

REPORT

Comparison of Criteria Emissions from O’Hare Airport Aircraft to Those of Electric Power Generating Plants.

R.E.Ruthenberg 7/28/02

Yearly emission information¹ for electric power generation/transmission/distribution facilities is compiled below for several “criteria pollutants.”² This data is compared to the yearly emissions of a major airport, Chicago’s O’Hare, and it is shown that the airport emissions significantly exceed those from a typical power plant, even without including emissions from airport ground-based operations (heating plants, fueling operations, maintenance, incinerators, etc.) and vehicles associated with arriving/departing vehicular traffic (e.g. automobiles, large trucks, taxis, parking lots, delivery trucks, trains, etc.), both on and off airport property.³ Aircraft emissions also are greater than or in the same range as area sources such as steel companies (blast furnaces) and oil refineries.

Whereas power plants, blast furnace operations and refineries are defined as “major sources” of air pollution and must adhere to rigorous EPA permitting processes to initiate and/or modify emissions levels, airports’ concentrated aircraft operations are not so regulated, allowing substantial expansions of such emissions without permit.

Table 1 Emissions Data Comparisons Tons per Year per Facility

Facility	NOx	VOC	CO	PM2.5	SO2
U.S. Average Power Plant Facility	4279	40	328.4	111	10,134
Illinois Average Power Plant Facility	4077	18.6	167.5	56.9	10843
Cook Cnty, "Com Ed - Crawford Station"	3153	27	218	124	6716
Cook Cnty, "Com Ed - Fisk Station"	2394	26	166	48	4310
O'Hare Airport, aircraft only	5504	1850	6796	?	?

Table 2 U.S. Total Pollutant Emissions for
S.I.C. 4911, Electric Power Generation, Transmission and Distribution

Pollutant	Tons/Year	Number of Facilities	Average Tons/yr./facility	U.S. Total Tons/Year
NOx	5,789,099	1353	4279	9,037,572
VOC	54,727	1369	40	2,061,167
CO	436,151	1328	328.4	5,307,982
PM2.5	141,002	1271	111	673,288
SO2	12,667,567	1250	10,134	16,295,268

Table 3 Illinois Total Pollutant Emissions for
S.I.C. 4911, Electric Power Generation, Transmission and Distribution

Pollutant	Tons/Year	Number of Facilities	Average Tons/yr./facility	Illinois Total Tons/Year
NOx	277,212	68	4077	415,211
VOC	1750	94	18.6	152,997
CO	11,390	68	167.5	137,688
PM2.5	3981	70	56.9	49,740
SO2	715,691	66	10,843	974,837

¹ Reference USEPA AIRSDATA. All figures are for 1999.

² “Criteria pollutants” are dangerous to health but not yet defined to be carcinogenic. The USEPA has set criteria levels for such pollutants, including nitrous oxides (NOx), volatile organic compounds (VOC), carbon monoxide (CO), 2.5 and 10 micron particulate matter (PM2.5, PM10) and sulphur dioxide (SO2).

³ The Illinois EPA (M. Gade, 9/96) estimated O’Hare VOC emissions levels to be 197, 365 and 1460 tons-per-year for stationary sources, area/mobile ground sources and related on-road vehicles, respectively.

Table 4 NOx Cook County "Top Ten" Polluters

Emissions T/yr	%	Name	Address	Industry Type (SIC)	Facility ID	Lat	Long	Region
4576	11.60	"Acme Steel Company"	"13500 Perry Ave. Riverdale Il 606271182"	"3312 - Blast Furnaces And Steel Mills"	"170310823"	41.6556	-87.6258	"5"
4504	11.41	"Best Foods - Div. Of C P C Int'L Inc."	"6400 Archer Road Bedford Park Il 605010345"	"2046 - Wet Corn Milling"	"170310078"	41.7758	-87.8206	"5"
3153	7.99	"Com Ed - Crawford Station"	"3501 S. Pulaski Road Chicago Il 60623"	"4911 - Electric Services"	"170311216"	41.8289	-87.7236	"5"
2599	6.58	"Acme Packaging Corporation"	"13500 South Perry Ave. Riverdale Il 60627"	"9999 - Nonclassifiable Establishments"	"170312571"	41.6331	-87.6328	"5"
2394	6.07	"Com Ed - Fisk Station"	"1111 W. Cermak Chicago Il 60608"	"4911 - Electric Services"	"170311223"	41.8489	-87.6528	"5"
1338	3.39	"Clark Oil & Refining Corporation"	"131st And Kedzie Avenue Blue Island Il 60406"	"2911 - Petroleum Refining"	"170312448"	41.6558	-87.6989	"5"
941	2.38	"Marblehead Lime Co."	"3245 E 103rd St Chicago Il 60617"	"3274 - Lime"	"170311189"	41.7081	-87.5650	"5"
867	2.20	"University Of Chicago"	"5801 South Ellis Ave Chicago Il 60637"	"8221 - Colleges And Universities Nec"	"170312342"	41.7825	-87.5897	"5"
867	2.20	"Alsip Paper Condominium Assoc."	"13101 South Pulaski Road Alsip Il 60658"	"9999 - Nonclassifiable Establishments"	"170312604"	41.6703	-87.7375	"5"
737	1.87	"Ltv Steel Company Inc. (Republic)"	"11600 South Burley Avenue Chicago Il 60617"	"3312 - Blast Furnaces And Steel Mills"	"170311221"	41.6803	-87.5456	"5"

