although Indicated Generators’ Motion includes generalized contentions that the CAISO’s fuel cost allowance format includes “methodological assumptions and formulas” that are “contrary to the Commission’s Orders on FCA claims” (Indicated Generators’ Motion at 4), the filing identifies only two areas in which the CAISO’s

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<sup>2</sup> The full title of the motion was “Indicated Generators’ Emergency Motion to Reject The CAISO’s Non-Complying Template, Motion for Extension of Time and Request for Expedited Consideration and Shortened Notice Period.” The Indicated Generators for the purpose of that motion were composed of Reliant and Mirant as well as various corporate affiliates.

<sup>3</sup> As noted, the Anaheim answer was in substance a motion, and therefore the ISO is entitled to respond. To the extent the Commission believes the ISO requires leave to Anaheim, the ISO requests such leave to respond, in order to address new issues raised by Anaheim and to complete the record in order to assist the Commission.

<sup>4</sup> The initial posting was made by the CAISO on September 13<sup>th</sup>. However, several minor corrections were made in the format of the posting and the information was reposted on September 14<sup>th</sup>. The initial posting was within the 10 day window of the Commission’s order.

view of the Commission's orders on fuel cost allowances conflicts with Indicated Generators' own view. They are, (1) the operating point used to calculate the heat rates, and (2) whether in calculating the fuel cost allowance the generator's fuel cost should be compared to the MMCP or to the fuel price index used to calculate the MMCP. The CAISO joins the Indicated Generators in requesting that the Commission clarify these two issues, and also requests that the Commission approve the CAISO's posted format with any required modifications, for use in fuel cost submissions.

## **II. ANSWER**

### **A. THE LEVEL OF DETAIL SPECIFIED BY THE CAISO IN ITS POSTING IS NECESSARY FOR TRANSACTION LEVEL CALCULATION OF FUEL COSTS**

Indicated Generators suggest that the amount of data that the CAISO has requested in its posting is in some manner excessive. Indicated Generators' Motion at 4. However, the data in the four tables provided by the CAISO (plus a fifth table for any sales in the PX Day-Of Market, which Market Participants have pointed out may be necessary), represent the minimum information that is required to make the appropriate fuel cost calculations on a transaction-by-transaction basis in each of the various markets in which energy was sold and purchased during the relevant period. As confirmed in the Commission's "Order Denying Rehearing, Clarifying Fuel Cost Allowance Issues, and Accepting in Part Compliance Filing," issued September 24, 2004 ("September 24 Order"), which was issued subsequent to the CAISO's posting, "mitigated sales in the PX were made on an hourly basis, and mitigated CAISO sales were made on a 10-minute

basis,” so “generators are required to calculate and demonstrate their fuel cost allowance claims using these same intervals.” September 24 Order at ¶85.

Thus, the format requested by the CAISO does not require the creation of any information by an entity requesting the fuel cost allowance beyond that which is necessary to comply with the Commission’s orders on the fuel cost allowance.<sup>5</sup> In fact, Indicated Generators have not identified any specific data in the CAISO’s template that they believe is unnecessary in order to complete the basic fuel cost allowance calculations. The CAISO has attempted to do everything it possibly could to assist the Commission during this proceeding, from using its settlement systems and manpower to conduct the market re-runs to offering assistance on the fuel cost allocation and fuel cost submission procedures. Indeed, the CAISO, as the market operator, occupies a special position in trying to rectify past wrongs in the California electricity markets. The CAISO wants all of its Market Participants to operate efficiently without any undue burden from these proceedings. With respect to fuel cost allowances, the CAISO simply seeks to ensure that adequate information is submitted to allow the required calculations to be completed and verified in a timely and accurate manner.

