

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

CALPINE CORPORATION)	
(ZION ENERGY CENTER),)	
)	
Petitioner,)	
)	
)	PCB 16-112
)	(Variance-Air)
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

NOTICE

PLEASE TAKE NOTICE that I have today filed with the Office of the Pollution Control Board the Recommendation of the Illinois Environmental Protection Agency, a copy of which is herewith served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Charles E. Matoesian
Assistant Counsel

DATED: October 5, 2016
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RECOMMENDATION

The Illinois Environmental Protection Agency ("Illinois EPA" or "Agency"), by its attorney, hereby responds to the Amended Petition for Variance ("Amended Petition") of Calpine Corporation's Zion Energy Center ("Zion") from the sulfur content limitation for distillate fuel oil set forth in 35 Ill. Adm. Code 214.161(b)(2). Pursuant to Section 37(a) of the Illinois Environmental Protection Act (Act) [415 ILCS 5/37(a)] and 35 Ill. Adm. Code 104.216, the Illinois EPA does not object to the Illinois Pollution Control Board ("Board") granting Zion's Amended Petition as specified in this Recommendation. In support of its recommendation, the Illinois EPA states as follows.

I. PROCEDURAL HISTORY

1. On June 16, 2016, Zion filed its original Petition for Variance with the Board, requesting a variance from the 15 parts per million ("ppm") sulfur content limitation for distillate fuel oil set forth in 35 Ill. Adm. Code 214.161(b)(2). Amended Petition at P-3. On July 7, 2016, the Board denied the petition and required Zion to refile to correct certain procedural deficiencies. *Id.* On August 8, 2016, Zion filed its Amended Petition. *Id.* Zion requested relief from January 1, 2017, through December 31, 2021. *Id.* at P-12.

2. Pursuant to the Board's procedural rules, the petitioner must provide public notice of any petition for variance within 14 days after the filing of the petition. 35 Ill. Adm. Code 104.214(a); *see also* 415 ILCS 5/37(a). Additionally, the petitioner must provide written notice of a petition to the County State's Attorney, the Chairman of the County Board, each member of the General Assembly from the legislative district affected, and any person in the county who has filed a written request with the Board for notice of variance petitions. 35 Ill. Adm. Code 104.214(b).

3. Section 104.214(f) of the Board's procedural rules provides, "Within 21 days after the publication of notice, the petitioner must file with the Board a certification of publication that states the date on which the notice was published and must attach a copy of the published notice." 35 Ill. Adm. Code 104.214(f). Zion filed a Certification of Publication regarding its initial Petition for Variance with the Board on June 23, 2016.

4. Unless otherwise ordered by the hearing officer or Board, the Illinois EPA is required to make a recommendation to the Board on the disposition of a petition for variance within 45 days of the filing of the petition or any amendment thereto, or at least 30 days before a scheduled hearing, whichever is earlier. 35 Ill. Adm. Code 104.216. In its August 25, 2016, Order, the Board indicated that the Agency's recommendation is due September 22, 2016. However, in an order dated September 13, 2016, the Hearing Officer extended the recommendation date to October 5.

5. In an Order dated September 1, 2016, the Board issued questions for both Zion and the Agency to answer. On September 22, 2015, both parties filed answers to these questions.

II. BACKGROUND REGARDING THE FACILITY

6. Zion requests a variance for its Zion Energy Station. The Illinois EPA accepts and incorporates by reference Zion's description of its facility set forth in Section IV of its Amended Petition. Amended Petition at P-6 through P-8.

7. Zion explains that the facility is required to maintain a large volume of diesel fuel as back-up fuel. *Id.* at P-4.

8. Zion states that it is a peaking plant and thus only operates on distillate fuel when the natural gas supply cannot keep up with demand. *Id.* at P-9. This would be in times of cold weather or high electrical use. *Id.* Zion explains that Condition 7.1.5 (b)(ii) of Zion's Clean Air Act Permit Program permit ("CAAPP") limits distillate oil use to only backup fuel or "for the purposes of shakedown, evaluation of operation and emission testing of the CTs [combustion turbines]." *Id.* Zion's CAAPP also states that distillate fuel can be used, "[a]t other times when and to the extent that circumstances such as natural gas supply curtailment or breakdown of natural gas delivery systems make it impossible for the Permittee to fire natural gas in one or more emission units." Condition 7.1.5(b)(ii)(B) of Zion's CAAPP.

