BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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IN THE MATTER OF: AMENDMENTS TO 35 ILL. ADM. CODE 225.233 MULTI-POLLUTANT STANDARDS (MPS)

R18-20 (Rulemaking – Air)

NOTICE OF FILING

PLEASE TAKE NOTICE that I have filed with the Illinois Pollution Control Board the

Pre-Filed Testimony of the Illinois Attorney General's Office on the Pollution Control Board's

First Notice Proposal, a copy of which is hereby served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

BY: LISA MADIGAN, Attorney General of the State of Illinois

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Dated: December 11, 2017

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CERTIFICATE OF SERVICE

I, JAMES P. GIGNAC, an attorney, do certify that on December 11, 2017, I caused Pre-Filed Testimony of the Illinois Attorney General's Office on the Pollution Control Board's First Notice Proposal, and the Notice of Filing to be served upon the persons listed in the attached Service List by email for those who have consented to email service and by U.S. Mail for all others.

> <u>/s/ James P. Gignac</u> JAMES P. GIGNAC

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
AMENDMENTS TO 35 ILL. ADM.)
CODE 225.233, MULTI-POLLUTANT)
STANDARDS)

R18-20 (Rulemaking-Air)

PRE-FILED TESTIMONY OF THE ILLINOIS ATTORNEY GENERAL'S OFFICE ON THE POLLUTION CONTROL BOARD'S FIRST NOTICE PROPOSAL

The Illinois Attorney General's Office, on behalf of the People of the State of Illinois ("People"), hereby files its testimony directed to the Illinois Pollution Control Board ("Board") in this matter, as provided by the Hearing Officer Order issued on November 8, 2017.

I. <u>INTRODUCTION</u>

The Attorney General is the chief legal officer of the State of Illinois and is obligated to represent the interests of the People so as to ensure a healthful environment for all residents of the State. Ill. Const. 1970, art. V, § 15; *People v. NL Industries*, 152 Ill. 2d 82, 103 (1992). The Attorney General's responsibilities include enforcing Illinois's prohibition on causing air pollution. 415 ILCS 5/9(a).

The Illinois Supreme Court has made clear that the Board's rulemaking authority under the Illinois Environmental Protection Act ("Act") "is a general grant of very broad authority and encompasses that which is necessary to achieve the broad purposes of the Act." *Granite City Div. of Nat. Steel Co. v. IPCB*, 155 Ill. 2d 149, 182 (1993). The overall purpose of the Act is "to establish a unified, state-wide program supplemented by private remedies, to restore, protect and enhance the quality of the environment, and to assure that adverse effects upon the environment are fully considered and borne by those who cause them." 415 ILCS 5/2(b). In enacting our state's bedrock environmental law, the General Assembly specifically found the following:

[P]ollution of the air of this State constitutes a menace to public health and welfare, creates public nuisances, adds to cleaning costs, accelerates the deterioration of materials, adversely affects agriculture, business, industry, recreation, climate, and visibility, depresses property values, and offends the senses.

415 ILCS 5/8. Accordingly, the purpose of Title II of the Act is to "restore, maintain, and enhance the purity of the air of this State." *Id*.

The People's pre-filed testimony is given in response to the Board's October 19, 2017 Opinion and Order directing the Clerk to provide first notice publication without substantive review or comment by the Board. For the reasons discussed below, the Board should withdraw the Illinois Environmental Protection Agency's ("Illinois EPA") proposed amendments and reject and dismiss this rulemaking for its failure to restore, maintain, or enhance air quality in Illinois. The proposed amendments would not benefit air quality, but rather would allow increased pollution and weaken an important State public health program. If the proposed amendments are not withdrawn and rejected, they should be revised to *only* allow Dynegy Midwest Generation, Inc. ("Dynegy") to combine its two Multi-Pollutant Standard ("MPS") groups under single rate-based standards. The Board should not consider any switch to exclusively mass-based caps for the MPS units. However, if the Board determines that massbased caps should be employed for a combined group, the caps must be set far lower than those proposed in the first notice publication and provisions must be made for reducing the caps upon retirement of a unit.

II. <u>THE MULTI-POLLUTANT STANDARD</u>

In 2006, state regulations were considered to require mercury reductions from coal-fired power plants. *See In the Matter of Proposed New 35 Ill. Adm. Code 225, Control of Emissions from Large Combustion Sources (Mercury)*, R06-25 (Dec. 21, 2006) at 1. Coal plant owners asked for alternative compliance mechanisms to give them more time to meet the proposed

mercury standards. *See, e.g.*, R06-25, Joint Statement (July 28, 2006) at 1 ("Ameren is asking that the PCB consider and include with the Illinois EPA's proposed regulation an amendment to 35 Ill. Adm. Code 225, titled Multi-Pollutant Alternative, 35 III. Adm. Code Section 225.233."); R06-25, Corrected Joint Statement (Aug. 23, 2006) (request by Dynegy to amend Ameren's Section 225.233 proposal). The Board agreed and created the Multi-Pollutant Standard ("MPS") that coal-fired power plant owners could choose to follow.

The MPS "provided additional time to comply with the mercury limitations in exchange for compliance with mercury control technology requirements and emission limits for sulfur dioxide ('SO₂') and nitrogen oxides ('NOx')." IEPA Statement of Reasons at 1-2. As Ameren described the MPS in its post-hearing comments in R06-25, the MPS provided power plant owners with "compliance flexibility in exchange for the commitment to make significant and specified reductions in NOx and SO₂ emissions." R06-25, Ameren Post-Hearing Comments (Sept. 20, 2006) at 4. At the time the MPS was promulgated, Ameren, Dynegy, Illinois EPA, and the Board agreed that the MPS was both technically feasible and economically reasonable. R06-25, Joint Statement (July 28, 2006) at 3; Corrected Joint Statement (Aug. 23, 2006) at 4; and Second Notice Opinion and Order (Nov. 2, 2006) at 2.