In addition, to the extent that Indicated Generators or the fuel cost auditor disagrees with any of the algorithms that have been included in the CAISO template, modifications to these formulas will not affect the size or the format of

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<sup>5</sup> The September 24 Order directs generators to submit their fuel cost allowance data to the CAISO on an hourly basis (with their CAISO sales in 10-minute intervals aggregated to an hourly level) (¶85). However, the September 24 Order required that calculations for CAISO sales must be made on a 10-minute basis; therefore, the 10-minute interval format suggested by the CAISO in its posting still corresponds to the level at which generators must calculate and demonstrate their fuel cost allowance claims.

the four tables.<sup>6</sup> In fact, the tables have been specifically designed so that only information that already has been developed or otherwise required to be developed must be provided; even equations modified from those proposed by the CAISO can be used. Thus, if all of the information that the CAISO has requested in the tables were provided, the auditor, FERC, the CAISO, or any other entity, would have the information necessary to recalculate the fuel cost allowance using the alternative interpretations of Commission directives put forth by Indicated Generators, or any other method.

The level of detail specified in the CAISO's posted fuel cost format is also designed to ensure that the CAISO has the data necessary to allocate these costs to buyers based on whatever method is ultimately approved by the Commission. As noted in the CAISO's response to comments on the CAISO's August 17, 2004 compliance filing, in which the CAISO provided its proposed methodology for allocating fuel cost allowance amounts (as required by the Commission's May 12, 2004 Order Addressing Fuel Cost Allowance Issues, 107 FERC ¶ 61,160 (2004) ("May 12 Fuel Cost Order")), "the CAISO's proposal for netting sales from purchases was premised on the understanding that fuel cost allowances for net suppliers would also be calculated by using generators' net spot market sales each hour, after accounting for any purchases of energy in the PX and CAISO spot markets during the same time interval." ("Motion for Leave To File Answer and Answer of the California Independent System Operator

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<sup>6</sup> It should be noted that during the CAISO's regular monthly call on re-run issues on Friday, September 24, 2004, several of the Market Participants suggested that they may need more tables than what was in the CAISO's posting in order to document energy sales made from "system resources" (i.e., imports to the CAISO system).

Corporation to Comments and Protest on Compliance Filing,” Docket No. EL00-98-096 (September 14, 2004) at 8) The CAISO’s response noted that an example provided by Dynegy and Williams in their comments “highlights the need to clarify how gas cost allowances are to be calculated when determining how to allocate these costs” *id.*, and provided examples illustrating equity issues involved in different approaches that the Commission might approve for both calculating fuel cost allowances for suppliers and allocating these costs to buyers. The Commission’s September 24 Order addressed the issue of the time interval to be used for allocating costs, but specifically deferred any decision on other allocation issues, such as whether allocation should be done based on net purchases or gross purchases, and whether the CAISO and PX spot markets should be treated separately or combined. September 24 Order at ¶¶84. Again, however, the level of detail specified in the CAISO’s posted fuel cost format is also designed to ensure that the CAISO has the data necessary to allocate these costs to buyers based on whatever method is ultimately approved by the Commission. For example, the format posted by the CAISO ensures that the data provided could be applied on either a net or gross basis, and for the CAISO and PX markets together or separately. Thus, the CAISO respectfully suggests that it is prudent to require submission of fuel cost allowance information in the manner proposed by the CAISO, to allow calculation of fuel cost allowances to proceed, pending resolution on cost allocation issues which ultimately impact how fuel cost allowance calculations should be performed.

Finally, the CAISO believes that requiring generators to follow the proposed format is necessary to lend consistency to the data that the auditor will review, to allow other parties a basis for raising any concerns in a timely manner, and to allow resolution of any disputes by the various deadlines specified in the September 24 Order. Thus, in the context of the overall process for review and approval of fuel cost allowance claims laid out in the September 24 Order, the CAISO believes that requiring fuel cost allowance claims to be submitted at the level of detail and in the standardized format posted by the CAISO will ultimately accelerate resolution of the fuel cost allowance issue, rather than delay this process, as suggested by the Indicated Generators and the affidavit of Ms. Sherri Toivonen on behalf of Ernst and Young. See Generators Motion at 9 and Toivonen Affidavit at 4-5 ¶¶e. Requiring fuel cost allowance claims to be submitted in the level of detail and in the standardized format proposed by the CAISO is particularly prudent in light of the Commission's decision in the September 24 Order to allow parties the opportunity to raise concerns that they may have regarding the verified claims of the auditor following submission of the claims to the CAISO. September 24 Order at ¶¶93. Unless data are submitted in a standardized format that includes all relevant data used in calculations, the Commission's decision to grant other parties the opportunity to raise concerns that they may have regarding the verified claims will, in practice, provide for only limited review by other parties, and submissions may not include information necessary to resolve any concerns identified.