9. Zion indicates that it is only permitted to burn diesel fuel in each turbine for 500 hours per year. Amended Petition at P-6.

10. Zion explains that it has recently begun purchasing only ultra-low sulfur diesel fuel (i.e., fuel with sulfur content no greater than 15 ppm) to replenish any fuel depleted from the distillate fuel storage tanks. *Id.* at P-8. While this has resulted in dilution of the sulfur content of the stored fuel, recent sampling at the facility indicates that the distillate fuel is only diluted to 113 ppm. *Id.*

11. To the best of the Illinois EPA's knowledge, there are no state enforcement actions against Zion currently pending before the Board.

12. Zion indicates that it has also “submitted an application in November 2015 to clarify permit language to allow for the Facility to burn distillate oil during OFO [operational flow orders] periods in addition to when natural gas is completely unavailable. The Illinois EPA is working with the company towards issuing this construction permit. This will allow for increased opportunity for operating on distillate oil.” *Id.* at P-7; *See* Amended Petition at P-7 for more information regarding OFO periods.]

III. RELIEF REQUESTED

13. Zion requests relief from the following provision:

Section 214.161 Liquid Fuel Burned Exclusively

.....

b) Except as provided in subsections (c) and (d), on and after January 1, 2017, the owner or operator of an existing fuel combustion emission source, burning liquid fuel exclusively, must comply with the following:

.....

2) The sulfur content of all distillate fuel oil used by the fuel combustion emission source must not exceed 15 ppm; and

35 Ill. Adm. Code 214.161(b)(2).

14. In conjunction with this request, Zion proposes to comply with a 115 ppm sulfur content limitation during the term of the variance, purchase only ultra-low sulfur diesel fuel beginning immediately upon issuance of the variance, comply with recordkeeping and reporting requirements, and comply with the 15 ppm limitation by the end of the variance period.

Amended Petition at P-12.

IV. FACTS PRESENTED IN THE AMENDED PETITION

15. Pursuant to 35 Ill. Adm. Code 104.216(a), the Illinois EPA conducted an investigation of the facts alleged in Zion's Amended Petition, which included discussions with representatives of Zion and with Region 5 of the United States Environmental Protection Agency ("USEPA"). To the extent of the information currently available to the Illinois EPA and its level of expertise, the Illinois EPA does not disagree with the facts set forth in Zion's Amended Petition and in its answers to the Board's questions, unless otherwise specified in this Recommendation.

16. To date, the Illinois EPA has not received any public comments regarding the Amended Petition.

V. ENVIRONMENTAL IMPACT

17. Section 104.216(b)(2) of the Board's rules requires that the Illinois EPA state the location of the nearest air monitoring station maintained by the Agency, where applicable. 35 Ill. Adm. Code 104.216(b)(2). The sulfur dioxide (SO₂) air monitoring stations nearest to Zion are located in Cicero, IL and Northbrook, IL. These are the same monitoring stations identified in the Amended Petition. Amended Petition at P-17.

18. Zion opines that the variance will have a "low" environmental impact. *Id.* at P-18. Calculations based on the current sulfur concentrations of the fuel in the tank indicate that SO₂ emissions will be approximately 0.77 tons total for the entire variance period. *Id.* at P-13. In answers to the Board's questions, Zion clarified that the *excess* emissions would be .67 tons over the term of the variance when compared to emissions without the variance. Zion's Answers to Board Questions.

19. Zion's estimated emissions of SO₂ as a result of the variance are consistent with the information currently available to, and reviewed by, the Illinois EPA during the course of its investigation of the Amended Petition.

20. The Illinois EPA conducted modeling based on the information provided in the Amended Petition; it demonstrated that the requested variance is unlikely to impact attainment or maintenance of the SO₂ National Ambient Air Quality Standard ("NAAQS") and is unlikely to impact potential future SO₂ nonattainment areas.

VI. ARBITRARY AND UNREASONABLE HARDSHIP

21. In considering whether to grant or deny a variance pursuant to Section 35(a) of the Act, the Board is required to determine whether the petitioner has shown that it would suffer an arbitrary or unreasonable hardship if required to comply with the regulation, requirement, or order of the Board at issue. 415 ILCS 5/35(a). The Board's rules require that Illinois EPA estimate the cost that compliance would impose on the petitioner and on others, as well as the injury that the grant of the variance would impose on the public and the environment. 35 Ill. Adm. Code 104.216(b)(5) and (b)(6).