In supporting the MPS in 2006, Illinois EPA made clear that it would hold companies to the specified NOx and SO₂ limitations they had promised in exchange for flexibility in meeting mercury limitations:

Once a company opts-in to the MPS, it is required to comply with the MPS for the lifetime of the affected units, i.e., the MPS is a "once-in, always-in" provision. This provision is necessary to ensure that Illinois and its citizens continue to receive the benefits of the MPS if a company elects to use this alternative to the otherwise applicable standards of the Illinois mercury rule. Otherwise a company might elect to opt-in to the MPS, receive the benefits of mercury control flexibility, and then opt-out of the MPS and comply with the otherwise applicable

requirements of the proposed mercury rule absent the additional emissions reduction requirements for NOx and SO₂.

R06-25, IEPA Post-Hearing Comments (Sept. 20, 2006) at 47-48.

Both Ameren and Dynegy opted in to the MPS. IEPA Statement of Reasons at 2. At that

time, the plants that existed for each company were:¹

Owner	Plant	Unit #	
Ameren	Coffeen	1-2	
Ameren	Duck Creek	1	
Ameren	E.D. Edwards	1-3	
Ameren	Hutsonville	5-6	
Ameren	Joppa	1-6	
Ameren	Meredosia	1-5	
Ameren	Newton	1-2	
Dynegy	Baldwin	1-3	
Dynegy	Havana	9	
Dynegy	Hennepin	1-2	
Dynegy	Vermilion	1-2	
Dynegy	Wood River	5	

Table 1: MPS Plants in	2006
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By opting in to the MPS, each group agreed to meet certain annual emission rates or meet a certain percentage of base rates for NOx and SO₂. The Ameren and Dynegy groups currently have different standards because: (1) their base rates were different and (2) Ameren requested a specific modification for its group's SO₂ standard in 2009. *See* IEPA Technical Support Document at 4; *In the Matter of Amendments to 35 Ill. Adm. Code 225, Control of Emissions from Large Combustion Sources (Mercury Monitoring)*, R09-10 (Apr. 16, 2009) at 12 (describing Ameren's request to amend its MPS SO₂ limits).

The Dynegy group base rates were different because it was required to install pollution control equipment after settling a Clean Air Act lawsuit brought against it in 2005.² See R06-25,

² See <u>https://www.epa.gov/enforcement/illinois-power-company-and-dynegy-midwest-generation-settlement</u>

¹ IEPA Statement of Reasons at 2-3.

Corrected Joint Statement (Aug. 23, 2006). In R09-10, Ameren requested a deferral of meeting 2013-14 SO₂ standards in exchange for agreeing to, among other things, a reduced 0.23 lbs/mmBtu standard for 2017 onward.³ In support of its proposed amendment, Ameren testified the revised standards would result in a "net environmental benefit" and assured the Board that "[o]ver the next eight years, Ameren intends to install and operate additional pollution control equipment necessary for it to achieve compliance with the proposed amendment." R09-10, Ameren Testimony of Michael L. Menne (Feb. 2, 2009) at 3-4. The Board accepted Ameren's proposed amendment based on the "projected environmental benefit" it offered. R09-10 (Apr. 16, 2009) at 29.

Aside from its annual emission rate limits, the MPS includes another salient feature. Under 35 Ill. Adm. Code 225.233(f)(1) and (2), a power plant owner must retire or surrender any allowances for NOx and SO₂ emissions "that would otherwise be available for sale or trade as a result of actions taken to comply with the [MPS] standards. . . ." A power plant owner may still sell or trade allowances, though, "that become available from one or more EGUs in a MPS Group as a result of holding allowances that represent over-compliance with the [MPS] NOx or SO₂ standard." 35 Ill. Adm. Code 225.233(f)(3). As Dynegy has previously articulated to the Board, the appropriate method for determining whether allowances in any given year reflect actions taken to comply with the MPS, or, instead, over-compliance, is to calculate an "equivalent" mass-based emission limit for the affected units for the year. *Dynegy Midwest Generation, Inc. v. IEPA*, PCB 12-135 (July 23, 2015) at 8 (quoting Amended Petition at 12-13 fn.17). Each year, the owner of affected coal units must provide a report to the Agency

³ Ameren sought this amendment to the MPS after the Board rejected Ameren's request for a variance in *Ameren Energy Generating Co. et al. v. IEPA*, PCB 09-21 (Jan. 22, 2009).

demonstrating compliance with Section 225.233(f). 35 Ill. Adm. Code 225.233(f)(5). In other words, the MPS in its current form not only recognizes that the regulation's NOx and SO₂ annual emission rate limits also entail equivalent annual mass-based emission limits (albeit variable ones, based upon the amount of annual heat input), but also attaches legal significance to those equivalent mass-based limits.

Following the amendment of Ameren's SO₂ limits in 2009, Ameren and Dynegy both sought variance relief from the MPS's SO₂ requirements. In 2012, Ameren petitioned the Board for a variance allowing it to delay compliance with the current standard of 0.23 lbs/mmBtu until 2020. *See Ameren Energy Resources v. IEPA*, PCB 12-126 (Sept. 20, 2012) at 8. The Board granted Ameren the requested relief because it found that Ameren's compliance plan would offer a "net benefit to the environment." *Id.* at 54. In 2013, Dynegy's subsidiary Illinois Power Holdings, LLC ("IPH") agreed to acquire the remaining operating units in the Ameren MPS group, paying nothing and instead taking on Ameren's debt.⁴ The Board denied a request to substitute IPH for Ameren in the variance granted in PCB 12-126. PCB 12-126 (June 6, 2013). The Board did subsequently grant IPH its own variance from the MPS's SO₂ requirements, again finding that the proposed compliance plan "would produce a net environmental benefit." *Illinois Power Holdings, LLC v. IEPA*, PCB 14-10 (Nov. 21, 2013) at 37.

On September 2, 2016, IPH and Ameren jointly filed a motion to terminate the variance, in which IPH stated that it could comply with the MPS SO₂ limit "without the variance in calendar year 2017 and each calendar year thereafter." PCB 14-10, Joint Motion to Terminate the Variance (Sept. 2, 2016) at 4. On October 27, 2016, the Board granted the motion to terminate the variance. Shortly thereafter, Dynegy and Illinois EPA began discussions on the

⁴ See "Dynegy to Acquire Ameren Energy Resources; 2012 Annual and 4th Quarter Results" (Mar. 14, 2013) at 17, available at <u>http://www.dynegy.com/investors/presentations-events</u>.

present proposed amendments to the MPS. IEPA Statement of Reasons at 3 ("[I]n or around November 2016, Dynegy approached the Illinois EPA, requesting that changes be made to the MPS.").

