

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE MINNESOTA ENVIRONMENTAL QUALITY BOARD

In the Matter of the
Application by
LSP-Cottage Grove, L.P.
for a Certificate of Site
Compatibility for a Large
Electric Power Generating Plant

Proposed
FINDINGS OF FACT
CONCLUSIONS OF LAW,
AND RECOMMENDATION

The above-entitled matter came on for hearing before Steve M. Mihalchick, Administrative Law Judge, on September 1, 1994, in Cottage Grove, Minnesota. The record remained open until September 20, 1994 for receipt of additional written testimony and for the Final Environmental Impact Assessment.

Charles K. Dayton, Leonard, Street and Deinard, 150 South Fifth Street, Suite 2300, Minneapolis, Minnesota 55402, appeared on behalf of the Applicant, LSP-Cottage Grove, L.P. (LSP-CG). Alan Mitchell, Assistant Attorney General, 525 Park Street, Suite 500, St. Paul, Minnesota 55103, appeared on behalf of the Minnesota Environmental Quality Board (MEQB). Robert Cupit, 300 Centennial Building, 658 Cedar Street, St. Paul, Minnesota 55101, appeared for the MEQB staff. Cheryl Kohls, 11825 70th Street South, Cottage Grove, Minnesota 55016, appeared for the MEQB Siting Advisory Task Force. Also appearing was John Hynes, Public Advisor for the MEQB, 300 Centennial Building, 658 Cedar Street, St. Paul, Minnesota 55101.

Notice is hereby given that, pursuant to Minn. Stat. § 14.61, and the rules of practice of the Minnesota Environmental Quality Board (Minn. Rules part 4405.0900), exceptions to this report, if any, by any party adversely affected must be served on all parties and 14 copies must be filed with the chairperson of the MEQB, 300 Centennial Building, 658 Cedar Street, St. Paul, Minnesota 55101. Exceptions must be filed within 14 calendar days of the availability of the report.

Further notice is hereby given that the Board may, at its own discretion, accept or reject the Administrative Law Judge's

recommendation and that said recommendation has no legal effect unless expressly adopted by the Board as its final order.

STATEMENT OF ISSUE

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Should LSP-CG be granted a certificate of site compatibility for designation of a specific site for a 245 megawatt large electric power generating plant, and, if so, which of the three alternate sites should be designated.

Based upon all of the proceedings herein, the Administrative Law Judge makes the following:

FINDINGS OF FACT

Applicant

1. The certificate of site compatibility applicant, LSP-CG, is an affiliate of LS Power Corporation and a privately held corporation with headquarters at 402 East Main Street, Bozeman, Montana 59715.

Procedural History

2. The parties to this proceeding are LSP-CG, MEQB staff, and the MEQB's Siting Advisory Task Force.

3. On January 28, 1994, LSP-CG filed an application with the MEQB for a certificate of site compatibility under the Power Plant Siting Act, Minn. Stat. § 116C.51-.69, for a 232 megawatt natural gas fired large electric power generating plant. Exh. 1.

4. On April 21, 1994, the MEQB accepted the application and initiated the study, public participation and hearing process, as required by Minn. Rules pt. 4400. The MEQB's acceptance order also authorized the Chairperson to appoint the siting advisory task force and its chair and approve its charge, and to designate the project leader and public advisor. Exh. 2, at 4.

5. On May 1, 1994, notice of acceptance of the application by the MEQB was published in the Washington County Bulletin, a legal newspaper of general circulation in Washington County. The paid advertisement also contained notice of a public information meeting in Cottage Grove on May 19, 1994. Exh. 3, at 1.

6. On May 9, 1994, notice of acceptance of the application and of the public information meeting to be held on May 19, 1994, was published in the EQB Monitor. Exh. 4, at 1.

7. On May 19, 1994, an public information meeting was held in Cottage Grove.

8. On June 6, 1994, Bob Dunn, MEQB Chair, issued an order appointing members of the Siting Advisory Task Force and its chair and charging the task force in its duties. Exh. 5, at 1.

9. By letter dated June 30, 1994, LSP-CG filed revisions to its application, including an uprate in the capacity of the proposed facility to 245 megawatts. Exh. 6, at 2.

