

## Appendix F

### **Indiana Coal-Fired EGUs Pollution Controls and Shutdowns Spreadsheet**

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Table 8 Indiana Coal-Fired Electric Generating Units Controls, Control Efficiencies and Shutdowns

| Source Name  | County ID | Source ID | Unit ID | PM Control(s)                        | SO <sub>2</sub> Control(s)                                | SO <sub>2</sub> Control Efficiency (%) | NO <sub>x</sub> Control(s)   | NO <sub>x</sub> Control Efficiency (%) | SO <sub>3</sub> Control(s)               | H <sub>2</sub> SO <sub>4</sub> Control(s) | Hg Control(s)  | Comments  |
|--------------|-----------|-----------|---------|--------------------------------------|---|--|--|--|--|---|--|---|
| A B Brown    | 129       | 00010     | 1       | Baghouse                             | Dual Alkali FGD   |  | Low NO <sub>x</sub> Burner Technology and Low Excess Air/Selective Catalytic Reduction System              |  | Sorbent Injection System                 |   |  | Shut Down in 2023, replaced with renewables and NG-fired turbines according to source (3-17-2021)   |
|              |           |           | 2       | Cold-side Electrostatic Precipitator | Dual Alkali FGD   | 96.7                                   | Low NO <sub>x</sub> Burner Technology and Low Excess Air/Selective Catalytic Reduction System              |  | Sorbent Injection System                 |   |  | Shut Down in 2023; replaced with renewables and NG-fired turbines according to source (3-17-2021) Highest control efficiency for 2015 to 2019 |
| Alcoa        | 173       | 00002     | 4       | Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization (2008)        | Information not available              | Low NO <sub>x</sub> Burner Technology with Overfire Air (1998)/Selective Catalytic Reduction System (2004) | Information not available              |  | Reagent Injection System (2009)           |  | Alcoa/Vectren exit purchase agreement for power from Unit 4 in 2023. Unit will remain operational as a non-EGU boiler                         |
| Cayuga       | 165       | 00001     | 1       | Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization (2008)        | 98.44                                  | Low NO <sub>x</sub> Burner Technology w/ Separated OFA (1993)/Selective Catalytic Reduction System (2015)  | 88.00                                  | SO <sub>3</sub> Mitigation System (2015) |   | Mercury re-emission chemical injection system (2015), Calcium Bromide (2016) | Control efficiencies calculated. Shut Down in 2028  |
|              |           |           | 2       | Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization (2008)        | 98.91                                  | Low NO <sub>x</sub> Burner Technology w/ Separated OFA (1993)/Selective Catalytic Reduction System (2015)  | 88.00                                  | SO <sub>3</sub> Mitigation System (2015) |   | Mercury re-emission chemical injection system (2014), Calcium Bromide (2016) | Control efficiencies calculated. Shut Down in 2028  |
| Clifty Creek | 077       | 00001     | 1       | Cold-side Electrostatic Precipitator | Fluidized-Gas Desulfurization System                      | 98% (design basis)                     | Overfire Air Selective Catalytic Reduction   | From 70-90%                            |  |   |  |   |
|              |           |           | 2       | Cold-side Electrostatic Precipitator | Fluidized-Gas Desulfurization System                      | 98% (design basis)                     | Overfire Air Selective Catalytic Reduction   | From 70-90%                            |  |   |  |   |
|              |           |           | 3       | Cold-side Electrostatic Precipitator | Fluidized-Gas Desulfurization System                      | 98% (design basis)                     | Overfire Air Selective Catalytic Reduction   | From 70-90%                            |  |   |  |   |
|              |           |           | 4       | Cold-side Electrostatic Precipitator | Fluidized-Gas Desulfurization System                      | 98% (design basis)                     | Overfire Air Selective Catalytic Reduction   | From 70-90%                            |  |   |  |   |
|              |           |           | 5       | Cold-side Electrostatic Precipitator | Fluidized-Gas Desulfurization System                      | 98% (design basis)                     | Overfire Air Selective Catalytic Reduction   | From 70-90%                            |  |   |  |   |
|              |           |           | 6       | Hot-side Electrostatic Precipitator  | Fluidized-Gas Desulfurization System                      | 98% (design basis)                     | Overfire Air   |  |  |   |  |   |
| FB Culley    | 173       | 00001     | 2       | Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization               |  | Low NO <sub>x</sub> Burner Technology (Dry Bottom only)  |  |  |   |  | Anticipated Shut Down in 2023, replaced with renewables and NG-fired combustion turbines, as per source (3-17-2021)                           |
|              |           |           | 3       | Baghouse                             | Wet Limestone Fluidized-Gas Desulfurization               | 98.50                                  | Low NO <sub>x</sub> Burner Technology (Dry Bottom only) Selective Catalytic Reduction System               |  | Sorbent Injection System                 |   |  | Highest control efficiency averages for 2015 to 2019  |
| Gibson       | 051       | 00013     | 1       | Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization System (2007) | 98.47                                  | Selective Catalytic Reduction System (2005)  | 81.00                                  | SO <sub>3</sub> Mitigation System        |   | Mercury re-emission chemical injection system (2015), Calcium Bromide (2015) | Control efficiencies calculated. Shut Down in 2038  |
|              |           |           | 2       | Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization System (2007) | 98.03                                  | Selective Catalytic Reduction System (2002)  | 81.00                                  | SO <sub>3</sub> Mitigation System        |   | Mercury re-emission chemical injection system (2015), Calcium Bromide (2015) | Control efficiencies calculated. Shut Down in 2038  |
|              |           |           | 3       | Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization System (2006) | 98.61                                  | Selective Catalytic Reduction System (2002)  | 84.00                                  | SO <sub>3</sub> Mitigation System        |   | Mercury re-emission chemical injection system (2015), Calcium Bromide (2015) | Control efficiencies calculated. Shut Down in 2034  |
|              |           |           | 4       | Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization System (1994) | 96.32                                  | Selective Catalytic Reduction System (2003)  | 88.00                                  | SO <sub>3</sub> Mitigation System        |   | Calcium Bromide (2015)   | Control efficiencies calculated. Shut Down in 2026  |
|              |           |           | 5       | Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization System (1982) | 93.66                                  | Selective Catalytic Reduction System (2004)  | 85.00                                  | SO <sub>3</sub> Mitigation System        |   | Mercury re-emission chemical injection system (2015), Calcium Bromide (2015) | Control efficiencies calculated. Shut Down in 2034  |

