BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION OF	**)**	
BASIN ELECTRIC POWER COOPERATIVE	**)**	**S T I P U L A T I O N**
FOR AN ENERGY CONVERSION FACILITY	**)**	
PERMIT FOR THE CONSTRUCTION OF	**)**	**EL07-002**
GROTON GENERATION STATION UNIT 2	**)**	
PROJECT NEAR GROTON, SOUTH DAKOTA	**)**	
	)	

It is hereby stipulated and agreed by and between the Applicant, Basin Electric Power Cooperative, and staff of the South Dakota Public Utilities Commission ("**Staff**"), that the following Findings of Fact and Conclusions of Law, and an appropriate Order consistent with said Findings and Conclusions may be adopted by the South Dakota Public Utilities Commission (the "**Commission**") in the above-captioned matter. In support of its Application, the Applicant hereby offers this Stipulation, the Application filed January 5, 2007 and all responses submitted by the Applicant to the Staff's data requests. Staff offers no answering testimony or exhibits conditioned upon the Commission accepting the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. INTRODUCTION

Applicant, a consumer-owned electric cooperative corporation headquartered in Bismarck, North Dakota, has applied for a permit to construct certain electric generation and associated transmission facilities collectively (referred to hereinafter as the "**Unit 2 Project**"), the components of which will be located in Brown County, South Dakota.

The proposed Unit 2 Project will be comprised of the following principal components:

1.1 A simple-cycle gas electric turbine (maximum capacity of approximately 100 megawatts);

1.2 A 115 kV overhead transmission line approximately 125 feet in length;

The Unit 2 Project does not constitute or include any activities relating to or located upon abandoned railroad rights-of-way.

2. PURPOSE OF FACILITY

According to the Application, construction of the proposed Unit 2 Project is required to meet growing demand by Applicant's membership for electric power, energy and capacity. Specifically, the purpose of the Unit 2 Project is to provide a generation resource in this area sufficient to assure Applicant's ability to serve its projected member loads on a reliable basis during periods of peak demand on a cost efficient basis.

3. DESCRIPTION OF PROJECT

The Unit 2 Project facilities will be comprised of two (2) primary components, viz. (A) a simple-cycle gas turbine; and (B) approximately 125 feet of 115 kV overhead transmission line.

4. ESTIMATED COST OF PROJECT

The estimated total cost of this facility is $81 million, with the cost of separate project components estimated as follows:

Simple-cycle gas turbine	$71.5 million
115 kV overhead transmission line and substation upgrades	$1.0 million
Engineering, overhead, interest during construction, contingency	$8.5 million

5. DEMAND FOR THE FACILITIES

Using reasonable and customary forecasting and analysis techniques, Applicant has concluded that it will face a power deficit of 80 to 100 MW during the summer seasons, which deficit will first appear in the summer of 2008 and will grow significantly over time. Those

studies also demonstrate that a peaking facility is the type of energy resource needed immediately to address such deficit, and that the proposed self-build Unit 2 Project is the lowest cost, most reliable option available to Applicant. The Unit 2 Project also has been identified as the option most compatible with long-term plans to satisfy Applicant's projected membership load growth.

6. SITE DESCRIPTION

The site for the Unit 2 Project is located in a predominantly agricultural area. The Combustion Turbine Generator (**CTG**) itself will be located in Section 18, Township 122 North, Range 60 West, on property owned by Applicant, which is approximately five (5) miles south of Groton, South Dakota. The site is comprised of relatively level terrain adjacent to two electrical substations. The proposed CTG site will include a drainage pond, with the only other significant feature being the remnant (bed) of abandoned railroad line which will not be disturbed in connection with the Unit 2 Project. The fuel (natural gas) for the CTG will be supplied by and through an existing 10.75-inch diameter underground natural gas pipeline, approximately 11.5 miles in length, which originates in Section 13, Township 120 North, Range 61 West at an existing meter site owned by Northern Border Pipeline (**NBPL**). A diagram showing the general layout of the CTG site is attached hereto for reference as Exhibit "A".