Separately, the Board denied Dynegy variance relief from Section 225.233(f)'s prohibition on trading or selling SO₂ allowances attributable to compliance with the MPS, related to its MPS group. The Board found that Dynegy had not adequately evaluated the environmental impact of selling or trading excess SO₂ allowances and had failed to prove any hardship from complying with the MPS. *Dynegy Midwest Generation, LLC v. IEPA*, R12-135 (July 23, 2015) at 25.

In addition to the variance proceedings, there have also been a series of plant closures beginning in 2011. Ameren and Dynegy have retired the following units: Newton 2 (615 MW) (2016), Wood River 4 (113 MW) (2016), Wood River 5 (388 MW) (2016), E.D. Edwards 1 (136 MW) (2016), Hutsonville 3 (75 MW) (2011), Hutsonville 4 (75 MW) (2011), Meredosia 3 (239 MW) (2011), Vermilion 1 (74 MW) (2011), and Vermilion 2 (109 MW) (2011). In testimony before the Board in 2006, Illinois EPA explained that the shutdown of MPS units does not affect the obligation of remaining plants to comply with the MPS's limits. *See* R06-25, 8/15/06 a.m. Trans. at 352:5-22. The two MPS groups now exist as follows:

"Dynegy Group"

Name	Unit #
Baldwin	1-3
Havana	9
Hennepin	1-2

Table 2:

"Old Ameren Group"

Name	Unit #
Coffeen	1-2
Duck Creek	1
ED Edwards	2-3
Joppa	1-6
Newton	1

As discussed below, both groups are complying with the MPS (*see also* IEPA Technical Support Document at 6)—but analysis of the data reveals that a central feature of this rulemaking is to allow greater operation of, and therefore more pollution from, certain less-controlled plants within the Old Ameren Group.

III. <u>EMISSIONS DATA</u>

The U.S. Environmental Protection Agency ("USEPA") implements regulatory programs to address air pollution from power plants, including the Acid Rain Program and the Cross-State Air Pollution Rule. USEPA monitors emissions of SO₂ and NOx from power plants and has been collecting data since 1990. The Air Markets Program Data (AMPD) tool (https://ampd.epa.gov/ampd/) allows users to search detailed datasets of power industry emissions. Using this tool, the People created a query as follows: Acid Rain Program (ARP), Emissions (Unit Level), Annual Time Frame (2016), Facility IDs,⁵ No Aggregation (Unit Level), and the Variables of Gross Load (MW-h), SO2 (tons), NOx (tons), and Heat Input (MMBtu). The result is the spreadsheet filed as Exhibit 1, Columns A-I (note, however, facility names were edited for length, decimal places were converted to zero, the rows were manually reordered to reflect the MPS groupings set forth above, and Newton Unit 2 was deleted due to its retirement in Nov. 2016). Based on the spreadsheet, the People created a series of tables that appear throughout this testimony.

A note on calculations: emission rates for SO₂ and NOx were calculated by multiplying SO₂ and NOx tons by 2,000 and dividing them by the unit's heat input to produce pounds per mmBtu. Formula: Emission Rate in lbs/mmBtu = ((SO₂ or NOx tons x 2,000) / heat input).

⁵ Facility IDs include: Baldwin (889), Coffeen (861), Duck Creek (6016), E.D. Edwards (856), Havana (891), Hennepin (892), Joppa (887), and Newton (6017).

Capacity factors were calculated by taking the annual gross load of the unit in megawatt-hours and dividing it by the unit's nameplate capacity in megawatts times 8,760 (total number of hours in a year). Formula: Capacity Factor in % = annual gross load in megawatt-hours ("MWh") / (MW nameplate capacity x 8,760). Nameplate capacities in megawatts for the units were obtained from the U.S. Energy Information Administration's Form EIA-860 data.⁶ Nominal capacity in mmBtu/hour for each unit were obtained from IEPA's Technical Support Document and multiplied by 8,760 to obtain the maximum heat input for each unit.

IV. <u>THIS RULEMAKING WILL FACILITATE INCREASED POLLUTION FROM</u> <u>CERTAIN LESS-CONTROLLED UNITS.</u>

This rulemaking proposal would consolidate the Old Ameren and Dynegy MPS groups into one. Then, as a further change to the MPS, the proposal would also replace the rate-based standards in the MPS with new mass-based standards. Illinois EPA asserts that the proposal is intended to "provide flexibility" and refers to Dynegy's desire to "us[e] its entire fleet to meet emissions standards," "to simplify compliance," and to receive "additional operational flexibility and economic stability." IEPA Statement of Reasons at 1, 3. All of that may be true, but left unsaid is the fact that the proposal will also remove an operational constraint on the Old Ameren Group, facilitating increased utilization of the group's less-controlled plants. The People demonstrate this below.

A. Dynegy Group SO₂ Compliance

As mentioned above, the Dynegy Group is governed by a consent decree and its operations currently meet the MPS standards. Below is data reflecting the group's 2016

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Available at: https://www.eia.gov/electricity/data/eia860/.

emission rate of 0.124 lbs/mmBtu of SO₂, well below the applicable standard of 0.19 lbs/mmBtu under 35 Ill. Adm. Code § 225.233(e)(2)(A):⁷

Table 3 – Dynegy Group 2016 SO2				
Unit	2016 Heat Input SO ₂ Tons		Rate	
	(mmBtu)	(2016)	lbs/mmBtu	
Baldwin 1	32,659,083	1275	0.0781	
Baldwin 2	38,830,110	1577	0.0812	
Baldwin 3	30,643,341	1168	0.0762	
Havana 9	30,279,146	1141	0.0754	
Hennepin 1	4,417,514	1099	0.4978	
Hennepin 2	12,095,937	2966	0.4904	
TOTAL	148,925,131	9226	0.124	

Note that Baldwin 3 was mothballed on October 17, 2016.⁸ In addition, Dynegy has stated its intent to mothball Baldwin 1 in mid to late 2018.⁹ However, even with these two units removed, the Dynegy group continues to maintain a comfortable compliance margin:

Unit	2016 Heat SO ₂ Tons		Rate
	Input (mmBtu)	(2016)	lbs/mmBtu
Baldwin 2	38,830,110	1577	0.0812
Havana 9	30,279,146	1141	0.0754
Hennepin 1	4,417,514	1099	0.4978
Hennepin 2	12,095,937	2966	0.4904
TOTAL	85,622,707	6783	0.158

Table 4 – Dynegy Group 2016 SO₂ Minus Baldwin 1 and 3

Dynegy Group NOx Compliance B.