10. The siting advisory task force met on June 14 and June 21, 1994. The meetings were open to the public and had been noticed. Exh. 14, at 2.

11. The siting advisory task force completed its charge within the time provided by rule and submitted its report, dated July, 1994, to the MEQB. Exh. 7, at 2, Exh. 14.

12. No additional sites were proposed by any party, as provided in Minn. Rules part 4400.3100. Exh. 7, at 2.

13. On July 21, 1994, the MEQB ordered that the scope of the environmental impact assessment (EIA) and the public hearing include only the three sites identified in the application. Exh. 7, at 3.

14. On August 10, 1994, a combined notice of public hearing, availability of draft EIA, and public information and EIA oral comment meeting was published in the Washington County Bulletin. Exh. 9, at 1.

15. On August 1, 1994, notice of availability of the draft EIA was published in the EQB Monitor. Exh. 10, at 1.

16. On August 15, 1994, a combined notice of public hearing, availability of draft EIA, and public information and EIA comment meeting was published in the EQB Monitor. Exh. 11, at 1.

17. The combined notice of public hearing, availability of draft EIA, and public information and EIA comment meeting was mailed to interested persons of record. Exh. 12.

18. The combined public hearing, public information meeting and draft EIA comment meeting was held September 1, 1994, in Cottage Grove.

19. The comment period on the draft EIA ran for 40 days, beginning on August 5, 1994, and closing on September 15, 1994. The Final EIA was distributed on September 20, 1994.

The Project

20. The Project will be a dual fuel-fired, combustion turbine, combined cycle cogeneration facility. The primary fuel will be natural gas and the secondary fuel will be low sulfur No. 2 fuel oil. The Project will produce a net average electric output of approximately 245 megawatts (summer rating) and up to 200,000 pounds per hour (pph) of steam for use by 3M Cottage Grove.

21. The facility is a large electric power generating plant (LEGPG) as defined in Minn. Stat. § 116C.52, subd. 5.

Plant Design

22. The plant has been designed as an intermediate load electric generation facility, capable of start-up and shutdown on a dispatchable basis, and is expected to operate between 25 and 45 percent of the time, beginning in 1997.

23. The facility will consist of: a single, dual fuel-firing combustion turbine driving a synchronous, generator; one three-pressure-level heat recovery steam generator (HRSG) with duct burning provisions and stack; and two stand-by, dual fuel-firing, package auxiliary steam generators.

24. Carbon monoxide (CO) exhaust gas emissions are controlled via a CO catalyst. Nitrogen oxide (NO_x) exhaust gas emissions are controlled by incorporating low-NO_x combustors into the design. Water injection will be utilized for emission control during No. 2 fuel oil operation. In addition, NO_x emissions will be controlled through the addition of a selective catalytic reduction (SCR) system which will include equipment to inject aqueous ammonia into the exhaust stream.

25. Steam generated by the HRSG will be delivered to a steam turbine generator (STG). A portion of the steam will be extracted from the STG for delivery to 3M Cottage Grove while the remaining steam will be condensed by a surface condenser. The condensed steam and process steam condensate from 3M Cottage Grove will be returned to the HRSG. The extracted steam is supplied to meet 3M Cottage Grove's heating and process requirements and delivered via a single pipeline. Process steam condensate from 3M Cottage Grove will be returned through a single pipeline located alongside the steam pipeline.

26. The base plant design will consist of the following major equipment:

Combustion Turbine Generator (CT). The combustion turbine generator will be a Westinghouse 501F Combustion Turbine and Generator (or equivalent) with a nominal rating of approximately 159 MW. The actual generator rating will be the manufacturer's standard. Dry, low-NO_x combustion will limit NO_x emissions to 4.5 parts per million at full output while burning natural gas and 16 parts per million while burning low sulfur

No. 2 fuel oil. NO_x emissions on natural gas and fuel oil will be further reduced by selective catalytic reduction in the HRSG.

Heat Recovery Steam Generator (HRSG). The facility will use a duct-fired, three-pressure-level heat recovery steam generator for powering the steam turbine. It is a horizontal gas flow type waste heat recovery boiler which incorporates extended fin tube construction.

