

Paper: “Revisiting the power plant concentration in the Lower Ohio Valley”

The Ohio River divides southern Indiana from northern Kentucky in a jagged line, and the shores of both states rise up in dramatic bluffs. In the flatland along the Ohio River, not far from right here in Louisville sits a small city named Madison. In the early-to-mid 19th century, Madison’s commercial markets challenged those of Louisville and Cincinnati, but today the city is best known for its immaculately maintained 19th century buildings.¹ With 133 blocks of the city a National Historic Landmark District, Madison is an anomaly among sleepy river cities.² Another distinguishing marker in Madison is the Clifty Creek Power Plant, a mid-20th century coal-fired power plant sitting just west of downtown Madison. Though Clifty Creek adds an industrial presence to the otherwise small town and rural landscape in this section of the Ohio River, had circumstances been slightly different, this might be an industrial region briefly interrupted by a small, historic city.

In the 1970s, Madison residents found themselves in the center of a plan to better utilize this section of the Ohio River for energy production. This followed a post-World War II wave of building. In the late 1940s and 1950s, utilities built huge generating stations along the Ohio and its tributaries, fueled by regional Appalachian and Midwestern coal reserves. Unlike most Ohio River plants, Clifty Creek and its sister plant in Ohio, Kyger Creek, provided most of their generating capacity to the Portsmouth Gaseous Diffusion Plant in rural southern Ohio. Clifty and Kyger Creek provided national security by powering the gaseous diffusion plant and directly contributing to the enrichment of uranium for use in weapons in the 1950s, and from 1965 to the early 21st century, they helped power uranium enrichment for use in nuclear power plants. While

¹ For an account of Madison’s early success, see: Donald H. Zimmer, *Madison, Indiana, 1811-1860: A Study in the Process of City Building* (PhD diss., Indiana University, 1974).

² “Madison Historic District,” National Park Service, http://www.nps.gov/nr/travel/madison/madison_historic_district.html.

population growth and industrial growth slowed, the utilities continued to project increased energy usage across the U.S. and in the area served by the Ohio Valley. Instability around oil in the 1970s bolstered coal.³ While nuclear power likewise provided a worthy competitor, the expense and construction time of nuclear power plants had not yet made coal obsolete.

In the 1970s, between Louisville and Cincinnati, utilities made plans for nine power plants, with all coal save one nuclear project. This matched the activity in other areas of the Ohio Valley, such as southeastern Ohio, where by 1982, in one 15-mile stretch, four different coal-fired power plants operated. In the Madison area, Louisville Gas & Electric, American Electric Power (AEP), Cincinnati Gas & Electric, Dayton Power & Light, and Kentucky Utilities all planned coal-fired units, while Public Service Indiana and Northern Indiana Public Service Company jointly planned a nuclear power plant, Marble Hill, west of the small university town of Hanover, Indiana.

The Ohio River provided the water and transit for coal power, but many locals resented the use of the river for industrial growth. In Madison, historic preservation activists, environmental activists, concerned local citizens, and others began to organize in response to the coal-fired power plant projects. In 1974, the “Committee for the Preservation of Hunter’s Bottom,” organized against a planned AEP power plant set for a rural stretch of Kentucky across from Madison.⁴ They focused on the actions of Kentucky Congressman Gene Snyder, who also acted as AEP’s real estate agent and acquired properties for the future plant.⁵ This group soon became Save The Valley. AEP, then a New York-based holding company, owned several

³ For a discussion of the Ohio River’s industrial contributions and the influence of the oil crisis to the Ohio River, see: Boyd J. Keenan, “An Ecopolitical System of Global Significance,” in *Always a River: The Ohio River and the American Experience*, ed. by Robert L. Reid (Bloomington: Indiana University Press, 1991), 218.

⁴ They were joined in support by Historic Madison, Incorporated, Madison’s local historic preservation group. “HMI asks AEP to forget Hunter’s Bottom,” *Madison Courier*, April 1, 1974, 1 and “Washington trip strengthened Save the Valley’s case: Slover,” *Madison Courier*, September 25, 1974, 1.

⁵ “Hunter’s Bottom group sends AEP another letter,” *Madison Courier*, April 12, 1974, 1.

sponsoring companies invested in Clifty Creek, and its subsidiaries operated a number of plants in the Valley. Locals worked to prevent AEP expansion in the area.