Table 5 VOC's Cook County "Top Ten" Polluters

Emissions T/yr	%	Name	Address	Industry Type (SIC)	Facility ID	Lat	Long	Region
9272	19.26	"Acme Steel Company"	"13500 Perry Ave. Riverdale Il 606271182"	"3312 - Blast Furnaces And Steel Mills"	"170310823"	41.6556	-87.6258	"5"
2768	5.75	"3m Industrial Tape"	"6850 S. Harlem Bedford Park Il 60501"	"2672 - Paper Coated And Laminated Nec"	"170310074"	41.7672	-87.8061	"5"

2212	4.59	"Ltv Steel Company Inc. (Republic)"	"11600 South Burley Avenue Chicago Il 60617"	"3312 - Blast Furnaces And Steel Mills"	"170311221"	41.6803	-87.5456	"5"
1733	3.60	"Fleischmann Vinegar Company"	"4801 S. Oakley Ave Chicago Il 60609"	"2099 - Food Preparations Nec"	"170311209"	41.8000	-87.7089	"5"
1386	2.88	"R R Donnelley & Sons Co"	"350 E 22nd St Chicago Il 60616"	"2754 - Commercial Printing Gravure"	"170311335"	41.8528	-87.6217	"5"
1035	2.15	"General Motors - Electro-Motive Div Plt1"	"9301 W.55th St. McCook Il 60525"	"3743 - Railroad Equipment"	"170310598"	41.7972	-87.8522	"5"
983	2.04	"Van Leer Containers Inc"	"4300 W 130th St Alsip Il 60658"	"3412 - Metal Barrels Drums & Pails"	"170310009"	41.6547	-87.7253	"5"
856	1.78	"Sealed Air Corp.-Packaging Division"	"7110 Santa Fe Drive Hodgkins Il 60525"	"3089 - Plastics Products Nec"	"170310551"	41.7728	-87.8747	"5"
843	1.75	"Viskase Corporation"	"6733 West 65th Street Bedford Park Il 60638"	"9999 - Nonclassifiable Establishments"	"170310080"	41.7725	-87.7844	"5"
817	1.70	"Clark Oil & Refining Corporation"	"131st And Kedzie Avenue Blue Island Il 60406"	"2911 - Petroleum Refining"	"170312448"	41.6558	-87.6989	"5"

Table 6 CO Cook County "Top 13" Polluters

Emissions T/yr	%	Name	Address	Industry Type (SIC)	Facility ID	Lat	Long	Region
49128	66.95	"Acme Steel Company"	"13500 Perry Ave. Riverdale Il 606271182"	"3312 - Blast Furnaces And Steel Mills"	"170310823"	41.6556	-87.6258	"5"
16000	21.81	"Koppers Industries Inc"	"3900 S.Laramie Ave. Stickney Il 60650"	"2865 - Cyclic Crudes And Intermediate"	"170310983"	41.8122	-87.7511	"5"
728	0.99	"Calumet Steel Company"	"380 East Joe Orr Road Chicago Heights Il 60411"	"3316 - Cold Finishing Of Steel Shapes"	"170310213"	41.5186	-87.6197	"5"

672	0.92	"Marblehead Lime Co."	"3245 E 103rd St Chicago II 60617"	"3274 - Lime"	"170311189"	41.7081	-87.5650	"5"
614	0.84	"A Finkl & Sons Co."	"2011 N Southport Ave Chicago II 606144079"	"3462 - Iron And Steel Forgings"	"170311255"	41.9164	-87.6619	"5"
418	0.57	"Ltv Steel Company Inc. (Republic)"	"11600 South Burley Avenue Chicago II 60617"	"3312 - Blast Furnaces And Steel Mills"	"170311221"	41.6803	-87.5456	"5"
312	0.42	"Vulcan Matls -Lime Plant #540"	"Joliet Road & 53rd Street McCook II 60525"	"3274 - Lime"	"170310603"	41.7939	-87.8364	"5"
252	0.34	"Best Foods - Div. Of C P C Int'L Inc."	"6400 Archer Road Bedford Park II 605010345"	"2046 - Wet Corn Milling"	"170310078"	41.7758	-87.8206	"5"
228	0.31	"Lake Landfill"	"1300 Willow Road Northbrook II 60062"	"4953 - Refuse Systems"	"170312408"	42.1058	-87.8142	"5"
218	0.30	"Com Ed - Crawford Station"	"3501 S. Pulaski Road Chicago II 60623"	"4911 - Electric Services"	"170311216"	41.8289	-87.7236	"5"
195	0.27	"Clark Oil & Refining Corporation"	"131st And Kedzie Avenue Blue Island II 60406"	"2911 - Petroleum Refining"	"170312448"	41.6558	-87.6989	"5"
166	0.23	"Com Ed - Fisk Station"	"1111 W. Cermak Chicago II 60608"	"4911 - Electric Services"	"170311223"	41.8489	-87.6528	"5"
139	0.19	"U S Steel - South Works"	"3426 E. 89th St. Chicago II 60617"	"3312 - Blast Furnaces And Steel Mills"	"170311219"	41.7378	-87.5386	"5"