Steam Turbine Generator (STG). The steam generated in the HRSG will be distributed to a Westinghouse (or equivalent) single case, single flow, non-reheat steam turbine. The steam will expand through the steam turbine sections and discharge to the water cooled condenser. Power will be generated by the directly connected totally enclosed water-to-air cooled generator. Condensate is removed from the condenser hotwell by one of the two 100 percent capacity condensate pumps.

The following items will also be part of the cogeneration facility:

Two Auxiliary Boilers (nominal 90,000 pph of steam capacity each)
One Integrated Westinghouse Distributed Processing Family Plant
Distributed Control System (or equivalent)
One Water Cooled Surface Steam Condenser and Mechanical Draft
Evaporative Cooling Tower
Balance of Plant Equipment consisting of Pumps, Transformers,
Switchyard, etc.

Fuel Supply

27. The fuel supply for the proposed cogeneration facility will be primarily natural gas. The fuel will be used to fire the combustion turbine and for duct burning in the HRSG. At the average annual ambient weather conditions and at a nominal net electrical output of 245 MW and average production of saturated steam for 3M, natural gas consumption is expected to be 1,800 MMBtu per hour.

28. Natural gas will be supplied to the preferred site by Peoples Natural Gas through a 8-inch diameter high-pressure (800 psi) distribution line which will connect into an existing Northern Natural Gas (NNG) 24-inch diameter interstate transportation line approximately 4,200 feet northwest of the preferred site. The proposed route for the supply line from its connection at the NNG line to the Project is along the east side of Miller Road. The natural gas for the Project will be transported on a "firm basis." Peoples Natural Gas will have the right to utilize the transported gas for its residential and commercial customers for up to 20 days per year.

29. To meet the expanding fuel needs of its customers, including the proposed project, NNG will expand its gas transportation capacity by extending its existing system. It currently operates a north-south 24-inch line approximately one mile west of the Project site. The extension plans in the vicinity of the project are under the jurisdiction of the Federal Energy Regulatory Commission and include two sections of 30" loop line beginning just north of the Mississippi River pipeline crossing and continuing north approximately 2.82 miles. The first section of looping, expected to be completed in the fall of 1994, is

required to serve NNG's other customers and will begin just north of the Mississippi River pipeline crossing and continue to the existing intersection of the NNG line with Miller Road. The second section of looping, which will be constructed in the fall of 1996 and which will be installed to serve the Project, will begin at the intersection of the pipeline with Miller Road and continue north approximately 1.42 miles to a point north of Hillside Trail.

30. Northern Natural Gas will also install a new town border station from which Peoples Natural Gas will provide gas to the Project. The new town border station, to be located in the area of the existing intersection of the Northern Natural line with Miller Road, involves tapping the Northern Natural line and installing a manual shutoff valve, pressure valve, pressure relief valve and metering equipment. The Federal Energy Regulatory Commission would lead the regulatory review of each of the Northern Natural Gas looping projects, while the MEQB will lead the regulatory review of the Peoples Natural Gas Company interconnection line. Peoples anticipates filing an application with the MEQB under the Minnesota Pipe Line Siting procedures in late 1994 or early 1995. That regulatory review will require environmental assessment of construction and operation of the proposed 8 inch pipeline. The Minnesota Office of Pipeline Safety will be involved in required inspections during and after construction.

31. The backup fuel will be a low sulfur (less than 0.05 percent by weight) No. 2 fuel oil. The No. 2 fuel oil will be used when natural gas is not available. When used, the expected average fuel oil consumption will be approximately 1,795 MMBtu per hour. The No. 2 fuel oil will be shipped to the facility by train or truck and stored in an enclosed storage tank. No. 2 fuel oil will power the motordriven emergency fire pumps.

32. The fuel oil storage tank will be a single wall, cone roof tank, sized at a capacity of one million gallons or less. The specific size of the storage tank will be determined pending analysis of NSP's system reliability requirements and fuel delivery logistics. The tank will have a wall thickness of 1/4" (thicker near the bottom). The tank bottom thickness will be 1/4". The estimated life of the tank is 40 years.