Beginning in 2012, the Dynegy Group has been required to meet a NOx emission

standard of 0.10 lbs/mmBtu. Below is 2016 data demonstrating compliance.

See also R06-25, Corrected Joint Statement (Aug. 23, 2006) at 4-5, available at pages 4-5, http://www.ipcb.state.il.us/documents/dsweb/Get/Document-54080.

See "Third Quarter 2016 Review" (Nov. 1, 2016) at 4, available at http://www.dynegy.com/investors/presentations-events.

⁹ Id. See also http://www.randolphcountyheraldtribune.com/news/20161012/dynegy-delays-mothballingunit-1-at-baldwin

Table 5 – Dynegy Group 2016 NOX			
	2016 Heat	NOx Tons	Rate
Unit	Input (mmBtu)	(2016)	(lbs/mmBtu)
Baldwin 1	32,659,083	1214	0.0744
Baldwin 2	38,830,110	1428	0.0736
Baldwin 3	30,643,341	1397	0.0912
Havana 9	30,279,146	1188	0.0785
Hennepin 1	4,417,514	330	0.1494
Hennepin 2	12,095,937	873	0.1443
TOTAL	148,925,131	6430	0.086

Table	5 – D	vnegv	Group	2016	NOx
1		J	Group		1101

Removing Baldwin 1 and 3 makes minimal difference in the Dynegy Group's ability to meet the emission rate, as the 2016 data demonstrates:

Table 6 – Dynegy Group 2016 NOX Minus Baldwin 1 and 5				
	2016 Heat NOx Tons		Rate	
Unit	Input (mmBtu)	(2016)	(lbs/mmBtu)	
Baldwin 2	38,830,110	1428	0.0736	
Havana 9	30,279,146	1188	0.0785	
Hennepin 1	4,417,514	330	0.1494	
Hennepin 2	12,095,937	873	0.1443	
TOTAL	85,622,707	3819	0.089	

T 11 (Dynamy Chaun 2016 NOv Minus Daldwin 1 and 2

C. **Old Ameren Group SO₂ Compliance**

The Old Ameren Group is now owned by Dynegy subsidiary IPH and consists of the Coffeen, Duck Creek, E.D. Edwards, Joppa, and Newton plants. In its September 2016 filing with the Board, IPH stated that "[its] MPS Group can comply with the SO₂ emission limit [of 0.23 lbs/mmBtu] . . . in calendar year 2017 and each calendar year thereafter." IPH Motion to Terminate Variance, PCB 14-10 (Sept. 2, 2016) at 4 (emphasis added).¹⁰ IPH's 2016 data is set forth below and demonstrates that it was able to meet that year's SO₂ emission limit of 0.25 lbs/mmBtu:

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Available at: http://www.ipcb.state.il.us/documents/dsweb/Get/Document-93400

Table 7 – Old Ameren Group 2010 SO ₂				
	2016 Heat	SO ₂ Tons	Rate	
Unit	Input (mmBtu)	(2016)	(lbs/mmBtu)	
Coffeen 1	15,328,145	13	0.0017	
Coffeen 2	33,234,005	20	0.0012	
Duck Creek	23,470,382	10	0.0008	
ED Edwards 2	10,948,007	2306	0.4213	
ED Edwards 3	17,244,294	3584	0.4157	
Joppa 1	7,703,571	1576	0.4091	
Joppa 2	7,518,431	1562	0.4155	
Joppa 3	4,327,176	911	0.4213	
Joppa 4	6,811,839	1333	0.3915	
Joppa 5	4,027,068	1015	0.5041	
Joppa 6	4,937,499	1237	0.5011	
Newton 1	23,918,941	4827	0.4036	
TOTAL	159,469,359	18395	0.231	

Table 7 – Old Ameren Group 2016 SO₂

Coffeen 1, Coffeen 2, and Duck Creek are scrubbed plants¹¹ and thus have low SO₂ emission rates. Yet in 2016 these units operated at 48%, 64%, and 61% capacity factors, respectively. *See* Exhibit 1, Column M, Rows 8-10. It therefore follows that Dynegy/IPH could improve the Old Ameren Group's compliance margin with the existing 2017 and onward MPS standard of 0.23 lbs/mmBtu by utilizing some of the excess capacity at Coffeen and Duck Creek, while reducing operations at one or more other units that have such higher SO₂ emission rates.

D. Old Ameren Group NOx Compliance

Beginning in 2012, the Old Ameren Group has been required to meet a NOx emission standard of 0.11 lbs/mmBtu. Below is 2016 data demonstrating that IPH was able to comply with the emission rate.

¹¹ See Opinion and Order, PCB 14-10 (Nov. 21, 2013) at 103 (the Coffeen units and Duck Creek unit are equipped with flue gas desulfurization (FGD)).

