BEFORE THE ILLINOIS POLLUTION CONTROL BOARD
BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R15-21
SULFUR LIMITATIONS, NITROGEN	)	(Rulemaking – Air)
OXIDES EMISSIONS, AND CONTROL	)	(35 ILL. ADM CODE PART 214, 217, 225)
OF EMISSIONS FROM LARGE	)	
COMBUSTION SOURCES	)	

NOTICE OF FILING

TO: Mr. John T. Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 W. Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA ELECTRONIC MAIL)

Daniel L. Robertson
Hearing Officer
Illinois Pollution Control Board
100 W. Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA U.S. MAIL)

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the **PRE-FILED TESTIMONY OF DAVID KOLAZ ON BEHALF OF IERG,** copies of which are herewith served upon you.

Respectfully submitted,

By: /s/ Abby L. Allgire
Abby L. Allgire

Dated: July 17, 2015

Abby L. Allgire
Legal Counsel
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CERTIFICATE OF SERVICE

I, Abby Allgire, the undersigned, hereby certify that I have served the attached the

PRE-FILED TESTIMONY OF DAVID KOLAZ ON BEHALF OF IERG upon:

Mr. John T. Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

via electronic mail on July 17, 2015; and upon:

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SULFUR LIMITATIONS, NITROGEN	)	(Rulemaking – Air)
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PRE-FILED TESTIMONY OF DAVID KOLAZ ON BEHALF OF IERG

NOW COMES the ILLINOIS ENVIRONMENTAL REGULATORY GROUP ("IERG"), by and through its attorney, Abby L. Allgire, and, pursuant to the July 8, 2015, Hearing Officer Order, submits the following PRE-FILED TESTIMONY OF DAVID KOLAZ for presentation at the July 29, 2015, hearing in the above-referenced matter.

Pre-Filed Testimony of David Kolaz on behalf of IERG

My name is David Kolaz, and I am an environmental consultant providing air pollution expertise to the Illinois Environmental Regulatory Group and its members. I was previously employed by the Illinois EPA ("Agency") beginning in June 1971, where I served in various capacities in the air pollution control program, and ultimately served as Chief of the Bureau of Air from June 2000 until my retirement in December 2004. During my tenure at the Agency, I was engaged in a variety of activities that included planning, development, and implementation of the statewide air pollution control program designed to meet State and federal clean air laws. I have provided environmental consulting services to IERG from January 1, 2005, to present.

I am a graduate of the University of Illinois, where I received a Bachelor of Science degree in Aeronautical and Astronautical Engineering in June 1971. I also received a Master of Science degree in Environmental Engineering from Southern Illinois University in 1984. I am a registered professional engineer in Illinois.

IERG is a not-for-profit Illinois corporation affiliated with the Illinois Chamber of Commerce. IERG is comprised of 57-member companies that are regulated by governmental agencies that promulgate, enforce, or administer environmental laws, rules, regulations, or other

policies. One of IERG's primary roles is to represent the interests of its members in rulemakings before the Illinois Pollution Control Board ("Board"). IERG appreciates the opportunity to participate in this proceeding and offers the following testimony for consideration by the Board.

Purpose of Testimony

My testimony today is intended to support the overall efforts of the Illinois EPA to develop regulations that will efficiently and effectively achieve the goal of ensuring that Illinois meets the October 4, 2018, deadline for attaining the 2010 sulfur dioxide National Ambient Air Quality Standard (NAAQS) in the Lemont and Pekin nonattainment areas (78 *Fed. Reg.* 47191-47193). Additionally, I will provide specific comments regarding the proposed statewide ultra-low sulfur (15 ppm) rules, in support of the Agency's approach, while also identifying elements in the proposed rule that IERG finds necessary to highlight. Furthermore, IERG has identified some concerns regarding an existing Board rule (35 Ill. Adm. Code 214.301) that the Agency is seeking to, in its words, "clarify". IERG believes that the Agency's proposal not only fails to provide clarity to those sources subject to the rule, but also may have unintended consequences that can and should be avoided.