Save The Valley activists enjoyed a combination of growing public support for the environment as well as federal regulations of air pollution. State-level air pollution commissions were established in the late 1960s, and in the early 1970s the federal government established more stringent air pollution rules through the development of the Environmental Protection Agency (EPA). This included the development of State Implementation Plans (SIP), better adherence to National Ambient Air Quality Standards (NAAQS), and reductions on lead, sulfur dioxide, nitrogen oxide, and particulates.⁶ Despite the wave of new rules, fighting power plant growth in the Valley remained a difficult task.

Though power plants themselves created concerns, Madison residents also feared industrial growth brought by available energy—and that their rural region would become more like the heavily industrialized Upper and Mid-Ohio Valley.⁷ This region featured steel mills, metallurgical plants, plastics and polymers, and chemical plants, and areas of the Valley near Steubenville, Ohio, Marietta, Ohio and Parkersburg, West Virginia, had some of the worst air quality in the region despite being relatively small population centers. Save The Valley valued the tri-state region's rural land, and members argued “a concentration of plants demonstrates poor utility planning and indicates a lack of concern for residents who have owned land for generations in this scenic valley.”⁸ Local Madison boosters aggressively pursued industrial development in the wake of Clifty Creek's construction, but the city never became an industrial center. Madison residents benefitted from local planners' foresight, as much of Madison's

⁶ “Summary of the Clean Air Act,” Environmental Protection Agency, <http://www2.epa.gov/laws-regulations/summary-clean-air-act>.

⁷ *STV Forum: The Official Newsletter of Save The Valley* 3, no. 2, December 1976. Madison-Jefferson County Public Library, Save The Valley Records, Local History.

⁸ “Save Our Valley Group Bracing For Big Battle,” *Trimble Banner Democrat*, June 27, 1974.

industries grew in an area north of the town, annexed in the 1950s, called North Madison. This contrasted vividly with areas of the Upper Valley, where steel mills and heavy industry lined the Ohio banks.

The region around Madison lacked the concentrated industrial corridors of the Upper Ohio Valley, and Madison itself benefitted from the building of its main street and central business and housing districts up the banks of the river. Much of the flood damage to downtown Madison had eliminated riverside manufacturing sites, and not altered the original downtown.⁹ In addition, a local historic preservation group, Historic Madison, Inc., led the charge for local preservation of the brick buildings in downtown Madison. HMI supported STV's fight against the power plant concentration, and the group's contribution to renovating Madison's buildings meant tourism was a legitimate reason to fight Ohio River development.¹⁰

Madison's environmental movement intersected with its historic preservation movement, and Madison's identity characterized the regional anti-power plant movement. In fact, Madison's activists spurred an Environmental Protection Agency study of the power plant "concentration," the Ohio River Basin Energy Study (ORBES). Activists lobbied Indiana Senator Birch Bayh, who helped them access federal officials.¹¹ The ORBES team looked at the Valley in a time of crossroads, in the wake of the "Arab oil embargo," with the initial push coming from citizens and the Senate Appropriations Committee.¹² ORBES focused on the development of "scenarios" of

⁹ Camille Fife-Salmon and Ron Grimes with Janice Barnes and Bob Thomas, *Madison on the Ohio, 1809-2009: Remembering Two Hundred Years* (Virginia Beach: Donning Company Publishers, 2009), 93-94, 121.

¹⁰ "Save Our Valley Group Bracing For Big Battle," *Trimble Banner Democrat*, June 27, 1974.

¹¹ "Delegation to visit Washington Sept. 19-20," *Madison Courier*, September 12, 1974. James J. Stukel and Boyd J. Keenan. *ORBES Phase I: Interim Findings; Interagency Energy-Environment Research and Development Program Report*, EPA-600/7-77-120. Washington, D.C.: U.S. Environmental Protection Agency, 1977.

¹² United States Environmental Protection Agency, "Project Summary: Ohio River Basin Energy Study (ORBES)," May 1981.

development, and researchers noted the region's reliance on coal and in 1977 that "11 ORBES-region counties violated national ambient air quality standards."¹³

Save The Valley used a variety of means to fight the power plants, including academic, political, legal, NIMBY, and social means. They pushed utilities to adhere to recently passed laws, including pressing LG&E to submit an Environmental Impact Statement for its planned coal plant at Wise's Landing, Kentucky. By August 1974, the group reportedly "hired a Washington, D.C., law firm to help it with the battle" over a power plant concentration.¹⁴ The small town environmental group had access to expertise. Harold Cassidy, a professor emeritus in chemistry from Yale, relocated to the Hanover area and contributed knowledge and writing to Save The Valley. They had a regular newsletter, appeared regularly in the local *Madison Courier*, and Cassidy himself compiled "white papers" on various issues facing the region. Save The Valley, in its newsletter, pushed for power plants to be located elsewhere (West Virginia, where they noted members of the legislature wanted the power plants), addressed renewable energy and alternative methods of production, and kept members apprised of community matters.¹⁵