**B. THE CAISO SUPPORTS THE INDICATED GENERATORS' REQUEST THAT THE COMMISSION REQUIRE CALCULATION OF INCREMENTAL HEAT RATES BASED ON UNIT OPERATING LEVELS**

The Indicated Generators contend that "the FCA template specifies the operating level at which the heat rate is to be determined (*i.e.*, the Acknowledged Operating Target)." Indicated Generators' Motion at 6. In fact, the CAISO's filing does not indicate that the heat rate must be calculated at the Acknowledged Operating Target ("AOT"), but points out, in response to the Commission's requirement that heat rates used in fuel cost calculations are "to be the same as that used by the ISO." See, Fuel Cost Format at 2 and ¶. 51 of the Commission's findings in Docket No. EL00-95-045 et al. (December 12, 2002) that heat rates used by the ISO in the refund proceedings were calculated at the AOT.

As noted in the explanatory statement provided with the CAISO's posted fuel cost allowance format:

As indicated in the [May 12] Fuel Cost Order, fuel cost allowance submissions must also clearly identify:

Marginal heat rate by unit (to be the same as that used by the ISO);

Heat rates used for each unit by the ISO in calculation of final MMCPs in these proceedings are the non-monotonic incremental heat rates at the unit's acknowledged operating target (AOT), as directed in the Commission's December 12, 2002 Order "December 12 Refund Order"). Calculations of the AOT in (sic) for the refund proceedings were made for each unit on a 10-minute interval basis. For purposes of calculating marginal heat rates for sales in the hourly PX market, each unit's hourly non-monotonic heat rates may be calculated based on either: (1) the unit's average of non-monotonic heat rates for each 10-minute interval used by ISO in MMCP, or (2) the unit's non-monotonic heat rates at the average AOT over the six 10 minute intervals for each hour. Fuel Cost Allowance Format at 2.

Moreover, the descriptions for the heat rate value in the table format proposed by the CAISO do not indicate anything about the operating level at which the heat rate is to be determined, and simply define the heat rate to be used as the "Incremental heat rate for a unit during the hour [or interval] for mitigated sales".<sup>7</sup>

Rather than trying to reopen issues and delay resolution of these proceedings, the CAISO was simply trying to clarify what heat rates were actually "used by the ISO" in the refund proceedings. The CAISO welcomes any clarification of the Commission's directive that the marginal heat rates to be used are "to be the same as that used by the ISO. "The CAISO has no objection to basing marginal heat rates for the purpose of the fuel cost allowance on the actual operating level of each unit, as proposed by the Indicated Generators.

**C. THE CAISO SUPPORTS THE INDICATED GENERATORS' REQUEST THAT THE COMMISSION CLARIFY WHETHER FUEL COST ALLOWANCES SHOULD BE CALCULATED BASED ON THE MMCP OR THE GAS PRICE INDICES USED TO CALCULATE THE MMCP**

The only other specific aspect of the CAISO's fuel cost allowance format contested by the Indicated Generators is one portion of the equation for calculating the specific level of the fuel cost allowance for mitigated sales. While the equation provided in the CAISO's format assumes that the fuel cost allowance would be calculated based on the difference (if any) between the generator's fuel cost and the MMCP, Indicated Generators contend that the allowance should be calculated based on the difference between the generator's

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<sup>7</sup> See Table 1, Column L,; Table 2, Column N and Table 4 Column L of the Fuel Cost Allowance Format.

average daily fuel cost and the fuel cost indices used to calculate the MMCP. Indicated Generators' Motion at 7-9.

The CAISO's proposed formula was based on the understanding that the "fuel cost allowance is meant to reimburse generators for any unrecovered cost of gas incurred to make spot power sales beyond that recovered under the MMCP calculation," so that in order to be eligible to receive a fuel cost allowance, the generator's fuel cost must exceed the MMCP. April 22 Order at 18 and May 12 Order at 10, 37. The CAISO joins the Indicated Generators in requesting that the Commission clarify this aspect of the fuel cost allowance procedure. As previously noted, this second specific modification requested by the Indicated Generators can be easily incorporated into the CAISO fuel cost allowance format by making a minor change in one of the formulas and including a field with the gas price index used to calculate the MMCP in Tables 1, 2 and 3.