Sulfur Dioxide Air Quality Standards and Emission Reductions

The history of sulfur dioxide air quality standards and emission reductions in Illinois is useful for providing an overview of the evolution and focus of quality programs designed to limit emissions and meet these standards.

U.S EPA promulgated its first NAAQS for sulfur dioxide on April 30, 1971 (36 *Fed. Reg.* 8186). These standards consisted of health-based primary standards with an annual limit (0.03 ppm) and a 24-hour limit (0.14 ppm). It also included a secondary welfare standard with an annual limit (0.02 ppm) and a 3-hour limit (0.5 ppm). The next action on the sulfur dioxide standard occurred on September 14, 1973, when U.S. EPA revoked the secondary annual standard (0.02 ppm) and retained the secondary 3-hour standard (0.5 ppm) (38 *Fed. Reg.* 25678).

Following this change, the next time U.S. EPA addressed the sulfur dioxide NAAQS through a final rule was on May 22, 1996, when it determined that the latest health and welfare analysis supported retention of the existing primary and secondary standards (61 *Fed. Reg.* 25566). On June 22, 2010, U.S. EPA promulgated a 1-hour primary standard and revoked both the primary annual (0.03 ppm) standard and the primary 24-hour standard (0.14 ppm) (75 *Fed. Reg.* 35520). The secondary 3-hour standard (0.5 ppm) was retained. The latest sulfur dioxide air quality standard is the central focus of this rulemaking and represents a significant tightening of the primary health standard that has existed for the last 39 years.

Attainment Designations: On March 3, 1978, U.S. EPA designated 10 townships in Peoria and Tazewell Counties as nonattainment for the primary sulfur dioxide National Ambient Air Quality Standards (NAAQS) established on April 30, 1971 (43 *Fed. Reg.* 8962). These were the only areas of the State designated as nonattainment for the 1971 sulfur dioxide NAAQS. On June 5, 1995, U.S. EPA designated the remaining nonattainment areas in Peoria (Hollis and Peoria Townships) and Tazewell (Groveland Township) as in attainment of the 1971 sulfur dioxide NAAQS. After that action, there were no areas in Illinois designated as nonattainment for the sulfur dioxide NAAQS. U.S. EPA noted in its redesignation announcement that no monitored violations of the sulfur dioxide air quality standards had occurred since 1977 in Peoria or Tazewell Counties.

After the promulgation of the revised sulfur dioxide NAAQS in 2010, U.S. EPA designated two areas of the State as nonattainment for the new standard based on air monitoring data. These areas are the focus of the emission reductions contemplated by this proposed rulemaking and consist of three townships in the Lemont area and three townships in the Pekin area.

Historical Sulfur Dioxide Emission Reductions: Illinois EPA was created by the Illinois Environmental Protection Act (PA 76-2429), which became effective on July 1, 1970.

The first sulfur dioxide emission limits proposed by the newly formed Illinois EPA was filed with the newly formed Illinois Pollution Control Board on November 5, 1971, (R1971-023) and occurred just months after adoption of the first sulfur dioxide NAAQS. These rules were "...intended to form the structure of an integrated plan for implementation, maintenance, and enforcement of the National Ambient Air Quality Standards..." (November 5, 1971 letter to David P. Currie, Chairman of the Illinois Pollution Control Board, from John J. Roberts, Manager of the Division of Air Pollution Control for the Illinois EPA, and from William L. Blaser, Director of the Illinois EPA).