Water Requirements

33. The facility will have three types of water requirements: (a) potable water for plant operators, (b) demineralized water to provide makeup for the steam cycle and water injection, and (c) cooling water. Existing 3M Cottage Grove sources and a backup well will provide the water necessary to meet these requirements. The water sources include: well water for potable and demineralized water; and combined recycled

non-contact cooling water and stormwater runoff (collected at a single point in 3M's discharge system) for cooling water.

34. The source of potable water will be a combination of the 3M Cottage Grove potable water supply system and a backup well to be drilled at the Project site. The water will be used for sanitary purposes, fire protection, steam cycle makeup and water injection. A single connection will be made from an underground water main. The water line will be on the overhead steam and condensate pipeline rack, running approximately 700 feet south of the Project. 3M's potable water system will operate above 40 pounds per square inch pressure, and therefore, no pumping will be required. The maximum additional flow of potable water from this source will be approximately 229 gallons per minute during peak summer operations.

35. An on-site demineralization system (filtration, acid and caustic treatment) will be employed to produce the water necessary for steam cycle makeup and water injection. A reverse osmosis system is being considered to be used in conjunction with the demineralization system.

36. Cooling water for the project will be recycled from the 3M Cottage Grove spent cooling water and storm water runoff system. 3M Cottage Grove obtains its water from deep. The non-contact cooling water is discharged via the same system as the stormwater runoff water. The water will be made available to the Project after use by 3M by piping the non-contact cooling water and stormwater runoff to the cooling water system. The water will require pumping to deliver it to the Project. The underground pipe capable of delivering 2,000 gallons per minute will be constructed to connect the cooling water source to the project. The pipe will be routed north of the Soo Line and cross the track through an existing underpass.

37. Water storage on the site will include a fire/raw water storage tank, of which a portion is dedicated to fire protection.

Steam Supply

38. The process steam from the turbine extraction and auxiliary boilers will be provided to 3M Cottage Grove with volumes ranging up to 200,000 pounds per hour. The steam and the return process steam condensate will be transported to and from the 3M facility, respectively, via pipelines located on an overhead rack. The steam not provided to 3M will be used by the steam turbine to generate power.

Electrical Generation

39. The generated electrical power output will be fed to an existing NSP substation through overhead 115 kilovolt (kV) transmission lines.

40. An existing NSP electrical substation is located adjacent to the preferred site. A 260-footlong single three-phase circuit transmission line will interconnect the cogeneration facility to NSP's substation and existing transmission system. This substation ties to the rest of NSP's transmission system through two 115 kV (one of approximately 170 MVA and one of approximately 190 MVA capacity) lines and one 69 kV line (approximately 70 MVA capacity). Aside from the Project interconnection to the Chemolite substation, no new transmission lines are necessary to accommodate the proposed cogeneration facility. Modifications which would be made by NSP to accommodate the Project would include: replacement of a transformer at the substation, construction of an approximately 260-foot-long feeder line to provide power during

construction and auxiliary power during operation, and reconductoring of approximately 7 miles of an existing transmission line from the NSP substation to Inver Hills. NSP does not expect significant changes to existing structures as part of the line reconductoring.

Wastes

41. All wastes generated by the facility will be disposed of and monitored in a manner that is consistent with applicable federal, state and local regulations.

42. Process Wastewater. Process wastewater is comprised of cooling tower and boiler blowdown. All wastewater discharges will be of a quality suitable for discharge into 3M Cottage Grove

combined non-contact cooling and storm water discharge system that is upstream from the cooling pond.

43. Demineralization wastewater originating from the regeneration of the demineralization water system, neutralization chemical feed area drains, chemical storage area drains, and water chemistry laboratory drains will be routed to the neutralization tank. Neutralization will be accomplished on a batch basis in the neutralization tank by using acid and caustic (alkaline) for pH adjustment. An estimated flow of this type of wastewater is approximately 40 gpm (low-volume), will be combined with the other plant wastewaters, and discharged into the 3M Cottage Grove non-contact cooling and stormwater runoff water discharge system.

44. The combustion turbine and compressor periodically will require water washing in order to keep the equipment running efficiently. The low-volume waste is estimated to be 5,000 gallons per wash and will be routed through the neutralization tank. The waterwashes will occur at one-week intervals. On average, water washes are conducted once every seven days.

