

Chapter 8 – MPPA Today and Tomorrow

A milestone in the history of MPPA took place on November 25, 2002. At a clearing in the woods three miles south of Kalkaska and just off U.S. Highway 131, the low rumble of a natural gas-fired combustion turbine throttled into commercial operation on the Monday of Thanksgiving week. The Kalkaska Combustion Turbine project marked the beginning of a new era for MPPA. The first project entirely built, financed, owned and operated by MPPA, the Kalkaska Combustion Turbine represented a true evolution of the Agency's mission.¹

Always before, MPPA essentially had acted as a broker of generation and transmission services, buying shares in base-load electric generating units from Michigan's private utilities and purchasing transmission rights from others to move blocks of power to members. With the completion of the Kalkaska Combustion Turbine project, MPPA had become the sole owner of generating assets it had planned, financed and built.

Five of the Agency's members participated in the path finding project. Charlevoix, Harbor Springs, Lowell, Petoskey and Traverse City, all of which had been partners in Campbell Unit No. 3 for more than 20 years, had formed the Kalkaska venture in August 2001. MPPA borrowed slightly more than \$34.6 million over a 25-year term to finance the project, at an annualized debt cost of \$2.55 million.²

The Kalkaska Combustion Turbine was a large and complex undertaking. Located in an industrial setting purchased from Shell Oil Company, the development provided a near ideal mix of isolation and access. Sited a quarter-mile from the nearest road, the Kalkaska Combustion Turbine still enjoys easy access to three major highways, all located within a two-mile radius of the site. Nearby is a natural gas-processing facility jointly operated by Shell Oil Company and DTE Energy.

The Pratt & Whitney FT-8 turbine was installed during the summer of 2002 and tested during the fall. The unit was designed with a single electrical generator located between two aero-derivative turbines, fundamentally two jet engines harnessed to generate electricity. The design provided a heat rate of 9,300 BTU/kilowatt-hours and had a capacity of nearly 55 megawatts. Existing environmental restrictions constrained the Kalkaska unit to approximately 1,000 hours of operation per year at full output. The participants, all members of MPPA's power pool project, planned to utilize the combustion turbine as a peaking resource at times of high electric power demand.³

MPPA arranged with Traverse City Light & Power to handle daily oversight and maintenance of the Kalkaska facility. The Traverse City municipal utility set up a remote control panel at its 24-hour dispatch center to duplicate the computerized controls at the combustion turbine site. The remote control panel at Traverse City Light & Power allowed continuous monitoring and control as well as remote start-up of the generating unit.⁴

Generation for the Future

The success of MPPA's first combustion turbine project promised to be duplicated in the future. MPPA's power pool capacity in 2003 included 870 megawatts of generation, capable of supplying 750 megawatts of load under economic dispatch. Dan Cooper, MPPA's director of engineering, explained that the power pool's resources included 203 megawatts of capacity entitlements in the coal-fired Campbell and Belle River projects, 48 megawatts of capacity entitlement in the gas-fired Kalkaska Combustion Turbine project, 564 megawatts of capacity in coal-fired resources owned by the pool participants themselves, and an additional 48 megawatts of capacity in gas or oil-fired resources owned by the pool participants.⁵

Cooper pointed out that the pool would continue "active buying and selling of capacity and energy on the wholesale market to enhance the pool's economics."⁶ He noted that the power pool's budget in 2003 was \$38 million, but he added that the calculation of hourly energy costs and the rendering of bills for internal and external power pool transactions kept costs to bare minimum levels for power pool participants.

By 2003, the city of Wyandotte had begun to express an interest in joining the MPPA power pool. Even with the eight original members, the power pool's load growth was forecast to continue climbing throughout the first decade of the 21st century. Cooper noted that the load trend is predicted to exceed the resources available to pool members by about 2011. "The power pool has shown steady growth," he said, "requiring new resources."⁷

Those resources could come from a variety of options. At the top of the list is the possibility that the Agency could finance construction of a second, 50-megawatt combustion turbine, which would put the pool in a better resource balance than it was in 2003. MPPA also is investigating distributed generation for its members. Distributed generation involves placing small combustion turbines in communities and then dedicating them to the needs of industrial customers. Cooper noted that distributed generation "can be a customer retention/relations tool and provide some additional capacity."⁸