Since that time, both Illinois EPA and U.S. EPA have promulgated various sulfur dioxide emission limits reflecting advances in state-of-the-art pollution control for both new and existing facilities. The collective efforts of the State and federal programs have resulted in a dramatic decrease in sulfur dioxide emissions nationwide and in Illinois. According to data published in Illinois EPA's 2013 *Air Quality Report* (Appendix C: Point Source Emission Inventory Summary, Table C7), Illinois EPA estimates that sulfur dioxide emissions have decreased by 87%, from 1,577,992 tons per year in 1981 to 211,873 tons per year in 2013. U.S. EPA reported emissions of sulfur dioxide decreased by 50% nationally between 2001 and 2010 (*Our Nation's Air-Status and Trends Through 2010*, EPA-454/R-12-001, February 2012). During this same period, Illinois EPA estimates that sulfur dioxide emissions in the State decreased by 53%.

Planning for the 2010 Sulfur Dioxide Standard

IERG commends Illinois EPA on its work to identify the reductions necessary to meet the new standard and on its outreach to the regulated community to identify the most cost effective means for achieving these reductions. It seems clear from the experience with the 2010 sulfur dioxide NAAQS nonattainment areas identified so far, that reductions at a limited number of emission sources can mean the difference between attainment and nonattainment. This fact emphasizes the need to carefully identify those emission reductions that will be most effective in

achieving the air quality goals. Air monitoring data collected by the Agency since the 2008-2010 time frame shows that 3 of the 4 areas it previously identified as nonattainment for the current sulfur dioxide NAAQS now show monitored attainment (see Attachment A).

Based on the Agency's response to pre-filed questions submitted by IERG (Question 1(e)), the reason for these improvements can be tied to emission reductions at a few key facilities in the violating areas. A majority of the emission reductions being proposed by Illinois EPA in this rulemaking reflect the site-specific approach that is being taken to establish a cost effective emission reduction program that will result in achieving attainment by the deadline of October 4, 2018, or sooner.

Further, I would like to make specific comments on two components of the Agency's proposal. The first is in regard to the statewide 15 ppm diesel fuel standard, and the second is in regard to the revision proposed to the existing General Limitation (35 Ill. Adm. Code 214.301), which limits affected processes to 2000 ppm.

Liquid Fuels Limitation

The proposed rule requires the statewide use of diesel fuel with a sulfur content limit of 15 ppm (ultra-low sulfur diesel (ULSD)) beginning January 1, 2018. The Agency is to be commended on its extensive outreach on this element of the proposed rule. The Agency's analysis shows that ULSD is in widespread use in Illinois and IERG agrees. The Agency has accommodated some limited exceptions where a hardship was revealed, and these exceptions have been modeled to show that attainment of the NAAQS would not be threatened or impeded.

The Agency revised the portion of its original proposal (Illinois EPA's Second Motion to Amend Rulemaking Proposal-July 7, 2015) that requires that the owner or operator of an effected source keep records demonstrating compliance with the ULSD rule. The revision is less prescriptive than the original language, but is clear in what it demands. This allows greater

flexibility for an entity to use testing, binding contracts, fuel supplier records or other suitable documents and methods to demonstrate compliance.

"Clarification" of the General Limitation Rule (35 Ill. Adm. Code 214.301)

The Agency has proposed to amend the General Limitation rule contained in 35 Ill. Adm. Code 214.301, as follows based on the amendments submitted to the Board by the Agency on July 7, 2015.

> "Except as further provided by this Part, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm on a dry basis. Sources without a sulfur dioxide continuous emissions monitoring system must demonstrate compliance, as required, using performance testing in compliance with the requirements set forth in 35 Ill. Adm. Code 283. Sources with a sulfur dioxide continuous emissions monitoring system must demonstrate compliance with the emission limitation above, when averaged over a one-hour period."

IERG supports efforts to clarify this rule, which was promulgated on April 13, 1972, (R1971-23) with no substantive change since its inception. Since 1972, there have been major advances in sulfur dioxide measurement technology, the promulgation of newer emission limits for process sources, and a much more refined approach to compliance certification, all of which need to be considered in the setting of an emission limit. However, IERG believes that the Agency, in its efforts to add clarification, has actually changed this emission regulation without the necessary analysis and supporting justification.