**D. ANAHEIM'S PROPOSAL TO CLAIM NON-SCHEDULED ENERGY TOWARD PX DAY AHEAD SALES, AND VICE VERSA, SHOULD BE REJECTED**

The city of Anaheim ("Anaheim")<sup>8</sup> supports the Indicated Generators' request that the fuel cost allowance be calculated based on the difference between the generator's gas costs and the gas price index used to calculate the MMCP, and also contends that the CAISO's format "defines "transaction" in a manner that precludes Anaheim from receiving a fuel cost allowance in intervals when Anaheim ran its 45 MW combustion turbine ("CT") unit (its marginal cost

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<sup>8</sup> The city of Anaheim filed their motion to reject the CAISO's filing of its proposal for a fuel cost submission template on September 30, 2004. In the interest of time the CAISO has chosen to respond to Anaheim's allegations within the context of its response to Indicated Generators.

unit) and made energy sales that will be mitigated under the revised MMCPs below Anaheim's actual costs." Anaheim Motion at 3.

Anaheim's first argument stems from the fact that the CAISO's template for calculating the fuel cost allowance for PX sales indicates that the unit being claimed as providing energy for PX sales must have actually been scheduled to run in the Day Ahead or Hour Ahead market. Anaheim Motion at 3. The logic underlying the CAISO's format proposal is that, while bidding in the PX Day Ahead market is on a portfolio level, suppliers having bids accepted in the PX must then meet these sales obligations by submitting Day Ahead schedules for specific resources. In the example provided by Anaheim, however, Anaheim apparently wants to assign output from a turbine that was not scheduled to run in the Day Ahead or Hour Ahead market (i.e. uninstructed energy) as energy produced to meet sales in the Day Ahead PX market. The May 12 Order does appear to allow generators to assume that "a non-unit specific power sale (i.e. PX sales) would have been part of the very last amount of electricity produced," so that sellers may assign the heat rates from their least efficient units to these PX sales. May 12 Order at 53. However, the September 24 Order clarified that "the use of the marginal heat rate for non-unit specific sales must be limited by the unit's actual level of sales," and reaffirmed its finding that "fuel cost allowances should be based on the MWh actually sold into the CAISO and PX markets, and the gas used to fuel that generation" September 24 Order at 54. and April 22 Order at ¶ 18. Thus, the ability of generators to assign output of units with the highest heat rates to PX sales must clearly be limited to the pool of

units (and quantities) that were actually scheduled to operate in the Day Ahead market.

At the same time, Anaheim apparently also wants to be able to assign energy produced by a unit to meet its Day Ahead or Hour Ahead schedule as an uninstructed energy sale. As Anaheim's filing explains, "in its definition of uninstructed energy the ISO has excluded from eligibility any generation that was pre-scheduled with the ISO." Anaheim Motion at 4. Again, the CAISO's template for fuel cost allowance claims associated with uninstructed energy sales simply reflects how uninstructed energy is calculated and settled as part of the CAISO settlement process (i.e., only generation produced in excess of a unit's final Hour Ahead schedule is calculated and settled as uninstructed energy). The CAISO has not developed a new definition of uninstructed energy for purposes of the fuel cost template, as Anaheim suggests, but has merely designed the template to correspond to actual CAISO settlement data for sales of uninstructed energy.

Anaheim apparently wants the freedom to ignore the reality of how actual scheduling and settlement occurs in the PX and CAISO markets, so that it can pick and choose how to attribute the output of their unit in a way that maximizes its fuel cost allowance. There are several problems with this approach. First, by ignoring the reality of how actual scheduling and settlement occurs in the PX and CAISO Markets, Anaheim's approach would apparently leave generators free to assign the output of any unit to any sale it made in the PX and CAISO markets, regardless of whether that unit was actually scheduled or operating in these