Table 8 Indiana Coal-Fired Electric Generating Units Controls, Control Efficiencies and Shutdowns

| Source Name       | County ID | Source ID | Unit ID | PM Control(s)  | SO <sub>2</sub> Control(s)                                   | SO <sub>2</sub> Control Efficiency (%) | NO <sub>x</sub> Control(s)  | NO <sub>x</sub> Control Efficiency (%) | SO <sub>3</sub> Control(s)                      | H <sub>2</sub> SO <sub>4</sub> Control(s) | Hg Control(s)                            | Comments   |
|-------------------|-----------|-----------|---------|--|--|--|---|--|---|---|--|--|
| Merom             | 153       | 00005     | 1SG1    | Cold-side Electrostatic Precipitator                 | Wet Limestone Fluidized-Gas Desulfurization System           | 98.30                                  | Selective Catalytic Reduction System/Low NO <sub>x</sub> Burner Technology w/ Overfire Air  | 90.00                                  | SO <sub>3</sub> Mitigation System               |   | Activated Carbon Injection System (2015) | Highest control efficiency averages for 2015 to 2019. Shutdown in 2023   |
|                   |           |           | 2SG1    | Cold-side Electrostatic Precipitator                 | Wet Limestone Fluidized-Gas Desulfurization System           | 98.50                                  | Selective Catalytic Reduction System/Low NO <sub>x</sub> Burner Technology w/ Overfire Air  | 90.80                                  | SO <sub>3</sub> Mitigation System               |   | Activated Carbon Injection System (2015) | Control efficiency averages for 2015 to 2019. Shutdown in 2023   |
| Michigan City     | 091       | 00021     | 12      | Baghouse (2015)                                      | Fluidized-Gas Desulfurization                                | 84.38                                  | Overfire Air - Selective Catalytic Reduction System   | 91.61                                  |   |   | Activated Carbon Injection System (2015) | Shut Down in 2028; Highest control efficiency averages for 2016 to 2019  |
| Petersburg        | 125       | 00002     | 1       | Cold-side Electrostatic Precipitator                 | Wet Limestone Fluidized-Gas Desulfurization (1996)           | 97-99                                  | Low NO <sub>x</sub> Burner Technology w/ Closed-coupled Separated OFA (1995)  |  | Sodium based solution (SBS) injection (2015)    |   | Activated Carbon Injection System (2015) | Highest control efficiency rough estimate provided by source. Unit shut down planned for July 2021   |
|                   |           |           | 2       | Baghouse (2015)                                      | Wet Limestone Fluidized-Gas Desulfurization (1996)           | 95-99                                  | Low NO <sub>x</sub> Burner Technology w/ Closed-coupled Separated OFA (1994) Selective Catalytic Reduction System (2004)  |  |   |   | Activated Carbon Injection System (2015) | Control efficiency rough estimate provided by source. Unit shut down planned for July 2023   |
|                   |           |           | 3       | Baghouse (2016)/Cold-side Electrostatic Precipitator | Wet Limestone Fluidized-Gas Desulfurization upgraded in 2006 | 94-97                                  | Selective Catalytic Reduction System (2004)/ Overfire Air OFA   | 70-85                                  |   |   | Activated Carbon Injection System (2016) | Highest control efficiency rough estimates provided by source.   |
|                   |           |           | 4       | Cold-side Electrostatic Precipitator                 | Wet Limestone Fluidized-Gas Desulfurization upgraded in 2011 | 96-97                                  | TFS Low NO <sub>x</sub> Burner Technology w/ Closed-coupled Separated OFA (2001)/ Overfire Air OFA  | 70-85                                  |   |   | Activated Carbon Injection System (2016) | Highest control efficiency rough estimates provided by source.   |
| R Gallagher       | 043       | 00004     | 2       | Baghouse (2007)                                      | Dry Sorbent Injection System (2010)                          | 45.66                                  | Low NO <sub>x</sub> Burner Technology w/ Overfire Air   | 45.66                                  |   |   |  | Control efficiencies calculated. Shut Down in 06/01/2021   |