The specific change that I am referring to is the requirement that affected sources that have a continuous emissions monitoring system (CEMS) must demonstrate compliance with the emission limit, "...when averaged over a one-hour period." IERG does not have an objection to

the use of continuous emission monitors to measure compliance with the 2000 ppm rule when that equipment is already in place and is properly configured to demonstrate compliance. However, IERG believes that the averaging time should be specified as a 3-hour average to be consistent with the intent of the original rulemaking (R1971-23). This rulemaking was designed to help meet the 1971 sulfur dioxide NAAQS, which as described previously, includes an annual standard, a 24-hour standard, and a 3-hour standard. The record in the original rulemaking did not specifically discuss averaging times but the Agency stated in its *General Discussion of Part 2* of its proposed regulations that, "The emission standards of Rule 204 [for industrial processes] have been designed to achieve and maintain the ambient sulfur dioxide standards listed in Table 1. Short term (3 hour average) maxima are to be limited by a combination of emission standards and stack height requirements..." In 1988 after completion of the rulemaking in R1986-30 (In the Matter of: Revisions to Sulfur Dioxide Rules, 35 Ill. Adm. Code 214, Sulfur Limitations, Joint Petition filed by Shell Oil Company and the Illinois Environmental Protection Agency), emission limits were added to Section 214.382 of Subpart O (Petroleum Refining, Petrochemical and Chemical Manufacturing) which, among other things, included restrictions for emission sources that are subject to the 2000 ppm rule (35 Ill. Adm. Code 214.301). In the Board's Opinion and Order of November 3, 1988, adopting this rule, the Board noted that U.S. EPA had expressed concerns about the approvability of the joint proposal because of the lack of compliance test methods. (See page 6, Compliance, of the November 11, 1988, Opinion and Order in R1986-30. In its order, the Board described the revisions that had been made to the rule to address U.S. EPA's concerns.

Among other things, the Board notes in the above referenced section (Compliance) of its Order, that, "Additionally, new Section 214.382(d) specifies that compliance of Section 214.382(b) and (c) shall be demonstrated on a three-hour block average basis." In the Findings section (page 12) of its November 3, 1988, Order, the Board notes, "...that 35 Ill. Adm. Code

214.301, which sets a SO_2 emission limit of 2000 ppm for process emission sources, continues to apply..." It then goes on to point out, "that each individual process or fuel combustion emission source either remains regulated under the existing standard or is subject to a new standard for that individual source which is equivalent or more stringent than existing regulatory standards."

Since Shell had two catalytic cracking units and an asphalt converter that were subject to new rules in this rulemaking, as well as the 2000 ppm limit of 35 Ill. Adm. Code 214.301, the Board's statement that the new limits are "...equivalent or more stringent..." than existing regulatory standards would only be true if the three-hour block average of this rule was not viewed to conflict with the averaging time of 35 Ill. Adm. Code 214.301. It is worth noting that the rulemaking in R1986-30 did not add continuous emission monitors to the approved Measurement Methods in 35 Ill. Adm. Code 214.101. U.S EPA later incorporated the rules promulgated in R1988-30 as part of the Illinois' State Implementation Plan. (40 CFR 52.720 (a)(99)(i)(C))

Using a three-hour block average for 35 Ill. Adm. Code 214.301 would be consistent with the stack test measurement method in 35 Ill. Adm. Code 214.101(a),the Agency rules in 35 Ill. Adm. Code Part 283, and in particular, 35 Ill. Adm. Code 283.210 (Criteria for Averaging Tests). The April 2014 U.S. EPA document titled "Guidance for 1-Hour SO2 Nonattainment Area Submissions" contains a Section 2 titled "Averaging times for SO_2 emission limits". In Subsection 2(a) (Policy regarding averaging times for SO2 emission limits), U.S. EPA describes a procedure for developing emission limits that have an averaging time greater than 1-hour and as long as 30-days. This procedure is consistent with the method that the Agency used in this rulemaking (Section 2.1.3 (Discussion of 30-Day Averaging) Technical Support Document (AQPSTR-15-03, April 2015)). This procedure, in brief, involves determining the critical 1-hour emission value that will demonstrate attainment and then describes the approach to establishing the longer term emission limit at a value that would "...compensate for the loss of stringency