While Save The Valley dominated the local environmental movement, it was one of a number of environmental groups concerned about the power plant concentration. The Audubon Society, Sierra Club, and Paddlewheel Alliance all fought against further power plant expansion in the region. Writer Wendell Berry, then "chairman of the Cumberland Sierra Club chapter," visited Madison in 1976 to confer with STV.¹⁶ Berry also protested against the Marble Hill

¹³ United States Environmental Protection Agency, "Project Summary: Ohio River Basin Energy Study (ORBES)," May 1981.

¹⁴ "Save the Valley gets okay to fight LG&E Milton plant," *Madison Courier*, August 22, 1974.

¹⁵ *STV Forum: The Official Newsletter of Save The Valley* 3, no. 2, December 1976. Madison-Jefferson County Public Library, Save The Valley Records, Local History.

¹⁶ *STV Forum: The Official Newsletter of Save The Valley* 3, no. 1, October 1976. Madison-Jefferson County Public Library, Save The Valley Records, Local History.

Nuclear Generating Station in 1978, and the Paddlewheel Alliance staged a “die-in” to protest Marble Hill.¹⁷ The Paddlewheel Alliance, as well as Greenpeace, provided a more gonzo environmentalism to the anti-power plant movement, while Save The Valley pursued similar ecological and spiritual goals through legal and political channels. The diversity of environmentalism in this rural section of the Valley defied expectations that urban populations were necessary for successful environmental movements.

Unlike the utilities that projected endless amounts of electricity used in the U.S., Save The Valley emphasized the general decline of the Ohio Valley region and U.S. north. They argued that the energy produced along the Ohio River was not needed, and that utilities were being economically wasteful as well as polluting the environment. This further characterized this movement as small town environmentalism. Rather than speaking as Madison boosters had in the 1950s of endless industrial growth tied to Clifty Creek, STV and local allies emphasized a more deliberate and specific type of economic and industrial growth. Clifty Creek’s pollution in town drove much of the activism, and rather than an anti-business movement, it spurred a more directed, pro-community success and pro-environment movement. In January 1977, STV member Robert Gray said: “We’re trying to point the way to clean, high level per plant employment industry.”¹⁸ Save The Valley disparaged the “Ruhr Valley” identity of the Ohio Valley, while still pushing for economic growth.¹⁹ While a fairly typical sentiment today, this defied decades of actions in the Ohio Valley to push coal-fueled industry.

¹⁷ “MARBLE HILL: August 6 CITIZENS GROUP PROTESTS MARBLE HILL CONSTRUCTION,” *Official Newsletter of SAVE THE VALLEY, INC.* November 1978, 1. Save The Valley records, Madison-Jefferson County Public Library, Local History.

¹⁸ Greg Hoard, “PSI, Save the Valley disagree on plants near Marble Hill,” *Madison Courier*, January 8, 1977, 1.

¹⁹ Save The Valley, Inc. to undisclosed recipient, July 30, 1982. Save The Valley records, Madison-Jefferson County Public Library, Local History.

Madison activists saw the city as special, and did utilize NIMBY-ism to protect their city from development. “There must be other places where pollutants would not matter so much.” HMI president John Windle told *American Preservation* magazine.²⁰ Windle and his wife drove the preservation of Madison’s downtown beginning in the 1960s, and he had a vested interest in maintaining the city. “We have here in Madison a most unique collection of architecture nearly untouched. So we have a greater obligation than many towns up and down the road,” Windle noted in 1981.²¹ Madison’s major historic property is the James Lanier Mansion, a yellow brick estate overlooking the river. HMI rehabilitated a number of smaller properties, including a Greek Revival auditorium, Schroeder Saddle Tree Factory, and Eleutherian College near Madison.²² HMI operates properties as museums, as well. This historic preservation centered Madison’s tourism, as did the Ohio River. The river provided the stage for the yearly Madison Regatta, an unlimited hydroplane boat race. In addition, the city still holds an annual Chautauqua, a festival that revived in the 1970s in the city.²³ In 1976, one activist summed up the thoughts of an industrial Madison: “Who is going to want to go to another Gary for a vacation? And think what all of the sulfur and other pollutants from these plants will do to the area’s historic buildings.”²⁴

Residents found relief and new concerns in the new decade, as Hunter’s Bottom seemed safe, but Marble Hill decidedly unsafe. By 1980, AEP dropped plans at Hunter’s Bottom.²⁵ Residents had increasingly turned on the only “clean” power plant planned for the Valley in the late 1970s, Marble Hill, as it began to look like a greater liability than the coal plants. In the

²⁰ Janet Nyberg Paraschos, “Madison: Historic Preservation is a Fact of Life in this Indiana Town,” *American Preservation*, November-December 1979, 22.