45. Wastewater from miscellaneous plant and equipment drains will be collected and piped to an oil/water separator. The estimated flow is approximately 20 gpm (low-volume). The treated wastewater leaving the oil/water separator will be combined with the boiler water blowdown.

46. Sanitary wastes will be collected separately and discharged to the existing 3M sanitary sewer system. The estimated volume will be approximately 2 gpm.

47. Normal office wastes, shipping materials and spent resins from the demineralization process will be the only solid wastes generated at the site. These wastes will be collected in containers on-site and held for pickup by a local solid waste collection company. The destination for the waste will be a local, licensed solid waste disposal facility.

48. The construction and operation of the facility will result in generation of minimum volume of toxic and hazardous substances. Wherever possible, a policy of selecting non-harmful or less harmful substitutes will be implemented in order to mitigate risk associated with toxic substances. Material safety data will be the basis for selection criteria. The materials of concern will include small amounts of solvents and cleaning chemicals that will be used for maintenance and will require disposal. All wastes will be disposed via a licensed disposal contractor qualified to handle and dispose such wastes.

Air Emissions

49. Before construction of the Project can begin, an approved permit to construct must be obtained from the MPCA. The Project will be classified as a "major source" due to emissions of NO_x in excess of 250 tons per year, making the Project subject to review under 40 CFR 52.21 Prevention of Significant Deterioration (PSD). The PSD review is a federally mandated process which is designed to ensure that significant deterioration to the ambient air quality in any area does not occur. For each pollutant which is potentially emitted in excess of specified annual amounts and for which the region is an attainment area for the pollutant, all applicable PSD requirements must be met. The applicable requirements for each pollutant include the following.

Best Available Control Technology (BACT) must be used.

The Project must demonstrate that emissions from the Project will not cause ambient air concentrations to exceed the NAAQS or available PSD increments.

An analysis of preconstruction ambient air monitoring data for applicable air contaminants must be prepared. Existing monitoring data may be used with MPCA approval.

Plant Layout

50. The project will occupy a fenced area approximately eight acres in size. The HRSG stacks and auxiliary boiler stacks will be the tallest structures (213 feet tall) while the HRSG itself will be approximately 70 feet tall, 50 feet wide and 180 feet long. The main powerhouse building will be approximately 45 feet tall and will occupy approximately one acre. The cooling tower structure will be 41 feet tall, 54 feet wide and 222 feet long. Connections to existing ancillary facilities include the following:

- Natural gas pipeline (from Peoples Natural Gas)
- Combined non-contact cooling water and storm water line (from 3M Cottage Grove)
- Potable water line (from 3M Cottage Grove)
- Sanitary waste sewer (to 3M Cottage Grove)
- Steam line (to 3M Cottage Grove)
- Condensate return line (from 3M Cottage Grove)
- Electrical transmission line (to NSP Substation)

Construction

51. Commercial operation of the facility is planned for May 1997. Assuming approval of all environmental and building permits by the end of 1994, this allows a 30-month construction and start-up period.

52. The proposed cogeneration facility is expected to require up to 25 full-time operators, maintenance and technical professionals.

Proposed Sites

53. The Project is located within Washington County in the City of Cottage Grove, Minnesota. A site preferred by the applicant and two alternative sites are being considered for the project location. The Project's steam customer is 3M Cottage Grove whose location has determined the selection of these sites.

54. The preferred site location for the proposed cogeneration facility is on land currently owned by 3M (the steam purchaser) which is zoned for heavy manufacturing uses. The preferred site is located adjacent to and just north of the existing 3M Cottage Grove facility. Directly adjacent to the site on the west is the existing NSP Chemolite electrical substation.

55. Alternative site 1 is located approximately 2,000 feet north of the preferred site on land owned by 3M Cottage Grove. This site is southeast of the State Highway 61 (US Highway 10) and

County Road 19A interchange.

56. Alternative site 2 is located approximately 3,500 feet northwest of the preferred site on land owned by 3M Cottage Grove adjacent to the Cottage Grove Business Park. This site is located southwest of the joining of the Northern Natural Gas pipeline corridor and Miller Road.