**Nox, VOC's and CO Pollution Emissions Comparison
O'Hare Airport* vs. Electric Generating Plants**

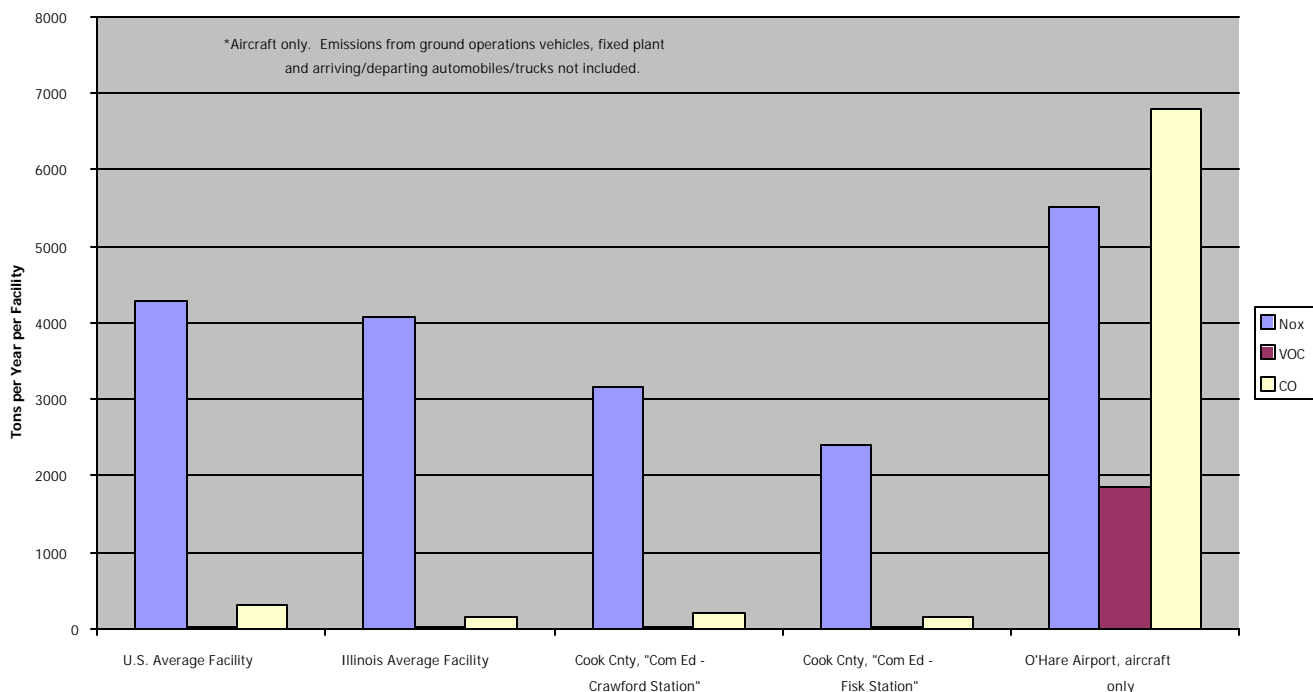


Figure 1

SUMMARY and CONCLUSIONS

An EPA defined “major source” of pollution is generally one with less than 250 tons-per-year of emissions, if located in “attainment” areas (air quality meets EPA standards) and less than 100 tons per year if located in “non-attainment” areas. Major sources must adhere to rigorous EPA permitting processes in order to exist or modify emissions significantly.

Information extracted from tables 2-6, consolidated into table 1 and plotted in figure 1 clearly show that on a facility basis, O’Hare aircraft have significantly greater NOx, VOC and CO emissions than do typical electric generating plants, whether defined as typical within the entire U.S. or within Illinois or just Cook County. O’Hare aircraft VOC emissions are greater than those from all of Illinois power plants combined while CO emissions are as high as 60% of the amount from all of these plants combined. Comparisons of PM2.5 and SO2 emissions are not made, as the EPA does not publish such information for aircraft.

O’Hare aircraft-only emissions greatly exceed USEPA major source regulatory levels by factors of between 7-70X. Airport ground/vehicular operations alone exceed major source regulation levels and could potentially at least double the overall totals.

O’Hare aircraft-only NOx emissions exceed that of Acme Steel Company’s blast furnace operation in Cook County; VOC emissions are double the Clark Oil refinery (now shuttered as an excessive polluter); and O’Hare aircraft are the third highest CO emitter in Cook County. But yet they are not regulated as a major pollution emissions source.