²¹ “John Windle to resign as Historic Madison head,” *Madison Courier*, February 5, 1981.

²² “HMI work, ’76 plans outlined,” *Madison Courier*, March 18, 1976.

²³ “About the Festival,” Madison Chautauqua Festival of Art, <http://www.madisonchautauqua.com/about-festival.php>.

²⁴ “East of Milton: Power interests pay \$300,000 for Hampton farm,” *Madison Courier*, May 29, 1976, 1.

²⁵ *STV Forum: Official Newsletter of Save The Valley, Inc.* 7, No. 2., March 1980, 2. Save The Valley Records, Madison-Jefferson County Public Library, Local History.

wake of the March 1979 incident at Three Mile Island, the entire domestic nuclear power industry descended into a tailspin. Marble Hill grew to become one of the most prominent and expensive failures among the 1970s nuclear power projects. In July 1979 construction worker, Charles Cutshall, provided Save The Valley with an affidavit noting the construction inadequacies at Marble Hill, including honeycombing concrete in the containment buildings.²⁶ Cutshall's testimony spurred an investigation by the Nuclear Regulatory Commission and a shutdown in safety-based construction at the plant site. Through 1979 and the early 1980s, Marble Hill spiraled into an expensive and uncertain project, with all of its promises of a clean alternative to coal forgotten.

Marble Hill's fast crash after Three Mile Island demonstrates the differences facing the coal-fired and nuclear industries in the late 1970s and early 1980s. Though the 1977 Clean Air Act amendments exempted old plants from new standards, Clifty Creek's operator adjusted some of the plant's pollution controls. As a "clean" air measure at Clifty Creek, the Indiana-Kentucky Electric Corporation (IKEC) replaced the original smokestacks with three smokestacks reaching nearly 1,000 feet in the air. AEP and other utilities emphasized the cleaning potential of these so-called "tall stacks," which would lift emissions out of the Ohio Valley. In addition, IKEC installed electro-static precipitators to remove particulates. Madison helped to fund the pollution control measures in 1979, as it annexed the plant from the township.²⁷ Utilities including AEP fought support for the scrubber technology to remove sulfur dioxide in the 1970s, and IKEC and

²⁶ Cassidy, "White Paper XXIII Marble Hill," 3. Save The Valley Records, Madison-Jefferson County Public Library, Local History. "Former Marble Hill worker alleges faulty concrete work, cover-ups," *Madison Courier*, June 13, 1979, 1, http://news.google.com/newspapers?id=enZbAAAAIIBAJ&sjid=_1ANAAAAIIBAJ&pg=3750%2C5520428.

²⁷ Wayne Engel, "Bond okay sparked annexation: Of IKEC property by Madison," *Madison Courier*, March 31, 1979, A1, <http://news.google.com/newspapers?id=qXtbAAAAIIBAJ&sjid=7VANAAAAIIBAJ&pg=2270%2C697728>.

Ohio Valley Electric Corporation did not install scrubbers at Clifty or Kyger Creek in the 1980s.²⁸

In the 1980s, acid rain and the Ohio Valley's role in creating it became a national issue. To protest acid rain, members of Greenpeace climbed the old Clifty Creek stacks in 1981, carrying a sign protesting the power plant.²⁹ Save The Valley's attorney helped to defend the out-of-town environmentalists, who garnered attention in the news but did not make much of a dent in the local power plant proliferation.³⁰

Despite frustration with local emissions, coal power held an air of familiarity and feasibility. As ORBES noted in its local information gathering, people trusted coal more than nuclear by the late 1970s and early 1980s, and coal compounded its advantages of familiarity over nuclear with its cost-effectiveness over oil and natural gas. This trend continued in the 1980s and 1990s, but in the 21st century natural gas has become the major alternative in sections of the Ohio Valley. But, as natural gas has increased its share of the power-producing market in a number of states, including Ohio, Indiana and Kentucky have seen moderate spikes. Kentucky is the only state that has increased its reliance on coal since 2004, and still generates 93 percent of its power from coal.³¹