57. Except for connections to ancillary facilities, the design of the basic project will be the same for each of the alternate sites. The differences are as follows:

58. Alternate Site No. 1

Fuel Supply. A natural gas pipeline to alternate Site No. 1 would be approximately 3000 feet in length, beginning at the Northern Natural town border station and continuing east to Alternate Site 1. Peoples Natural Gas Company would still be responsible for the construction and permitting of the pipeline. Though further from the Soo Line, rail delivery would still be an option for the No. 2 fuel oil.

Water Supply. Similar to the preferred site, there are no existing wells or wastewater discharge pipelines in the vicinity of alternate Site No. 1. Approximately 1,775 feet of additional piping would be required to connect potable water and sanitary waste water to the existing facilities at 3M Cottage Grove. The additional distance would require that the pipeline be installed underground. Similarly, the cooling water and process wastewater would need to be piped this additional distance from their connection points at the 3M facility.

Steam Delivery. Use of alternate Site No. 1 will result in approximately 1,775 feet of additional pipeline to provide steam to and condensate from the 3M Cottage Grove facility. The piping would be installed in conjunction with the potable and sanitary water systems.

Electrical Delivery. The electrical transmission line route would be significantly longer since alternate Site No. 1 is approximately 1,775 feet north of the substation.

59. Alternate Site No. 2

Fuel Supply. A 8 inch natural gas pipeline to alternate Site No. 2 would be about 1000 feet in length. Peoples Natural Gas Company would still be responsible for the construction and permitting of the pipeline.

This alternative site is 2,250 feet farther from an available spur on the Soo Line Railroad than the preferred site. However, this will only have a minimal effect on rail deliveries of No. 2 fuel oil.

Water Supply. Similar to the preferred site, there are no existing wells or wastewater discharge pipelines in the vicinity of alternate Site No. 2. Approximately 2,250 feet of additional piping would be required to connect potable water and sanitary waste water to the existing facilities at 3M Cottage Grove. The additional distance would require that the pipeline be installed underground. Similarly, the cooling water and process wastewater would

need to be piped this additional distance from their connection points at the 3M facility.

Steam Delivery. Use of alternate Site No. 2 will result in approximately 2,250 feet of additional pipelines to provide steam to and return condensate from the 3M Cottage Grove facility. The piping would be installed in conjunction with the potable and sanitary water systems.

Electrical Delivery. The electrical transmission line route would be significantly longer since alternate Site No. 2 is approximately 3,500 feet northwest of the substation.

Project Cost

60. The total capital base cost of the Project at each of the alternate sites is estimated to be up to \$200 million. Due to the differences in length of connections for the ancillary facilities, the construction costs produce the greatest cost variance between sites. The preferred site is the lowest cost to build and operate, while alternate Site No. 1 would be a lower cost than alternate Site No. 2.

61. Because of the close proximity of the three alternate sites, the affected environment is very similar for each. There are essentially no distinctions among the three sites relating to socioeconomic conditions, cultural resources, or the natural environment.

Other Permits

62. All permits shown in Section 14 of the application will be required for the proposed facility at all of the three alternate sites. Exh. 1, at 111.

63. LSP-CG filed an application for an air emission permit for the proposed project with the Minnesota Pollution Control Agency on June 7, 1994. The agency has made a preliminary finding that the project at the preferred site will be in compliance with state and federal ambient air quality standards. The agency has not conducted analyses of the alternate sites and is not required by rule to do so. Further, the agency has found that state environmental noise standards will be met at the preferred site. Exh. 13, at 2.

Environmental Impact Assessment

64. Six letters of comment on the draft Environmental Impact Assessment were properly filed with the MEQB by the September 15, 1994 close of the comment period.

65. The Final Environmental Impact Assessment includes responses to all substantive comments.

66. The Final Environmental Impact Assessment was filed with the Administrative Law Judge on September 20, 1994, after which the record of the hearing was closed.

Applicable Statutory and Rule Considerations

67. Minn. Stat. § 116C.57, subd. 4 provides that the MEQB shall be guided by the following responsibilities, procedures, and considerations:

(1) Evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high voltage transmission line routes and the effects of water and air discharges and electric fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including base line

studies, predictive modeling, and monitoring of the water and air mass at proposed and operating sites and routes, evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;

(2) Environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;

(3) Evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;

(4) Evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;

(5) Analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

(6) Evaluation of adverse direct and indirect environmental effects which cannot be avoided should the proposed site and route be accepted;

(7) Evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;

(8) Evaluation of potential routes which would use or parallel existing railroad and highway rights-of-way;

(9) Evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;

(10) Evaluation of the future needs for additional high voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;

(11) Evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and

(12) Where appropriate, consideration of problems raised by other state and federal agencies and local entities.