markets. Again, this conflicts with the Commission’s finding that the “fuel cost allowances should be based on the MWh actually sold into the CAISO and PX markets, and the gas used to fuel that generation.” April 22 Order at ¶ 18.<sup>9</sup> In addition, by failing to require a linkage between specific transactions and each unit’s actual schedule, this approach would dramatically complicate the task of reviewing and verifying fuel cost allowances. While Anaheim only has one unit in its portfolio, the principle proposed by Anaheim could presumably create endless “gaming” opportunities for generators with portfolios of multiple units. For example, by combining the two specific examples provided by Anaheim, a supplier could assign uninstructed energy provided by a unit that was not scheduled to run to the supplier’s Day Ahead PX sales, while assigning output from a unit that was scheduled to run in the Day Ahead market (to meet PX sales obligations) and the energy that was “sold” as uninstructed energy from the first unit.

In sum, the CAISO’s approach is based on the simple reality that sales in the PX Day Ahead market were met by units scheduled to run in the Day Ahead market, while sales in the CAISO instructed and uninstructed energy markets were made by the units that are shown to have actually provided this energy in CAISO settlement records. Anaheim’s proposal that sellers should be allowed to claim non-scheduled energy output toward PX Day Ahead sales, and vice versa, should be rejected as being inconsistent with the Commission’s orders, on the grounds that it would introduce endless “gaming” opportunities for generators and greatly complicate the ability to assess and verify fuel cost allowance claims.

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<sup>9</sup> See also September 24 Order at 54.

### III. CONCLUSION

In order to avoid any further ambiguity or disagreement, the CAISO requests that the Commission approve the fuel cost format initially posted by the CAISO, or as revised to reflect the two changes requested by Indicated Generators. To facilitate this process, the CAISO is including with this filing as Attachment 1 a revised version of Tables 1 through 4 of the fuel cost allowance format which includes the two modifications requested by the Indicated Generators.

Respectfully Submitted,

**/s/ Gene Waas**

J. Philip Jordan  
Michael Kunselman

Swidler, Berlin, Shereff and Friedman, LLP  
3000 K Street, Ste. 300  
Washington, D.C. 20007  
Telephone: (202) 424-7500

Counsel for the California Independent  
System Operator Corporation

Charles F. Robinson  
General Counsel  
Gene Waas  
Regulatory Counsel

The California Independent System  
Operator Corporation  
151 Blue Ravine Road  
Folsom, CA 95630  
Telephone: (916) 608-7049

Date: October 5, 2004

**CERTIFICATE OF SERVICE**

I hereby certify that I have on this 5th day of October 2004, served copies of the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

**/s/ Gene L. Waas**  
Gene L. Waas

## ATTACHMENT 1

**Table 1. Format for Fuel Cost Allowance Submissions  
for Mitigated PX Energy Sales (Version 2)**

<b>Col. Ref</b>	<b>Variable</b>	<b>Description</b>
A	Opr_dt	Operation Date
B	Opr_hr	Operating Hour (hour ending)
C	PX_ID	Participant ID used in PX settlement records (Short_Name)
D	Unit_ID	ISO unit identification code
E	DA_MW	Final Day Ahead Energy schedule for unit for hour
F	QTY	Quantity (MWh) of generator's PX sales during hour attributed to unit
G	PRICE	Price (\$/MWh) for PX sales attributed to unit in hour
H	REV	Revenues from transaction prior to price mitigation (F x G)
I	MMCP	Mitigated Market Price (Hourly)
J	QTY_M	Quantity of participant's PX sales during hour attributed to unit in hour subject to price mitigation (F if I < G; otherwise 0)
K	REV_M	Revenues from transaction after price mitigation (F x Min(G, I) )
L	IHR	<b>Incremental heat rate for unit during hour for mitigated sales at unit's operating point (MMBTU/MW)</b>
M	FUEL	Calculated incremental fuel input (consumption) for mitigated sales of unit during hour (J x L)
N	FUEL_PRC	Avg. daily cost (\$/MMBTU) for fuel input (consumption) for mitigated spot market sales by generator during operating day.
O	GAS_PRC	<b>Gas price used in calculating MMCP</b>
P	FCA	<b>Fuel Cost Allowance ( 0 if O &lt;= N ; otherwise Min [ J x (N – O), H – K])</b>

Notes:

[1.F] Should not exceed units Day Ahead energy schedule for hour. The sum of Table 1, Column F for all units identified as providing a portion of total sales of PX energy from a generator's portfolio should add up to total sales of PX energy from a generator's portfolio during hours that is attributable to total amount of energy scheduled in Hour Ahead market by a generator's thermal units (taking into account PX sales met by other supply sources, such as inter-SC trades from other suppliers, imports and purchases from PX during same hour).