Finally, he said, MPPA has joined along with the Michigan South Central Power Agency (MSCPA) in the Northern Lights Project, to examine the feasibility of building more coal-fired, base-load capacity in Michigan. "The Northern Lights Project is a low-cost, coal-fired generation venture that is open to all MPPA members," Cooper said, adding that other municipal power utilities in the state also have expressed interest in the project.⁹

In October 2003, MPPA completed Phase I of a feasibility study for the proposed 425-megawatt coal-fired plant to be located in Manistee on Lake Manistee. MPPA General Manager Gary Zimmerman noted that 11 of MPPA's 13 members have joined the Northern Lights Project. Others who have expressed an interest in joining the generation project are municipal utilities in Eaton Rapids and St. Louis, as well as the five members of the MSCPA.

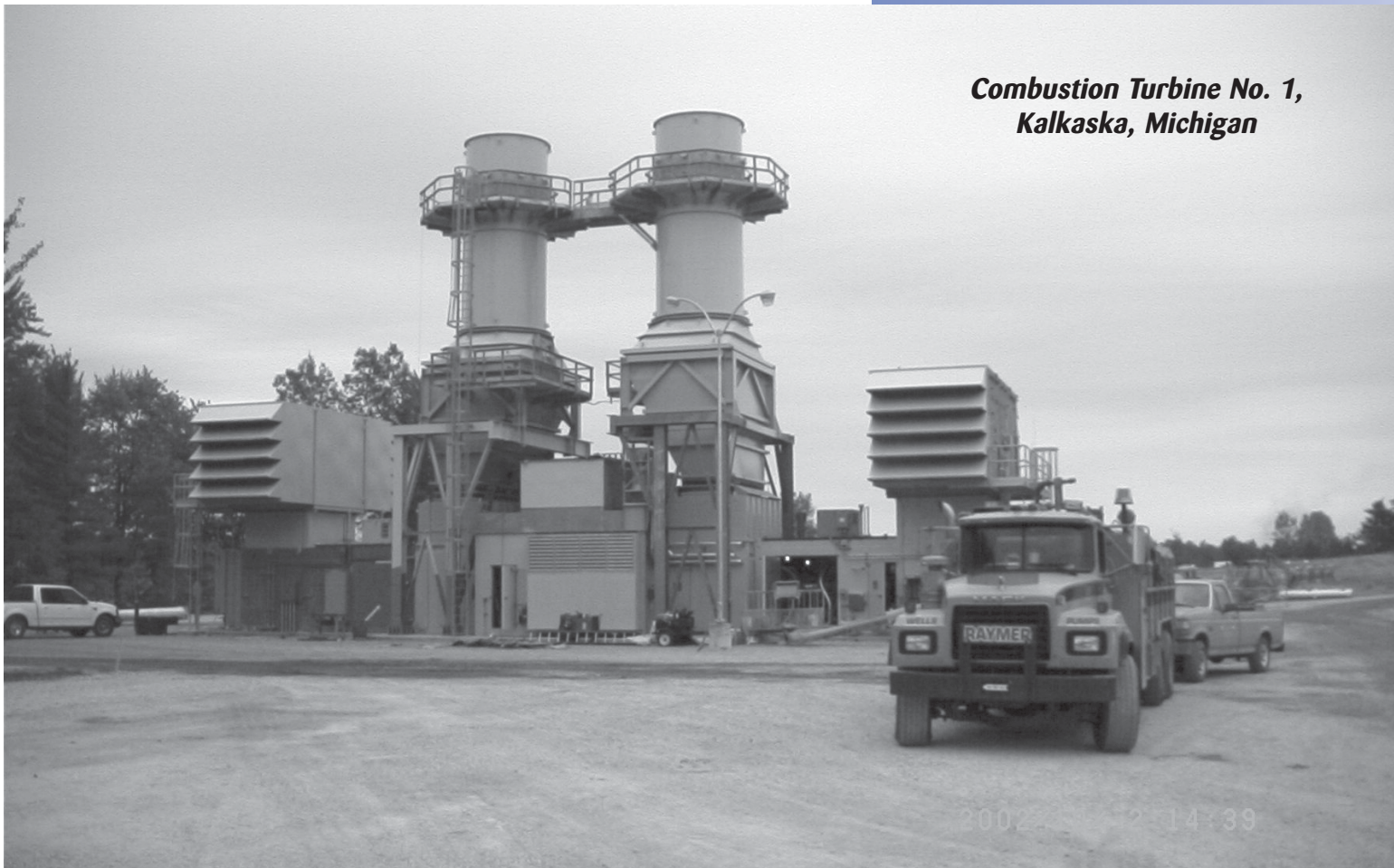
"We are still in the preliminary stages with it," Zimmerman said, "but we have filed an application for an air permit. We are working now to structure the second phase of the feasibility study, which will include a detailed look at the project financing."¹⁰