(13) If the board's rules are substantially similar to existing rules and regulations of a federal agency to which the utility in the state is subject, the federal rules and regulations shall be applied by the board.

(14) No site or route shall be designated which violates state agency rules.

The application and the Final Environmental Impact Assessment contain adequate information to allow the MEQB to consider these factors.

68. Minn. Rules, part 4400.3310 requires that the MEQB be guided by specified siting considerations. The considerations and a summary comparison of the three alternate sites for each

consideration are as follows:

69. A. effects on human settlement. including but not limited to. displacement. noise.

aesthetics, community benefits, cultural values, recreation, and public services;

For most of these elements, each site is equal. However, with regard to aesthetics and noise, the preferred site will have less impact than the alternate sites. The aesthetic impact of the facility will be mitigated to a great extent at any of the three sites by locating much of the equipment inside the generation building. The project grounds will be landscaped. In addition, the final selection of the dominating color of the buildings will be selected based upon recommendations of the local community. Each of these measures will help to reduce the industrial character of the facility. Even with these measures, construction of the Facility will cause a visual change to residents of the area and motorists traveling on Highway 61/10. At Alternate site #1, the major change would be to the residential area to the northeast. At alternate site #2, the major visual change would be to the residential areas to the northwest. With both of the alternate sites, the facility would be considered a foreground feature when viewed from the highway and residential areas. At the preferred site, there would also be a visual impact to the residential areas and to motorists on highway 61/10. The preferred site, however, is very close to the 3M Cottage Grove complex and because the project will have similar features to the existing industrial view of the complex, the project will blend into this complex and appear more as a background feature than if constructed at either of the alternate sites. In addition, because the preferred site requires no transmission line construction and because the steam line connecting the project to 3M Cottage Grove is shortest if the project is constructed at the preferred site, the visual impact of these two interconnections are minimized if the project is constructed at the preferred site. Exh. 16, at 2.

70. B. effects on public health and safety;

All three sites are very comparable with respect to this criteria, however one potential negative aspect of Alternate site #1 favors the other two sites. The plume from the cooling tower will disperse and evaporate within 500 feet of the tower during the infrequent occasions of cooling tower fogging. Because the cooling tower at the alternate site #1 is only approximately 375 feet from highway 61/10,

this highway may occasionally be affected by fog or ice. Chemolite Road, which is only 300 feet from the cooling tower at alternate site #1, may also be affected. Exh. 16, at 3.

71. C. effects on land-based economies, including but not limited to, agriculture, forestry, tourism and mining;

None of the three sites will have a significant impact on land-based economies and all sites are virtually equal with respect to this consideration. Exh. 16, at 3.

72. D. archaeological and historic resources;

None of the three sites will have a significant impact on archaeological and historic resources and all sites are virtually equal with respect to this consideration. Exh. 16, at 3.

73. E. effects on the natural environment;

All three sites are very comparable with respect to this criteria, though alternate site #2 is in close proximity to a wetland swale located to the northeast of that site. At this site, considerable care would need to be exercised to avoid any harmful effects which could occur due to storm water

runoff and sedimentation during the construction period. Exh. 16, at 4.

74. F. rare and unique natural resources;

None of the three sites will have an impact on rare and unique natural resources. Exh. 16, at 4.

75. G. cumulative present and future demands on air and water resources;

The project will employ state-of-the-art Pollution control technology to minimize air emissions. Although the facility will provide both electricity to Northern States Power and steam to 3M Cottage Grove, the Project's air emissions will be generally less than or equal to those currently being generated from 3M's coal-fired boilers which produce only steam. Although 3M's permit to run these boilers will remain in force, they are scheduled to be shut down when the project becomes operational. This will result in a net reduction in air emissions when the Project and 3M Cottage Grove are viewed on a combined basis. The major portion of the input water to the project, approximately 2.2 million gallons per day, will come from recycling the non-contact cooling water from 3M Cottage Grove. As such, it will not represent an additional withdrawal from the aquifer. The design features related to air and water resources are the same for all three sites. Therefore, each site is virtually equal with respect to consideration G. Exh. 16, at 4.