[1.N] As confirmed by the independent auditor based on generator's fuel purchase data, and total fuel consumption associated with spot market sales in PX and ISO that were mitigated (i.e. had a transaction price < MMCP) during operating day. Total fuel consumption for mitigated spot market sales during each operating day used in auditors calculation must equal sum of FUEL columns for each generating unit reported in Tables 1, 2 and 4 (representing unit-level data for sales of PX, ISO Instructed Energy and ISO Uninstructed Energy, respectively, during each hour/10-minute interval of operating day).

## ATTACHMENT 1

**Table 2. Format for Fuel Cost Allowance Submissions  
for Mitigated ISO Instructed Energy (IE) Sales**

Col. Ref.	Variable	Description
A	Opr_dt	Operation Date (TRADING DATE in ISO Settlement records)
B	Opr_hr	Operating Hour (TRADING HOUR in ISO Settlement records)
C	Rt_Int	10-minute interval, 1-6 (TRADING INT in ISO Settlement records)
D	SC_ID	Participant ID for transaction from ISO settlement records (Short Name for SC corresponding to numerical Business Associate ID).
E	Unit_ID	ISO unit identification code (LOCATION ID in ISO Settlement records)
F	E_TYPE	Energy type (SP=Spin, NS=Non-spin, SE=Supplemental energy, OOM=out-of-market)
G	CHRG_TYPE	401 = instructed energy priced at or below the (soft) price cap, 481 = instructed energy priced above the (soft) price cap
H	QTY	Quantity (MWh) of Instructed Energy sold through transaction during interval from unit (from BILLABLE QUANTITY in ISO Settlement records)
I	PRICE	Price (\$/MWh) for Instructed Energy (IE) sold through transaction during interval from unit (from PRICE in ISO Settlement records)
J	REV	Revenues from transaction prior to price mitigation (H x I).
K	MMCP	Mitigated Market Price (for 10-minute interval)
L	QTY_M	Quantity of participant's UE sales from transaction during 10-minute interval subject to price mitigation (H if K < I; otherwise 0)
M	REV_M	Revenues from transaction after price mitigation (H x Min (I, K) )
<b>N</b>	<b>IHR</b>	<b>Incremental heat rate for unit during 10-minute interval for mitigated sales at unit's operating point (MMBTU/MW)</b>
O	FUEL	Calculated incremental fuel input (consumption) for mitigated sales of unit during interval (L x N)
P	FUEL_PRC	Avg. daily cost (\$/MMBTU) for fuel input (consumption) for mitigated spot market sales by generator during operating day.
<b>Q</b>	<b>GAS_PRC</b>	<b>Gas price used in calculating MMCP</b>
<b>R</b>	<b>FCA</b>	<b>Fuel Cost Allowance ( 0 if Q &lt;= P ; otherwise Min [L x (P – Q), J – M])</b>

Notes:

[1.G] During the "soft cap " period starting Dec. 8, 2000, the final settlement quantity and price for sales of Instructed Energy over the \$250/\$150 soft caps must be calculated by combining final Billable Quantities and Billable Prices for both 401 and 481 chares types. In testimony during refund proceedings, generators have indicated they are able to perform this calculation based on ISO settlement records. However, the ISO stands ready to provide these data to the Commission and generators upon request in order to facilitate completion and verification of fuel cost allowance submissions.