7. ALTERNATIVE SITES

Applicant conducted a systematic evaluation of alternative routing and location for Groton Generation Station, Unit 1, which included consideration of such significant items as access to the high-voltage transmission system; availability of adequate supplies of natural gas and water; low cost and minimum impact to the environment and to the public. Other major considerations were minimization of need for construction of additional transmission lines and minimization of costs of transporting CTG power and energy to Applicant member loads.

Twelve potential project locations initially were studied, 10 of which were eliminated based upon various environmental concerns. Of the two remaining locations, the location of the current Groton Generation Station, Unit 1 was selected. The site described in this Stipulation is superior to other alternatives in that it is compatible with existing land uses in the region; minimizes impacts to the environment; avoids impact to existing public features (e.g. schools, residential communities, commercial development) to the maximum extent reasonably possible. Moreover, this site is superior to any other potential site as it will use existing transmission and gas lines and thus avoid unnecessary disruption to the environment and to the public.

8. ENVIRONMENTAL FACTORS AND PHYSICAL ENVIRONMENT

Applicant has completed an Environmental Report for the Unit 2 Project that is located in Appendix A of its Permit Application. The affected environment is described in detail in Section 4.0 of the Environmental Report. Estimates of the changes and impacts to the existing environment from activities associated with construction and maintenance of the Unit 2 Project facilities are discussed in detail in Section 5.0 of the Environmental Report.

The proposed location of the Unit 2 Project facilities would minimize changes and impacts to the existing environment by siting in areas with compatible land use and minimize the need to cross environmentally sensitive or significant features. The Environmental Report (Appendix A) demonstrates that the Unit 2 Project will have no significant environmental impact on all factors evaluated. It is anticipated that this Project will not create any significant direct, cumulative or synergistic hazards to the health and welfare of human, plant or animal communities. No other major industrial facilities under regulation will have an adverse effect upon the environment as a result of being located in the Unit 2 Project's proposed siting area.

8.1 **Regional Land Forms**. The Unit 2 Project will use the existing level to nearly level terrain for the CTG and associated facilities. The grading and earthmoving required will

not be significant. No direct, indirect or cumulative impacts to regional landforms are anticipated.

8.2 **Topography**. Modifications to approximately 15 acres of cultivated farm fields will result from grading an area for a pad upon which the CTG will sit and to establish appropriate drainage of storm water across and around the site. It is anticipated that there will be no direct, indirect or cumulative impacts to topography relating to construction and operation of the Unit 2 Project.

8.3 **Geologic Features**. The Unit 2 Project facilities will be located in the Lake Dakota Plain within the James Basin Physiographic Division of the Central Lowlands province. Construction, operation and maintenance of the Project facilities are highly unlikely to cause or to encounter any significant problems or issues relating to geologic features in the Unit 2 Project area.

8.4 **Economic Deposits**. No economic mineral deposits are identified in the Unit 2 Project area. The proposed Unit 2 Project is located in an area of poor probability of sand and gravel occurrence.

8.5 **Soil Type**. Soils at the CTG site are described as Aberdeen (silt clay loam), Nahon (silty clay loam) and Exline (silt loam) series. These silty clay loam and silt loam soils have moderate organic matter and their available water capacity is moderately high. These soils are easily eroded by wind and water-related forces.

8.6 **Potential for Erosion and Sedimentation**. Impacts to soils from the Unit 2 Project will be insignificant. Areas that are cleared or disturbed by construction of the CTG could be susceptible to erosion. Significant increases in the potential for erosion are anticipated by virtue of construction, operation or maintenance of the proposed Project facilities. Areas that are disturbed by construction are expected to recover naturally with vegetative re-establishment or reseeding if and as necessary.

8.7 **Seismic Risks, Subsidence Potential and Slope Instability**. Seismic hazards in the study area are rated as very low. No potentially hazardous geologic areas, such as slumps or landslides, would be affected by construction of the CTG. As a result, no direct, indirect or cumulative impacts to geologic resources are anticipated to occur as a result of activities relating to the Unit 2 Project.