The 50-acre plant site in Manistee was a brownfield area containing an abandoned salt manufacturing plant, a deserted former boat building plant, several smaller structures, and a coal and gravel dock. The Northern Lights plant was being designed to burn Powder River Basin coal from Wyoming, which MPPA hoped to rail to Chicago and then transfer into self-unloading lake barges at the port of Chicago for the trip up Lake Michigan to Manistee. When operational, the plant will require approximately 1.8 million tons per year of the low-sulfur compliance coal, which will cost about \$40 million annually.¹¹

The Northern Lights Project is expected to cost about \$700 million by the time the plant goes into commercial operation in the first quarter of 2008. Because the Northern Lights Project is projected to be fueled with low-cost Powder River Basin coal instead of natural gas, the plant is expected to save ratepayers approximately \$50 million per year in fuel costs.¹²

Besides producing low-cost electric power for residents and businesses throughout Michigan, planners estimate that the Northern Lights Project will have a major economic impact in the state. Construction of the plant will require more than 2.5 million man-hours of skilled labor during the 42-month period when the plant is built. Construction wages during that time will total more than \$112 million. Once in commercial operation, the plant will create approximately 60 new full-time positions in Manistee.¹³

“The Northern Lights Project will diversify the fuel source of the state’s power infrastructure,” Zimmerman explained, “thereby ensuring that Michigan will remain a competitive location for businesses and new jobs well into the 21st century.”¹⁴



***Combustion Turbine No. 1,
Kalkaska, Michigan***

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Chapter 8 Endnotes

The Transmission Bottleneck

1. Michigan Public Power Agency, 25th Anniversary Annual Meeting, Project Status Report, May 14, 2003
2. "Kalkaska CT Project No. 1," Michigan Public Power Agency, 2002 Annual Report, n.p.
3. Ibid.
4. Ibid.
5. Dan Cooper, "Power Pool, Planning and New Resources," Power Point Presentation, Michigan Public Power Agency, 25th Anniversary Annual Meeting, Grand Haven Waterfront Holiday Inn, Spring Lake, Michigan, May 14, 2003
6. Ibid.
7. Ibid.
8. Ibid.
9. Ibid.
10. Telephone Interview with Gary Zimmerman, Lansing, Michigan, October 29, 2003, p.3
11. MPPA, The Northern Lights Project: Project Summary, September 30, 2003, p.3
12. Ibid., p.3
13. Ibid., p.3
14. Telephone Interview with Gary Zimmerman, Lansing, Michigan, October 29, 2003, p.3
15. Alan I. Robbins, "Protecting MPPA's Transmission Ownership and Use Rights: Past, Present and Future Efforts and Philosophy," Power Point Presentation, Michigan Public Power Agency, 25th Anniversary Annual Meeting, Grand Haven Waterfront Holiday Inn, Spring Lake, Michigan, May 14, 2003
16. Ibid.
17. Jon Chavez, "Electric grid: a complex ballet," *Toledo Blade*, August 17, 2003

A more critical problem facing MPPA is the state of Michigan's increasingly congested high-voltage transmission network. Complicating the congestion issue was a host of new ownership agreements stemming from FERC's decision to restructure the electric utility industry. Consumers Energy sold its high-voltage transmission network in Michigan to Michigan Electric Transmission Company (METC), a subsidiary of the national firm, Trans-Elect. At the same time, International Transmission Company (ITC) purchased the transmission system owned by Detroit Edison. Both METC and ITC, in turn, were part of the mammoth transmission system stretching from Manitoba to southern Missouri that was operated by the Midwest Independent System Operator (MISO).