22. Zion argues that compliance with the regulatory requirement at issue by the January 1, 2017, compliance deadline would impose an arbitrary and unreasonable hardship, as "[b]oth immediate compliance options would result in significant economic losses for the Facility compared to the compliance plan described in Section VII. These losses create an unreasonable hardship for the Facility to immediately comply with the Subpart 214 fuel sulfur limits." Amended Petition at P-11.

23. Zion indicates that it has only two alternatives to obtaining a variance, "combusting the distillate oil or draining the tank and shipping off site." *Id.* at P-9.

First, it could combust all of the noncompliant fuel at the facility prior to January 1, 2017. Zion explains, however, that “[i]f the Facility were permitted to burn the distillate oil in the tank under any circumstances prior to January 1, 2017, it is unlikely that there would be need for the electricity generated by the Facility and Calpine would be operating at a substantial loss. The estimated value of the distillate oil in the storage tank is \$3.8 million. Therefore, combusting the distillate oil when there is not a demand for electricity would be cost prohibitive for Calpine, and result in superfluous emissions.” *Id.* at P-10.

24. In addition, there is no maintenance planned that would require burning the fuel before January 1, 2017. *Id.* Beyond this, Zion “is part of the Critical Power infrastructure contractually required to perform readiness testing on natural gas and distillate oil on an annual basis. The length of the readiness testing requirements will not allow for the Facility to combust the remaining distillate oil in the storage tank before January 1, 2017.” *Id.*

25. Zion could also drain the tank and replace the contents with 15 ppm fuel. Zion explains, however, “[t]he Facility is not currently equipped to empty the storage tank in any other manner than combustion. The Facility would have to make piping changes, install pumps, and secondary containment for a loadout area in order to empty the storage tank. These changes are estimated to cost approximately \$250,000.” *Id.*

26. Zion also argues that draining the tanks means “[f]acility plans would need to be reviewed and possibly updated to account for the changes: Stormwater Pollution Prevention Plan (SWPPP), Spill Prevention, Control and Countermeasure plan (SPCC), and Facility Response Plan (FRP). Review of these programs and permits are estimated to cost approximately \$10,000.” *Id.* at P-10 through P-11.

27. Moreover, “[t]he Facility is part of the Critical Power infrastructure and is contractually obligated to maintain 12 hours of back up fuel (distillate oil) onsite for each turbine in case of emergency. Therefore, the storage tank cannot be emptied due to contractual obligations... If an emergency situation occurs during the time the storage tank is being emptied, public safety could be compromised by the Facility’s reduced or lack of ability to operate.” *Id.* at P-11.

28. Based on the information currently available to it and its level of expertise, the Illinois EPA does not disagree with the cost estimates provided in the Amended Petition.

29. The Illinois EPA does not believe that any injury to the public or environment will result from granting the variance. The facility is not located in an SO₂ nonattainment area, and the estimated SO₂ emissions increase is extremely unlikely to impact an SO₂ nonattainment area. In addition, as previously explained, the Illinois EPA conducted modeling based on the information provided in the Amended Petition; it demonstrated that the requested variance is unlikely to impact attainment or maintenance of the SO₂ NAAQS and is unlikely to impact potential future SO₂ nonattainment areas

VII. CONSISTENCY WITH FEDERAL LAW

30. Pursuant to Section 35 of the Act and Section 104.208(a) of the Board’s rules, all petitions for variances from the Board’s air regulations must be consistent with the Clean Air Act and related federal regulations. 415 ILCS 5/35 and 35 Ill. Adm. Code 104.208(a).

31. Zion states that its requested variance satisfies this requirement. *Id.* at P-18.

32. Zion also states that its facility is located 56 miles from the nearest non-attainment area for the 1-hour SO₂ NAAQS. *Id.* at P-17.

33. Zion states that even if the variance is granted its emissions will always be below the limits of 40 CFR 60 Subpart GG to which its combustion turbines are subject. *Id.* at P-18.

34. On March 2, 2016, the Illinois EPA submitted Section 214.161(b)(2), along with several other provisions, to USEPA as part of its State Implementation Plan ("SIP") for the 2010 SO₂ NAAQS. While USEPA has not yet approved the Agency's SIP submittal, the Agency anticipates that approval is forthcoming. Therefore, the Agency will submit to USEPA any variance granted by the Board for approval as a SIP revision.

35. The Illinois EPA has conferred with USEPA regarding Zion's requested relief. USEPA indicated it has no reason to believe that this variance would threaten violations of the SO₂ NAAQS, which would be the primary criterion for approvability.