Table o – Olu Ameren Group 2010 NOX					
	2016 Heat Input	NOx Tons	Rate		
Unit	(mmBtu)	(2016)	(lbs/mmBtu)		
Coffeen 1	15,328,145	490	0.0640		
Coffeen 2	33,234,005	1207	0.0726		
Duck Creek	23,470,382	1071	0.0912		
ED Edwards 2	10,948,007	1153	0.2107		
ED Edwards 3	17,244,294	609	0.0707		
Joppa 1	7,703,571	430	0.1116		
Joppa 2	7,518,431	428	0.1140		
Joppa 3	4,327,176	219	0.1014		
Joppa 4	6,811,839	340	0.0998		
Joppa 5	4,027,068	219	0.1086		
Joppa 6	4,937,499	259	0.1049		
Newton 1	23,918,941	1070	0.0895		
TOTAL	159,469,359	7495	0.094		

Table 8 – Old Ameren Group 2016 NOx

E. Conclusion

The data set forth in the tables above demonstrates that IPH is able to meet all of the current SO₂ and NOx emissions limits, even though IPH may experience a degree of operational tightness in the Old Ameren Group's SO₂ compliance and, to a lesser extent, with that group's NOx compliance. However, the point of this rulemaking appears to be Dynegy's desire to remove that tightness and allow it to operate more polluting plants like E.D. Edwards, Joppa, and Newton more intensively, without concern for MPS pollution limits. Indeed, to that end, the proposal will allow Dynegy to share the Dynegy Group's compliance margin (due to pollution controls required by federal consent decree) with the Old Ameren Group. The proposed rule also would provide caps that, as discussed below, are well in excess of both groups' operations and that essentially render the MPS meaningless as a state pollution control limit. Stated bluntly, there is no environmental protection or pollution control resulting from these proposed modifications.

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Accordingly, the Board should withdraw the first notice proposal because: (1) it does nothing to restore, maintain, and enhance the air quality of the state—the stated purpose of Title II of the Act (415 ILCS 5/8) and (2) renders meaningless the agreement established by the original MPS in which these plants were given more time to reduce mercury emissions.

V. <u>ILLINOIS EPA'S ANALYSIS OF "ALLOWABLE EMISSIONS" IS SKEWED</u> <u>TOWARDS ALLOWING "MAXIMUM EMISSIONS," WHICH IS AT ODDS</u> <u>WITH TITLE II OF THE ACT.</u>

Illinois EPA does not acknowledge the effect of facilitating increased operation of the Old Ameren Group's less-controlled plants, but instead posits an alternate scenario that it calls "allowable emissions" as justification for the proposed rulemaking. IEPA Statement of Reasons at 9. The analysis, however, is not grounded in reality because it assumes that all units will operate at their maximum heat input at the maximum emission rate allowed by the MPS. *See, e.g.*, IEPA Technical Support Document at 9 (showing operations at nominal capacity and assuming all units emitting at either 0.19 or 0.23 lbs/mmBtu SO₂). Illinois EPA's "allowable emissions" analysis only identifies the absolute highest amount of emissions that could be allowed for the fleet, assuming that the maximum heat input for each unit remains the same, and does not consider the impact its proposed amendments would have on actual operations. It is not technically feasible for Dynegy to operate the MPS units at their maximum heat input and at the maximum emission rate allowed by the MPS.

A. Dynegy does not operate its units at their maximum heat input.

Dynegy does not operate its units at their maximum heat input. No coal plant operator does. The highest average capacity factor achieved by the coal plant sector in the U.S. in recent

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years is 61.1% in 2014 and, going back to 1998, 73.6% in 2007.¹² The Dynegy MPS fleet operated at around 55 percent in 2016.¹³ Illinois EPA's and Dynegy's claim¹⁴ of an environmental benefit from simply capping emissions at any point below the "allowable emissions" calculated by Illinois EPA is not supported by actual capacity factors and emissions data.

For example, looking at SO₂ emissions, Illinois EPA has calculated the "allowable" SO₂ emissions from the MPS fleet at 66,354 tons by multiplying the maximum heat input for every MPS unit by the relevant MPS emission rate, and adding the results. IEPA Technical Support Document at 9. In other words: Illinois EPA has calculated the MPS's "equivalent" mass-based emission limit, *see Dynegy Midwest Generation, Inc. v. IEPA*, PCB 12-135 (July 23, 2015) at 8, for a hypothetical year in which all MPS units ran at a 100% capacity factor. Illinois EPA is proposed mass-based cap of 55,000 tons is 82.9% of 66,354 tons. Therefore, Illinois EPA is proposing a cap that corresponds to the MPS's "equivalent" mass-based emission limit for a hypothetical year in which all MPS units ran at an 82.9% capacity factor. There is nothing in the record that supports an "assumption" where Dynegy operates its MPS units at a 100% or even an 82.9% capacity factor.

For each and every year during which Dynegy's MPS units operated below an 82.9% capacity factor, Illinois EPA's proposed cap of 55,000 tons of SO₂ emissions would in fact allow more SO₂ pollution than the MPS as currently drafted, in any possible scenario. If, for example,

¹² See U.S. Energy Information Administration's Electric Power Annual data, *available at*: <u>https://www.eia.gov/electricity/annual/html/epa_04_08_a.html</u> (2013-2016) and <u>https://www.eia.gov/electricity/annual/archive/03482009.pdf</u> (1998-2009).

¹³ See Exhibit 1, Column M, Row 20

¹⁴ See Public Comment #2 of Dynegy Midwest Generation, LLC, Illinois Power Generating Company, Illinois Power Resources Generating, LLC, and Electric Energy, Inc. (Nov. 16, 2017) at 3, available at http://www.ipcb.state.il.us/documents/dsweb/Get/Document-96198.

as in 2016, the MPS units operate at a 55% capacity factor (see Exhibit 1, Column M, Row 20), the MPS's current emission rate limits would mandate an "equivalent" mass-based emission limit of 36,495 tons.¹⁵ If Illinois EPA's proposed amendments were in effect for that year, though, the MPS fleet would be authorized to emit 55,000 tons—18,505 tons more SO₂ than under the currently effective MPS emission rates. Even if Dynegy were to increase the MPS fleet's capacity factor to 65%, the MPS as currently drafted would allow only 43,130 tons of SO₂ emissions—11,870 tons less than Illinois EPA's proposed cap.¹⁶ In sum, as demonstrated herein, and when examined more closely, Illinois EPA's assumptions and analysis reflect an increase in allowable pollution by switching the MPS to a mass–based standard. As such, the Board should reject the proposed switch to mass-based emission limits.