inherent in applying a longer term average limit." U.S. EPA provided a footnote to this phrase and stated, "Stack tests generally involve three runs of approximately 1 hour each. Although stack tests therefore implicitly provide approximately 3-hour average results, the EPA does not expect any adjustments for limits for which compliance is determined by stack tests." (Emphasis added)

The stack test measurement method is the measurement method established and intended by the Board for the original 35 Ill. Adm. Code 214.301. Therefore, the three-hour average values determined from stack tests is the measurement means by which compliance with the 2000 ppm limit was intended to be determined. I highlight the word measurement because there are other credible means by which compliance with the 2000 ppm limitation is determined, including parametric monitoring for things such as sulfur content of fuel, sulfur content of process materials, and emission unit operating parameters. In fact, there are circumstances where stack tests are either not possible or not warranted and other credible means are used to demonstrate compliance.

IERG agrees that all credible evidence needs to be used to establish and confirm continuing compliance and is not opposed to adding continuous emission monitoring systems to the list of approved measurement methods in 35 Ill. Adm. Code 214.101. The averaging time for the CEMS data for this rule (35 Ill. Adm. Code 214.301) should be 3-hours to be consistent with the original intent of the rule as evidenced by the measurement method established at the time, the averaging time of the NAAQS at the time (i.e. 3-hour secondary standard), and the 3-block hour averaging time established at a later date (November 3, 1988, R1988-30) in which a more detailed sulfur dioxide limiting rule was established for certain emissions sources for the same NAAQS for which the 2000 ppm was promulgated.

It is also important to note that in the intervening years since the General Limitation 2000 ppm rule was promulgated (1972), a number of emission unit-specific rules have been

promulgated limiting sulfur dioxide emissions. For example, fluid catalytic cracking units and sulfur recovery units are subject to U.S. EPA's New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart J. The sulfur recovery units have a limit of 250 ppm on an hourly rolling 12-hour average. Fluid catalytic cracking units have a limit of 50 ppm on a daily rolling 7-day average.Thes e limits, and their averaging times, have been developed with consideration of the emission control options, work practices, and variability of the processes. In Illinois, these units are also subject to the 2000 ppm General Limitation.

In its answer to IERG's pre-filed question 11(b) about whether emission units subject to this rule are also subject to more stringent rules, the Agency stated that it, "...believes generally that most large SO_2 sources are subject to more stringent rules." The Agency has stated that it uses the most stringent limit in its sulfur dioxide modeling. IERG notes that, according to the Agency's follow-up answer to the question as to instances, "...where the 2000 ppm standard was the basis for a modeled emission" in the Pekin and Lemont nonattainment area, 2000 ppm was not used as the more stringent standard for emission units in the Lemont area that are subject to the NSPS 40 CFR 60, Subpart J and Ja. The 2000 ppm was not used for any emission units modeled in the Pekin nonattainment area, though the 2000 ppm standard applies to some sources modeled in that area.

IERG believes that these examples point to the fact that the 2000 ppm rule has lost much, if not all, of its original purpose and now serves no environmental purpose in most, if not all, cases. While addressing this issue comprehensively at this time is beyond the scope of this rulemaking, it is imperative that the "clarification" of the rule not expand the scope of the rule beyond its original intent. It seems clear from the Agency's modeling for this rulemaking that the 2000 ppm rule is not a critical factor in bringing the Pekin and Lemont areas into attainment. IERG suggests that many of its concerns with Section 214.301 could be resolved by specifying that Section 214.301 does not apply to emission units subject to more recent equipment class-

specific State or federal regulations or limits, or is satisfied by those units' compliance with those regulations or limits. At this time, IERG does not have a specific proposal for the Board's consideration, but hopes to provide one during the course of this rulemaking.