## ATTACHMENT 1

**Table 3. Format for Fuel Cost Allowance Submissions  
for Mitigated ISO Uninstructed Energy (UE) Sales (SC Portfolio Level)**

Col. Ref	Variable	Description
A	Opr_dt	Operation Date (TRADING DATE in ISO Settlement records)
B	Opr_hr	Operating Hour (TRADING HOUR in ISO Settlement records)
C	Rt_Int	10-minute interval 1-6 (TRADING INT in ISO Settlement records)
D	SC_ID	Participant ID for transaction from ISO settlement records (Short Name for SC corresponding to numerical Business Associate ID).
E	Region_ID	Region ID from ISO uninstructed energy settlement records used to indicate whether uninstructed energy for each was settled by netting each SCs portfolio on a system-wide or zonal basis (in hours of real time congestion). If real time congestion, 1= NP15 and 2=SP15. If no congestion, 1= uniform system prices/charges.
F	E_TYPE	UE = Uninstructed energy
G	CHRG_TYPE	407 = Uninstructed energy
H	QTY	Quantity (MWh) of Uninstructed Energy sold through transaction during interval by SC in ISO system or in zone (if real time energy market split zonally). From BILL_QTY for SC during interval in SS_SETTLEMENT_DETAILS table.
I	PRICE	Price (\$/MWh) for Uninstructed Energy (UE) sold through transaction during interval by SC (from PRICE in ISO Settlement records)
J	REV	Revenues from transaction prior to price mitigation (H x I).
K	MMCP	Mitigated Market Price (for 10-minute interval)
L	QTY_M	Quantity of participant's UE sales from transaction during interval subject to price mitigation (H if K < I; otherwise 0)
M	REV_M	Revenues from transaction after price mitigation (H x Min(I, K) )
N	FUEL	Calculated incremental fuel input (consumption) for mitigated sales of UE from SC's portfolio during interval. Sum of Column I in Table 4 for all units identified as providing a portion of SCs total UE sales during interval.
O	FUEL_PRC	Avg. daily cost (\$/MMBTU) for fuel input (consumption) for mitigated spot market sales by generator during operating day.
P	GAS_PRC	<b>Gas price used in calculating MMCP</b>
Q	FCA	<b>Fuel Cost Allowance ( 0 if P &lt;= O ; otherwise Min [L x (O – P), J – M])</b>

Notes:

[3.G] Sum of Table 4, Column G for all units identified as providing a portion of total sales of uninstructed energy from generators portfolio should add up to total sales of uninstructed energy from a generator's portfolio during interval as reported in Table 3, Column H.

[4.I] Sum of Table 4, Column I for all units identified as providing a portion of total sales of uninstructed energy from a generator's portfolio should add up to total fuel input/consumption associated with total uninstructed energy from a generator's portfolio during interval as reported in Table 3, Column N.

## ATTACHMENT 1

**Table 4. Format for Fuel Cost Allowance Submissions  
for Mitigated ISO Uninstructed Energy (UE) Sales (Unit Level)**

Col. Ref.	Variable	Description
A	Opr_dt	Operation Date (TRADING DATE in ISO Settlement records)
B	Opr_hr	Operating Hour (TRADING HOUR in ISO Settlement records)
C	Rt_Int	10-minute interval (TRADING INT in ISO Settlement records)
D	SC_ID	Participant ID for transaction from ISO settlement records (Short Name for SC corresponding to numerical Business Associate ID).
E	Unit_ID	ISO unit identification code (LOCATION ID in ISO Settlement records)
F	ZONE_ID	ISO Congestion zone in which resource is located (NP15,SP15,ZP26).
G	UE	Uninstructed energy (MWh) from unit for interval from ISO settlement data (SS_UNINSTR_ENERGY_DETAILS table provided with ISO settlement data).
<b>H</b>	<b>IHR</b>	<b>Incremental heat rate for unit during interval for mitigated sales at unit's operating point (MMBTU/MW)</b>
I	FUEL	Calculation of incremental fuel input (consumption) for portion of SC's mitigated uninstructed energy sales attributed to unit during interval (G x H)

Notes:

[4.G] Sum of Table 4, Column G for all units identified as providing a portion of total sales of uninstructed energy from a generator's portfolio should add up to total sales of uninstructed energy from generators portfolio during interval as reported in Table 3, Column H.

[4.I] Sum of Table 4, Column I for all units identified as providing a portion of total sales of uninstructed energy from a generator's portfolio should add up to total fuel input/consumption associated with total uninstructed energy from a generator's portfolio during interval as reported in Table 3, Column N.