B. It is not feasible for Dynegy to operate its units at their maximum heat input and maximum emission rate.

Even more significant than the above, it also is not technically feasible for Dynegy to operate the MPS units at their maximum heat input and at the maximum emission rate allowed by the MPS, because the emission rate of each individual unit is constrained within narrow bounds by its pollution control technology and associated legal requirements. Some units have pollution controls and some do not; units with controls operate far below the maximum rate and units without controls cannot come close to reaching it. Indeed, the federal consent decree governing these units requires use of pollution controls and emission rates such that Dynegy

¹⁵ This number can be calculated simply by multiplying Illinois EPA's "allowable" emissions of 66,354 by 0.5.

¹⁶ Illinois EPA's proposed cap of 25,000 tons of NOx emissions, annually, is 76.1% of Illinois EPA's calculated "allowable emissions" of 32,841 tons, *see* IEPA Technical Support Document at 10, and therefore corresponds to the MPS's current "equivalent" mass-based emission limit for the Dynegy MPS fleet operating at a 76.1% capacity factor. So, as explained above for SO2, Illinois EPA's proposed annual NOx cap would allow more pollution than the current MPS for each and every year during which Dynegy's MPS units operated below a 76.1% capacity factor.

would not be allowed to—in the absence of the MPS—significantly increase the emission rates by turning off pollution controls.¹⁷ Other applicable requirements, such as the Cross-State Air Pollution Rule ("CSAPR") and the Mercury and Air Toxics Standards ("MATS"), and any relevant National Ambient Air Quality Standards ("NAAQS"), are likely to impact any decision by Dynegy to turn off the controls it has installed at certain units.

Neither would Dynegy be able to significantly decrease the emission rates at its plants without installing new pollution controls, like scrubbers—something that Dynegy has indicated no intention to do. Thus, a more realistic framework for analysis than Illinois EPA's "allowable emissions" is to identify the *actual* potential to emit which takes into account the real rate of pollution for each unit.

C. SO₂: Actual Potential to Emit

Even if we assume the Dynegy Group *could* or *did* run at maximum heat input, and we use the unit-level emission rates of SO_2 from 2016, we generate the following table in which the group is still able to operate far below its 0.19 lbs/mmBtu limit:

	Max heat	Unit rate	SO ₂	Group rate
Unit	input	(lbs/mmBtu)	(Tons)	(lbs/mmBtu)
Baldwin 1	56,405,640	0.0781	2202	0.0781
Baldwin 2	52,428,600	0.0812	2129	0.0796
Baldwin 3	56,064,000	0.0762	2137	0.0785
Havana 9	48,337,680	0.0754	1822	0.0778
Hennepin 1	7,025,520	0.4978	1749	0.0912
Hennepin 2	22,057,680	0.4904	5408	0.1275
		TOTALS	15,447	0.1275

 Table 9 – Dynegy Group SO2 Emissions at Max Heat Input (2016 Data)

However, if the Old Ameren Group runs at maximum heat input, again using 2016 unitlevel emission rates, though, it would result in a group emission rate of 0.29 lbs/mmBtu. That is

¹⁷ See Paragraphs 55-56, 66, 69, available at: https://www.epa.gov/sites/production/files/documents/dmgfinal-cd.pdf

not allowable under the MPS, as the group would need to reduce its rate to 0.23 lbs/mmBtu. One scenario where it can do that is by running the cleanest plants with pollution controls as much as possible and then running less clean plants until reaching the maximum allowable rate:

	Max heat	Unit rate	SO ₂	Group rate
Unit	input	(lbs/mmBtu)	(Tons)	(lbs/mmBtu)
Duck Creek	44,019,000	0.0008	19	0.0009
Coffeen 2	48,565,440	0.0012	30	0.0011
Coffeen 1	28,750,320	0.0017	24	0.0012
Joppa 4	20,148,000	0.3915	3943	0.0568
Newton 1	65,253,240	0.4036	13169	0.1663
Joppa 1	20,148,000	0.4091	4121	0.1879
Joppa 2	20,148,000	0.4155	4186	0.2065
ED Edwards 3	40,243,440	0.4157	8365	0.2359
		TOTALS	33,858	0.2357

Table 10 – Old Ameren Group SO₂ Emissions at Max Heat Input (2016 Data)

We can see that this results in total emissions of 33,858 tons of SO_2 for the Old Ameren Group. Added to the Dynegy Group above (15,447 tons), the total maximum allowable SO_2 emissions under the current MPS should be considered no more than 49,305 tons using the 2016 unit-level emission rates.

D. NOx: Actual Potential to Emit

As displayed below, if the Dynegy Group did run at maximum heat input and—using the unit-level emission rates of NOx from 2016—achieve a group emission rate of 0.087 lbs/mmBtu. The total NOx emissions from the group in that case would be 10,594 tons.

able 11 – Dynegy Group NOX Emissions at Max Heat input (2010 Data)						
	Max heat	at Unit rate NOx		Group rate		
Unit	input	(lbs/mmBtu)	(Tons)	(lbs/mmBtu)		
Baldwin 1	56,405,640	0.0744	2097	0.0744		
Baldwin 2	52,428,600	0.0736	1928	0.0740		
Baldwin 3	56,064,000	0.0912	2556	0.0798		
Havana 9	48,337,680	0.0785	1897	0.0795		
Hennepin 1	7,025,520	0.1494	525	0.0817		
Hennepin 2	22,057,680	0.1443	1591	0.0874		
		TOTALS	10,594	0.0874		

Table 11 – Dynegy Group NOx Emissions at Max Heat Input (2016 Data)

If the Old Ameren Group runs at maximum heat input, again using 2016 unit-level emission rates, it would result in a group emission rate of 0.098 lbs/mmBtu:

	Max heat	Unit rate	NOx	Group rate
Unit	input	(lbs/mmBtu)	(Tons)	(lbs/mmBtu)
Coffeen 1	28,750,320	0.0640	920	0.0641
Coffeen 2	48,565,440	0.0726	1763	0.0695
Duck Creek	44,019,000	0.0912	2008	0.0773
ED Edwards 2	29,091,960	0.2107	3065	0.1043
ED Edwards 3	40,243,440	0.0707	1422	0.0972
Joppa 1	20,148,000	0.1116	1124	0.0986
Joppa 2	20,148,000	0.1140	1148	0.0999
Joppa 3	20,148,000	0.1014	1021	0.1000
Joppa 4	20,148,000	0.0998	1006	0.1000
Joppa 5	20,148,000	0.1086	1094	0.1006
Joppa 6	20,148,000	0.1049	1057	0.1009
Newton 1	65,253,240	0.0895	2919	0.0989
		TOTALS	18,546	0.0984

Table 12 – Old Ameren Group NOx Emissions at Max Heat Input (2016 Data)

We can see that this results in total emissions of 18,546 tons of NOx for the IPH group. Added to the Dynegy group above (10,594 tons), the total maximum allowable NOx emissions under the current MPS should be considered no more than 29,140 tons using the 2016 unit-level emission rates.