One final point I would like to make involves the suitability of the use of CEMS for determining compliance with this rule (35 Ill. Adm. Code 214.301) in some circumstances. As stated earlier, IERG does not object to the use of CEMS for this purpose. The Agency has stated in its response to IERG's pre-filed question 9(a) that it, "does not intend the proposed language adding CEMS as a SO_2 monitoring method to require affected units to install CEMS." I wish to point out that some emission units that currently have sulfur dioxide CEMS are operating those pursuant to more stringent limits than the 2000 ppm limit of 35 Ill. Adm. Code 214.301. For example, compliance with the CEMS requirement for measuring compliance with the fluid catalytic cracking unit 50 ppm limit in NSPS 40 CFR 60, Subpart J requires the instrument to be set to a span value no greater than 200 ppm. A span value of 4000 ppm would need to be set to measure compliance with the 2000 ppm limit. IERG suggests CEMS data not be used for compliance with the 2000 ppm limit in those cases where the instrument is being operated to meet a State or federal standard at a range unsuitable for measuring compliance with the 2000 ppm limit.

Thank you for the opportunity to present this testimony and for your consideration of the viewpoints expressed herein.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
REGULATORY GROUP

Dated: July 17, 2015

By /s/ Abby L. Allgire

ATTACHMENT A

ATTACHMENT A

ILLINOIS SULFUR DIOXIDE AIR MONITORING DATA (2008-2014)

CITY	COUNTY	SITE CODE	ANNUAL 99TH PERCENTILE VALUES (ppb)							DESIGN VALUE (ppb)				
			2008	2009	2010	2011	2012	2013	2014	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014
Champaign	Champaign	170191001	NA	NA	NA	NA	NA	14	15	NA	NA	NA	NA	NA
Chicago-SE Police	Cook	170310050	35	19	21	discontinued				25	NA	NA	NA	NA
Chicago-CTA	Cook	170310063	26	21	14	discontinued				20	NA	NA	NA	NA
Chicago-Com Ed	Cook	170310076	26	24	20	27	17	10	15	23	24	21	18	14
Lemont	Cook	170311601	97	114	90	90	108	73	16	100	98	96	90	66
Cicero	Cook	170314002	43	29	31	29	16	12	18	34	30	25	19	15
Northbrook	Cook	170314201	13	17	15	19	17	10	12	15	17	17	15	13
Oglesby	La Salle	170990007	326	8	14	8	6	9	10	116	10	9	8	8
Decatur	Macon	171150013	44	36	49	33	38	33	38	43	39	40	35	36
Nilwood	Macoupin	171170002	20	16	15	8	8	7	10	17	13	10	8	8
South Roxana	Madison	171191010	152	81	57	22	17	23	18	97	53	32	21	19
Wood River -WTP	Madison	171193007	67	46	54	28	30	29	30	56	43	37	29	30
Peoria	Peoria	171430024	52	21	43	45	44	32	38	39	36	44	40	38
Houston	Randolph	171570001	35	26	31	22	24	11	12	31	26	26	19	16
East St. Louis	St. Clair	171630010	35	30	31	22	24	19	25	32	28	26	22	23
Springfield	Sangamon	171670006	131	24	31	27	15	12	21	62	27	24	18	16
Pekin	Tazewell	171790004	243	233	228	172	245	195	190	235	211	215	204	210
Mount Carmel	Wabash	171850001	90	69	66	47	89	55	53	75	61	67	64	66
Rural Wabash County	Wabash	171851001	57	53	59	discontinued				56	NA	NA	NA	NA
Joliet	Will	171970013	56	32	24	discontinued				37	NA	NA	NA	NA

Indicates Design Value exceeds the 1-hour standard of 75 ppb.