In 2001, MPPA filed a motion for preliminary injunction to bar transfer of Consumers Energy's transmission system to Trans-Elect until the Agency's rights under the original anti-trust agreements with Consumers Power were approved and recognized. MPPA dropped the injunction when Trans-Elect agreed to a settlement of the issue.¹⁵ Under terms of the settlement, MPPA was allowed the opportunity to purchase additional ownership rights in the METC system, up to 67.5 megawatts.¹⁶

The fragility of the nation's high-voltage electric grid made national news on the afternoon of Thursday, August 14, 2003. A five-second surge of electric power that sent 2,000 megawatts of electricity west across Michigan and then south and east to Ontario and New York caused the most massive blackout in U.S. history. The power failure, which dwarfed even the November 1965 New York blackout, shut down more than 100 power plants and left 50 million electric customers in the United States and Canada in the dark.¹⁷

Millions of Detroit Edison customers in the eastern half of the Lower Peninsula lost power for up to three days. Most of MPPA's members, with the exception of the Lansing Board of Water & Light, avoided being blacked out. "Consumers Energy lost a small part of its system," explained MPPA's Gary Zimmerman, "but it held on to a great majority of its customers. Their protective equipment worked."¹⁸

Zimmerman noted that as of late 2003, "nobody has come up with a root cause for the blackout. I'm anxious to see the technical analysis of what happened."¹⁹

"There was a terrific voltage dip in just a very few cycles, a fraction of a second," Zimmerman said. "It was so fast and so deep that it got past all the protective relays and equipment."²⁰ Dan Cooper, MPPA's engineering manager, likened the blackout to carrying a water cooler 3/4 full of water down the stairs and being unable to stop the water from sloshing.

The blackout was a sobering reminder that the transmission grid was one of modern society's most vulnerable lifelines. It also was a wake-up call to the nation to re-examine the way in which the electric utility infrastructure was being reshaped. MPPA's calls since the mid-1990s to proceed cautiously with utility restructuring assumed a new level of validation in the wake of the blackout of August 2003.

“You can’t help but think that it’s all interrelated to coordination and communication between and among utilities, the MISO and the new transmission companies in Michigan,” Zimmerman said. “FERC has physically separated generation and transmission. And now you’ve got sales between these new entities across regions and not just across the state. Who is really in charge here? The owners are really remote from the people they serve.”²¹

Zimmerman also noted that utilities, government and society are going to have to re-examine the often difficult process of siting transmission lines. “There is a very strong transmission system across Michigan,” he said, “but the interconnections to Ohio, Indiana and Canada are rather limited.”²²

Future Challenges



MPPA’s focus in the early years of the Agency’s second quarter-century of operation will be remarkably similar to the goals and objectives of the first 25 years of operation. MPPA will continue to strive to provide members reliable electricity at the lowest possible cost. The Agency will examine participation in the Northern Lights Project and other generation projects to assure that power resources are there to meet the electricity demands of tomorrow.

From a transmission perspective, MPPA will concentrate on understanding what FERC and MISO are trying to accomplish in a new, restructured utility environment. MPPA will continue to participate in that restructuring while paying close attention to the financial implications of the process. A primary goal will always be to preserve the benefits of MPPA’s hard-won transmission rights, and the Agency is a transmission-owning member in MISO. MPPA will continue to serve as a sounding board, helping to prepare members for the issues and opportunities of the 21st century.²³

MPPA and its members face immense challenges during the next 25 years. But in the longer view, future challenges are no more daunting than those faced by the Agency in its early years.

The 29 cities and rural electric cooperatives pursuing rate issues with Consumers Power and Detroit Edison in the early 1970s did not see their quest as an insurmountable challenge. The founding members who negotiated the anti-trust settlement with Consumers Power in 1979 and lobbied for the passage of legislation enabling the formation of joint action agencies in Michigan in 1976 saw the opportunities inherent in banding together for the common good.

The MPPA members who obligated themselves for hundreds of millions of dollars in debt to buy ownership shares in Campbell Unit No. 3 and Belle River understood the inherent wisdom of controlling their energy destiny. Their decision 20 years ago meant that MPPA members were paying \$34 to \$40 per megawatt-hour for electric power, an absolute bargain in 2003.

For MPPA and its members, challenges and opportunities will remain synonymous terms for many years to come.

18. Telephone Interview with Gary Zimmerman, Lansing, Michigan, October 29, 2003, p.1

19. Ibid., p.1

20. Ibid., p.1

21. Ibid., pp.1-2

22. Ibid., p.2

23. Paul Reising, P.E., “MPPA’s Transmission Future,” Power Point Presentation, Michigan Public Power Agency, 25th Anniversary Annual Meeting, Grand Haven Waterfront Holiday Inn, Spring Lake, Michigan, May 14, 2003, Slide 14