76. H. application of design options which maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of generating capacity;

Each site is equal with respect to this consideration. Exh. 16, at 5.

77. I. use of existing LEPGP sites;

There are no existing sites or facilities which could provide both the required steam needs of 3M Cottage Grove and the electrical needs of NSP. Exh. 8, at

106. Because all three sites would be new sites, each site is equal with respect to this consideration. Exh. 16, at 5.

78. J. use of existing transportation, pipeline, and electrical transmission systems;

Regarding the use of existing transportation systems, the preferred site would utilize an

existing access road which currently serves the gun club. Because of the proximity of Alternate #1 to the Chemolite Road Interchange of Highway 61/10, there exists the potential for congestion if the project is constructed at this alternate site. With respect to the use of existing natural gas pipelines, construction of the project at any of the sites will require the same minor pipeline looping on Northern Natural's system. Also for each site, People's Natural Gas will need to construct a short pipeline to deliver the gas to the site. All three sites are virtually the same in this respect. With respect to the use of existing electrical transmission lines, this clearly favors the preferred site which will require no transmission line construction. Both of the alternate sites would require that short transmission lines be constructed. The preferred site best complies with this consideration. Exh. 16, at 5.

79. K. costs of constructing and operating the facility which are dependent on design
and site;

The costs of operations are equal for each site. However, because a transmission line to NSP's substation would need to be constructed for either of the alternate sites, and because the steam line which will connect the project with 3M Cottage Grove, and various other water and wastewater lines would need to be longer for both of the alternate sites, the preferred site is less

costly than the two alternates with respect to this consideration. Exh. 8, at 107. Exh. 16, at 6.

80. L. adverse human and natural environmental effects which cannot be avoided.

This consideration favors the preferred site and Alternate #2. As discussed earlier, the cooling tower at Alternate site #1 is only approximately 375 feet from highway 61/10, this highway may occasionally be affected by fog or ice. Exh. 16, at 6.

81. Of the 12 considerations, six show all three sites to be equal; three criteria favor the preferred site alone; and the remaining three favor two sites. In each of these three instances, the preferred site is always included. None of the considerations suggests that one of the alternates should be selected over the preferred site. Exh. 16, at 6.

82. No site exclusion areas listed in Minn. Rule 4400.3310, subp. 2 and 3, are directly affected by any of the three alternate sites.

83. Each of the three sites contains less than 0.5 acres of prime farmland per net megawatt of the proposed facility and are within the incorporated limits of the city of Cottage Grove.

Siting Advisory Task Force

84. The MEQB's siting advisory task force conducted two public meetings in Cottage Grove and heard no opposition to the proposed project at the preferred site. Exh. 14, at 4.

85. The task force, by unanimous vote, recommended that the MEQB approve the applicant's preferred site. Exh. 14, at 2.

Based upon the foregoing Findings of Facts, the Administrative Law Judge makes the following:

CONCLUSIONS OF LAW

1. Any of the foregoing Findings which more properly should be designated as Conclusions are hereby adopted as such.

2. The Minnesota Environmental Quality Board has jurisdiction over the subject matter of the hearing.

3. All relevant substantive and procedural requirements of law and rule have been fulfilled.

4. The site proposed by the applicant for construction of a large electric power generation plant at the 3M Cottage Grove facility is an acceptable site under the provisions of Minn. Stat. § 116C.57, subd. 4 and in Minn. Rules part 4400.3310, and is preferable to either of the two alternative sites that were evaluated.

Based upon the foregoing Conclusions Of Law, the Administrative Law Judge respectfully makes the following:

RECOMMENDATIONS

That the MEQB certify the Applicant's Preferred Site as a compatible site for construction of the Cottage Grove Cogeneration Project, and issue a Certificate of Site Compatibility.

Dated this ____ day of October, 1994.

Steve M. Mihalchick
Administrative Law Judge

MEMORANDUM