* * * *

Thus, taking the individual units' 2016 emission rates and calculating pollution emissions running at the highest possible heat input, consistent with the MPS as currently drafted, results in total SO₂ emissions of 49,305 tons and NOx emissions of 29,140 tons. Compared to the 55,000/25,000 proposal, the combined units' actual potential to emit shows that the rulemaking proposal—even at the highest possible heat input—is harmful for SO₂ limits and at based a marginal improvement for NOx emissions. When analyzed using real-world heat input, though, the proposal's negative impacts, particularly for SO₂, become even more apparent. Table 13 shows that the combined 2016 SO₂ emissions of the two groups are 27,621 tons and Table 15

shows the NOx emissions of the two groups are 13,925 tons. Obviously, the proposed caps are far in excess of the combined groups' most recent operations. The first notice proposal should be withdrawn and rejected by the Board and the rulemaking should be dismissed.

VI. <u>IF NOT WITHDRAWN AND REJECTED, THE FIRST NOTICE PROPOSAL</u> <u>SHOULD BE SUBSTANTIALLY MODIFIED.</u>

For the reasons discussed above, the Board should allow the MPS to continue as it was intended and withdraw and reject the first notice proposed amendments and dismiss the rulemaking. If the Board proceeds with the rulemaking, then it should consider the alternative of combining the groups while maintaining a rate-based standard. The Board should not consider any switch to exclusively mass-based standards for the MPS units. However, if the Board determines that only mass-based standards should be used for a combined group, the caps need to be set significantly lower than what appear in the proposal and the proposal needs to include provisions for reducing the caps if and when Dynegy retires units.

A. Combining MPS Groups while Continuing Rate-Based Standards

Combining Dynegy's MPS groups could provide Dynegy additional operational flexibility and credit for the Dynegy Group's current over-compliance with MPS emission limits. But if the Board agrees to allow the combination of MPS groups, it should maintain rate-based standards for measuring compliance and not accept the Illinois EPA's proposal to switch to mass-based.

Rate-based and mass-based are both useful tools for setting pollution standards and for providing operational flexibility to industry. But switching from a rate-based to a mass-based

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standard is difficult to do while maintaining continuity of environmental benefits.¹⁸ There is a good reason that rate-based standards are so frequently used in setting limits on coal plant emissions. Within certain bounds, the amount of time that coal plants run annually varies from year to year. Rate-based limits ensure that coal plants are properly controlling their emissions over the course of the year, no matter how much or how little they actually run. For mass-based standards, the key is where the caps are set. If the caps are too high, the regulated facilities can continue to pollute with no requirement to reduce emissions, possibly even *increasing* their pollution.

Instead of attempting to switch to a mass-based standard, a new combined MPS group could receive a new rate-based standard. Since this issue has not been considered yet, the Board should provide for comments from stakeholders on what that standard should be and the bases for it. For example, here is one scenario:

For SO₂, the combined group standard could be set at 0.21 lbs/mmBtu, which would be the midpoint between the current standard for the Dynegy Group (0.19) and the Old Ameren Group (0.23). It is also eminently achievable for the combined MPS group as demonstrated in the following table using 2016 data:

	2016 Heat		
	Input	SO ₂ Tons	Rate
Unit	(mmBtu)	(2016)	(lbs/mmBtu)
Baldwin 1	32,659,083	1275	0.0781
Baldwin 2	38,830,110	1577	0.0812
Baldwin 3	30,643,341	1168	0.0762
Havana 9	30,279,146	1141	0.0754
Hennepin 1	4,417,514	1099	0.4978

Table 13 - Combined MPS Group SO₂ Emissions (2016 Data)

¹⁸ See, e.g., CO2 Emission Performance Rate and Goal Computation Technical Support Document for CPP Final Rule, USEPA (Aug. 2015), p. 20-25, *available at* <u>https://www.epa.gov/sites/production/files/2015-</u> 11/documents/tsd-cpp-emission-performance-rate-goal-computation.pdf.

Hennepin 2	12,095,937	2966	0.4904
Coffeen 1	15,328,145	13	0.0017
Coffeen 2	33,234,005	20	0.0012
Duck Creek	23,470,382	10	0.0008
ED Edwards 2	10,948,007	2306	0.4213
ED Edwards 3	17,244,294	3584	0.4157
Joppa 1	7,703,571	1576	0.4091
Joppa 2	7,518,431	1562	0.4155
Joppa 3	4,327,176	911	0.4213
Joppa 4	6,811,839	1333	0.3915
Joppa 5	4,027,068	1015	0.5038
Joppa 6	4,937,499	1237	0.5011
Newton 1	23,918,941	4827	0.4036
TOTAL	308,394,490	27621	0.1791

This holds true even with Baldwin 1 and Baldwin 3 removed from the combined MPS group:

	2016 Heat Input	SO ₂ Tons	Rate
Unit	(mmBtu)	(2016)	(lbs/mmBtu)
Baldwin 2	38,830,110	1577	0.0812
Havana 9	30,279,146	1141	0.0754
Hennepin 1	4,417,514	1099	0.4978
Hennepin 2	12,095,937	2966	0.4904
Coffeen 1	15,328,145	13	0.0017
Coffeen 2	33,234,005	20	0.0012
Duck Creek	23,470,382	10	0.0008
ED Edwards 2	10,948,007	2306	0.4213
ED Edwards 3	17,244,294	3584	0.4157
Joppa 1	7,703,571	1576	0.4091
Joppa 2	7,518,431	1562	0.4155
Joppa 3	4,327,176	911	0.4213
Joppa 4	6,811,839	1333	0.3915
Joppa 5	4,027,068	1015	0.5038
Joppa 6	4,937,499	1237	0.5011
Newton 1	23,918,941	4827	0.4036
TOTAL	245,092,066	25178	0.2055

Table 14 – Combined MPS Group SO₂ Emissions (2016 Data) Minus Baldwin 1 and 3

For NOx, the combined group standard could be set at 0.105 lbs/mmBtu, which would be the midpoint between the current standard for the Dynegy Group (0.10) and the Old Ameren

Group (0.11). It is also eminently achievable for the combined MPS group as demonstrated in the following table using 2016 data:

		NOx	
	2016 Heat	Tons	Rate
Unit	Input (mmBtu)	(2016)	(lbs/mmBtu)
Baldwin 1	32,659,083	1214	0.0743
Baldwin 2	38,830,110	1428	0.0736
Baldwin 3	30,643,341	1397	0.0913
Havana 9	30,279,146	1188	0.0784
Hennepin 1	4,417,514	330	0.1494
Hennepin 2	12,095,937	873	0.1443
Coffeen 1	15,328,145	490	0.0641
Coffeen 2	33,234,005	1207	0.0727
Duck Creek	23,470,382	1071	0.0911
ED Edwards 2	10,948,007	1153	0.2116
ED Edwards 3	17,244,294	609	0.0708
Joppa 1	7,703,571	430	0.1116
Joppa 2	7,518,431	428	0.1139
Joppa 3	4,327,176	219	0.1012
Joppa 4	6,811,839	340	0.0998
Joppa 5	4,027,068	219	0.1088
Joppa 6	4,937,499	259	0.1049
Newton 1	23,918,941	1070	0.0895
TOTAL	308,394,490	13925	0.0903

Table 15 – Combined MPS Group NOx Emissions (2016 data)

And, with Baldwin 1 and 3 removed from the combined MPS group, a very similar result:

Table 16 – C	Combined MPS C	Group NOx	Emissi	ons ((2016 d	ata)	Minus	Baldwin	1:	and	3
				NO	v						

		NOx	
	2016 Heat	Tons	Rate
Unit	Input (mmBtu)	(2016)	(lbs/mmBtu)
Baldwin 2	38,830,110	1428	0.0736
Havana 9	30,279,146	1188	0.0784
Hennepin 1	4,417,514	330	0.1494
Hennepin 2	12,095,937	873	0.1443
Coffeen 1	15,328,145	490	0.0641
Coffeen 2	33,234,005	1207	0.0727
Duck Creek	23,470,382	1071	0.0911
ED Edwards 2	10,948,007	1153	0.2116
ED Edwards 3	17,244,294	609	0.0708

Joppa 1	7,703,571	430	0.1116
Joppa 2	7,518,431	428	0.1139
Joppa 3	4,327,176	219	0.1012
Joppa 4	6,811,839	340	0.0998
Joppa 5	4,027,068	219	0.1088
Joppa 6	4,937,499	259	0.1049
Newton 1	23,918,941	1070	0.0895
TOTAL	245,092,066	11314	0.0923

B. Combining MPS Groups with Mass-Based Standards and Reduction of Allocation for Unit Retirement

The first notice proposal contains a mass SO₂ cap of 55,000 tons and a mass NOx cap of 25,000 tons. The Board should not consider any switch to exclusively mass-based standards for the MPS units. However, if the Board decides that the MPS' rate-based standards should be replaced with mass-based caps, then the numbers proposed by Illinois EPA need to be set significantly lower to ensure this MPS rulemaking comports with the stated purpose of Title II of the Act—to "restore, maintain, and enhance the purity of the air of this State." 415 ILCS 5/8. Accordingly, if the Board decides mass-based standards are warranted, it should make provisions for stakeholders to provide input on how the caps should be set and what the numbers should be.

With respect to reduction allocations for unit retirement, there is no provision in the first notice proposal for what happens if and when Dynegy retires a unit (as opposed to transferring it to another owner). If Dynegy retires a unit, its allocation should be subtracted from the MPS caps. When Dynegy transfers a unit, it does not get to keep that unit's pollution allocation, and the new owner does not get to keep the allocation if the owner retires the unit. The rationale applied to the transfer of a unit should apply in the case of Dynegy retiring a unit—that unit's pollution allocation should be retired as well.

To the extent Dynegy or Illinois EPA contend that the cap should not be reduced upon the retirement of a unit, so that the company could be allowed to operate remaining units at a

higher capacity factor, that argument should be rejected. As demonstrated above, though, this would be unnecessary given the ample runtime allowed by the first notice proposal's excessively high caps. Put simply, if Dynegy retires one of its units, Dynegy has no need for a license to emit that unit's pollution elsewhere. Moreover, the General Assembly's purpose in enacting Title II of the Act was to "restore, maintain, and enhance the purity of the air of this State." 415 ILCS 5/8. Consequently, retiring a unit and reducing the cap on the pollution Dynegy can emit fleet-wide is consistent with the purposes of Title II of the Act. Accordingly, the Board should revise the proposed rules and require a reduction in the cap for any unit in the MPS group that is retired.

VII. <u>CONCLUSION</u>

Dynegy should be required to comply with the emission standards that it and Ameren, its predecessor in ownership, agreed to when the MPS was created. The Board should therefore withdraw and reject the first notice proposal and dismiss the rulemaking. If the proposal is not withdrawn, then the Board should modify it to only allow Dynegy to combine the MPS groups while continuing to comply with rate-based standards. The Board should not consider any switch to exclusively mass-based standards for the MPS units. However, if the Board determines that the record supports the use of mass-based standards, the emissions caps should be set significantly lower than the first notice proposal and, in addition, any such caps should be reduced accordingly if and when Dynegy retires units.

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Respectfully submitted,

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