²⁸ For a discussion of the Clean Air Act, see: Deepa Varadarajan, "Billboards and Big Utilities: Borrowing Land-Use Concepts To Regulate 'Nonconforming' Sources Under the Clean Air Act," *The Yale Law Journal* 112 (2003): 2553-2589, accessed March 23, 2014, <http://www.yalelawjournal.org/pdf/112-8/VaradarajanFINAL.pdf>. For examples of AEP's anti-scrubber advertising, see: S. Prakash Sethi, *Advocacy advertising and large corporations: social conflict, big business image, the news media, and public policy* (Lexington, MA: Lexington Press, 1977), "Clean Air and the Scrubber," *Washington Post*, May 19, 1974, C6; "Hot vs. Clean Air," *The New York Times*, May 8, 1974, 44. E.W. Kenworthy, "Donald Cook vs. E.P.A.: Wide Open Clash Over Coal and Clean Air," *The New York Times*, November 24, 1974, 169. All newspaper articles: ProQuest.

²⁹ "Greenpeace climber is still atop IKEC stack," *Madison Courier*, February 10, 1982, 1, <http://news.google.com/newspapers?id=57IJAAAIAIBAJ&sjid=jhANAAAIAIBAJ&pg=4678%2C961367>. Bob Demaree, "One Greenpeace climber still on IKEC stack; other jailed, released," *Madison Courier*, February 9, 1982, 1, <http://news.google.com/newspapers?id=5rIJAAAIAIBAJ&sjid=jhANAAAIAIBAJ&pg=3159%2C849898>.

³⁰ Bob Demaree, "IKEC stack climber comes down; arrested," *Madison Courier*, February 11, 1982, 1, <http://news.google.com/newspapers?id=6LIJAAAIAIBAJ&sjid=jhANAAAIAIBAJ&pg=4706%2C1212704>.

³¹ Alyson Hurt, "Coal Gas, Nuclear, Hydro? How Your State Generates Power," NPR, September 10, 2015, <http://www.npr.org/2015/09/10/319535020/coal-gas-nuclear-hydro-how-your-state-generates-power>.

Displacing coal with nuclear died in Indiana and Kentucky in the 1980s. In early 1984, PSI canceled the Marble Hill Nuclear Generating Station at a price of \$2.5 billion.³² The abrupt cancelation decimated local employment, and left Madison reeling from the impact. As this was the only new power plant zoned in Madison's Jefferson County, it affected local property taxes. While ratepayers avoided paying out for a completed Marble Hill, the loss of such a valuable taxpayer closed some doors for Jefferson County and the plant's nearby Southwestern Local School District.

The power plant concentration in the Ohio Valley did not materialize quite as locals feared. ORBES, Save the Valley, Greenpeace, and other local and regional actors influenced the changes underway but did not stop them. Utilities built plants in Indiana and Kentucky and older plants also continued to operate. Major victories in dismantling air pollution problems took another decade for policy—the 1990 Clean Air Act Amendments, and years after for implementation. Though not a thoroughly successful environmental movement, the activism centered in Madison demonstrated the viability of a small town environmental movement in an industrial valley. Power plants in the Ohio Valley are set to decommission in the wake of the more stringent air pollution targets announced by President Barack Obama, including the mid-20th century Tanners' Creek Plant in Indiana. Clifty Creek today operates with selective catalytic reduction (SCR) and scrubbers, and plants across the Valley have backed away from the use of high sulfur coal. Clifty Creek continues to struggle to meet certain air quality standards.³³ In its 60th birthday year, Clifty Creek's future is less certain.

³² Jesus Rangel, "Half-Built Indiana Nuclear Plant Abandoned at a \$2.5 Billion Cost," *The New York Times*, January 17, 1984, A1, <http://www.nytimes.com/1984/01/17/us/half-built-indiana-nuclear-plant-abandoned-at-a-2.5-billion-cost.html>.

³³ The plant has completed a number of air pollution control projects. See: "Clifty Creek Generating Station," OVEC/IKEC, <http://www.ovec.com/Clifty.php> and "Report: Indiana air quality improving: IDEM Study cites progress over 30 years," *Madison Courier*, July 14, 2012, <http://madisoncourier.com/Content/News/Switzerland-County/Article/Report-Indiana-air-quality-improving/178/287/70928>.