VIII. COMPLIANCE PLAN

36. Pursuant to Section 104.204(f) of the Board's rules, the petitioner is required to present a detailed compliance plan in the petition for variance. 35 Ill. Adm. Code 104.204(f).

37. Zion proposes a compliance plan. It is set forth below, with the Illinois EPA's recommended changes:

1. From the date of variance issuance, the Petitioner~~Permittee~~ shall not purchase distillate oil for combustion in the CTs exceeding 15 ppm sulfur content;
2. From January 1, 2017 through December 31, 2021, the sulfur content of all distillate oil combusted by the CTs shall not exceed 115 ppm sulfur content;
3. On and ~~or~~-after January 1, 2022, the sulfur content of all distillate oil combusted by the CTs shall not exceed 15 ppm sulfur content;
4. The Petitioner~~Permittee~~ shall maintain records demonstrating compliance with the requirements in this section (1-3), such as records from the fuel supplier indicating the sulfur content of the distillate oil;
5. The Petitioner~~Permittee~~ shall submit copies of the records to the Agency in subsection 4, along with the results of any tests conducted on the sulfur of the distillate oil by May 1, 2021;

6. The Petitioner shall r~~etain all required the~~ records for at least 5 years, and provide copies of the records to the Agency within 30 days after receipt of a request by the Agency; and

7. The Petitioner shall notify the Agency within 30 days after discovery of deviations from any of the requirements in this subsection (1-~~65~~). At minimum, and in addition to any permitting obligations, the notification must include a description of the deviations, a discussion of the possible cause of the deviations, any corrective actions taken, and any preventative measures taken.

Amended Petition at P-12. In addition, in answer to Question #6 of the Board's questions, Zion added an additional compliance term, as follows with Illinois EPA's recommended changes:

From the date of variance issuance until December 31, 2021, the Petitioner~~Permittee~~ shall not startup or operate more than one CT at a time during readiness testing. The Petitioner~~Permittee~~ shall maintain records demonstrating compliance with this requirement.

Zion's Answer to Board Question #6. Zion further added an additional condition to the list of compliance plan terms in its answer to Board Question #2, as follows with Illinois EPA's recommended changes:

The Petitioner shall take all steps necessary to ~~Work with the Illinois EPA to finalize the~~ obtain the requisite revised construction permit to allow for fuel oil use during OFOs.

Zion's Answer to Board Question #2.

IX. RECOMMENDATION AND CONCLUSION

38. Section 37(a) of the Act and Section 104.216(b)(11) of the Board's rules require that Illinois EPA make a recommendation to the Board as to the disposition of the petition. 415 ILCS 5/37(a) and 35 Ill. Adm. Code 104.216(b)(11). The burden of proof in a variance proceeding is on the petitioner to demonstrate that compliance with the rule or regulation would impose an arbitrary or unreasonable hardship. See 415 ILCS 5/35(a) and 35 Ill. Adm. Code 104.238.

39. For the reasons set forth above, the Illinois EPA does not object to the Board granting Zion's Amended Petition as specified in this Recommendation.

40. The Agency attaches an affidavit pursuant to 35 Ill. Adm. Code 104.216(b)(12).

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Charles E. Matoesian
Assistant Counsel

DATED: October 5, 2016
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AFFIDAVIT

I, David Bloomberg, under oath, depose and state as follows:

1. I am the Manager of the Air Quality Planning Section in the Bureau of Air at the Illinois Environmental Protection Agency (Illinois EPA).
2. All facts outside the record that are referenced in the Illinois EPA's Recommendation are true and correct to the best of my knowledge.

By: 
David Bloomberg

SUBSCRIBED and SWORN to

before me this 5th day

of October, 2016.


NOTARY PUBLIC



BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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Respondent.)	

CERTIFICATE OF SERVICE

I, the undersigned, an attorney, affirm that I have served the attached Recommendation of the Illinois Environmental Protection Agency upon the following person(s) by e-mailing it to the e-mail address(es) indicated below:

Bradley Halloran, Hearing Officer
Illinois Pollution Control Board
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Heidi M. Whidden
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I affirm that my e-mail address is charles.matoesian@illinois.gov; the number of pages in the email transmission is 14; and the e-mail transmission took place today before 5:00 p.m.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Charles E. Matoesian
Assistant Counsel

DATED: October 5, 2016
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