|                   |           |           | 4       | Baghouse (2008)                                      | Dry Sorbent Injection System (2010)                          | 48.35                                  | Low NO <sub>x</sub> Burner Technology w/ Overfire Air   | 48.35                                  |   |   |  | Control efficiencies calculated. Shut Down in 06/01/2021   |
| R M Schahfer      | 073       | 00008     | 14      | Cold-side Electrostatic Precipitator                 | Fluidized-Gas Desulfurization System (2013)                  | 99.07                                  | Overfire Air Selective Catalytic Reduction System   | 85.24                                  |   | Reagent Injection System                  | Activated Carbon Injection System (2014) | Shut Down in 06/01/2021; Highest control efficiency average for 2015-2019; NOx control efficiency average for 2016-2019  |
|                   |           |           | 15      | Cold-side Electrostatic Precipitator                 | Fluidized-Gas Desulfurization System (2014)                  | 98.1                                   | Low NO <sub>x</sub> Burner Technology (Dry Bottom only) (2009)/Selective Non-Catalytic Reduction System   |  |   | Reagent Injection System                  | Activated Carbon Injection System (2014) | Shut Down in 06/01/2021; Highest control efficiency average for 2015-2019  |
|                   |           |           | 17      | Cold-side Electrostatic Precipitator                 | Wet Limestone Fluidized-Gas Desulfurization (2010)           | 99.14                                  | Low NO <sub>x</sub> Burner Technology w/ Closed-coupled Separated OFA   |  |   |   |  | Shut Down in 2023; Highest control efficiency average for 2015-2019  |
|                   |           |           | 18      | Cold-side Electrostatic Precipitator                 | Wet Limestone Fluidized-Gas Desulfurization (2009)           | 99.25                                  | Low NO <sub>x</sub> Burner Technology w/ Closed-coupled Separated OFA   |  |   |   |  | Shut Down in 2023; Highest control efficiency average for 2015-2019  |
| Rockport          | 147       | 00020     | MB1     | Cold-side Electrostatic Precipitator                 | Enhanced DSI System (2020), DSI System (2015)                | 48.00                                  | Low NO <sub>x</sub> Burner Technology (Dry Bottom only) and Overfire Air Selective Catalytic Reduction System   | 57.00                                  |   | Activated Carbon Injection System         |  | Plant-wide SO <sub>2</sub> cap = 10,000 tpy, SO <sub>2</sub> rate = 0.15 #/MMBtu, NOx rate = 0.090#/MMBtu, Shut Down in 2028; Highest control efficiency average for 2016-2020 (for DSI prior to enhancement)*   |
|                   |           |           | MB2     | Cold-side Electrostatic Precipitator                 | Enhanced DSI System (2020), DSI System (2015)                | 48.00                                  | Low NO <sub>x</sub> Burner Technology (Dry Bottom only) and Overfire Air Selective Catalytic Reduction System   | 61.00                                  |   | Activated Carbon Injection System         |  | Plant-wide SO <sub>2</sub> cap = 10,000 tpy, After 2028 SO <sub>2</sub> cap = 5,000 tpy; SO <sub>2</sub> rate = 0.15 #/MMBtu, NOx rate = 0.090 #/MMBtu; IRP states lease expiration with AEP in 2022 but unit will continue to operate; Highest control efficiency average for 2016-2020 (for DSI prior to enhancement)* |
| Whitewater Valley | 177       | 00009     | 1       | Cold-side Electrostatic Precipitator/ Baghouse       |  |  | Low NO <sub>x</sub> Burner Technology (Dry Bottom only)/Ammonia Injection Overfire Air (2004)/Selective Non-Catalytic Reduction System/Shared Dry Sorbent Injection System (2015) |  | Shared Activated Carbon Injection System (2015) |   |  |  |
|                   |           |           | 2       | Cold-side Electrostatic Precipitator/ Baghouse       |  |  | Low NO <sub>x</sub> Burner Technology w/ Separated/Ammonia Injection Overfire Air (2003)/Selective Non-Catalytic Reduction/Shared Dry Sorbent Injection System (2015)             |  |   |   |  |  |

\*The SCRs were in service for part of the historic record period with the Unit 1 SCR in full operation for 2018 - 2020 and the Unit 2 SCR in full operation for part of 2020