The proposed CTG will be designed and constructed in accordance with all applicable codes. In general, soils in the Unit 2 Project area are expected to provide adequate foundation for the CTG without concern of subsidence. The Unit 2 Project area is flat, and slope instability will not be an issue.

8.8 **Geological Constraints**. There do not appear to be any geological characteristics that present unusual constraints to the design, construction or operation of the proposed CTG.

8.9 **Hydrology**. No mapped surface water bodies are located within the proposed area of the CTG site. Impacts to surface water attributable to the Unit 2 Project are anticipated to be insignificant. Impacts to the quality of water in small, ephemeral or unmapped water are likewise anticipated to be insignificant. After construction is completed, it is anticipated that there will be no direct, indirect or cumulative impacts to surface water quality relating to the Unit 2 Project.

No impacts to the flood handling capability of the 100-year flood plain in the Unit 2 Project area are anticipated because the CTG site is not located within a 100-year flood plain. The CTG site is located within a 500-year flood zone, but it is anticipated that there will be no significant direct, indirect or cumulative impacts upon the flood-handling capability of the 500-year flood zone or existing or potential floodplains near the CTG site due to mitigation measures that will be incorporated into the design and construction of the CTG site.

No significant direct, indirect or cumulative impacts to groundwater quality are anticipated relative to the construction or operation of the Unit 2 Project.

8.10 **Effect on Current Planned Water Uses**. WEB Water Development Association in Aberdeen, South Dakota will provide all of the water required for operation of the Unit 2 from its existing rural water distribution pipeline located adjacent to the CTG site. Accordingly, the Unit 2 Project will have no impacts on planned water uses by communities, agricultural, recreation, fish or wildlife.

8.11 **Surface and Groundwater Use by Proposed Facility**. The Unit 2 Project will not require consumptive use of or discharge to any surface water body or groundwater (other than use of water purchased from WEB Water Development Association). All non-contact cooling water will be collected in an on-site storage pond, from which it will evaporate or percolate into the soil.

8.12 **Aquifer Use by Proposed Facility**. The Unit 2 Project will not use groundwater.

8.13 **Water Storage, Reprocessing and Cooling by Proposed Facility**. Turbine injection water for nitrogen oxide (**NO_X**) control will be demineralized in trailer-mounted vessels. Spent vessels will be removed from the CTG site for regeneration at an authorized facility. All non-contact cooling water will be collected in an on-site storage pond from which it will evaporate or percolate into the soil. Contaminated industrial waste water and sewage will be collected in underground storage vessels and ultimately transferred into trucks and removed from the CTG site for treatment at authorized disposal facilities.

8.14 **Deep Well Injection Use by Proposed Facility**. No deep well injection would be required for the construction or operation of any of the components of the Unit 2 Project.

8.15 **Effect on Terrestrial Ecosystems**. Detailed information resulting from biological field surveys conducted to identify and quantify the terrestrial fauna and flora potentially affected by the Unit 2 Project are contained in Sections 4.5 through 4.7 of the Environmental Report located in Appendix A of the Permit Application. It is anticipated

that construction and operation of the Unit 2 Project will have no significant adverse impact on the terrestrial biotic environment.

8.16 **Effect on Terrestrial Fauna**. The Unit 2 Project construction is not anticipated to have any significant adverse impact upon wildlife in the Unit 2 Project area. No threatened, endangered or candidate animal species were observed or indicated in or around the Unit 2 Project area.

8.17 **Effect on Terrestrial Flora**. Impacts to vegetation in the Unit 2 Project area are anticipated to be insignificant since most vegetation in the area already has been altered from its original state. The majority of the acreage that will be disturbed in connection with the Unit 2 Project presently is devoted to agricultural uses. Short-term impacts (that affect vegetation for one (1) year or less) could include disturbance, removal and soil compaction caused by: (A) performing geotechnical investigations; (B) preparing equipment yards and construction trailer sites; and (C) clearing, grubbing, grading and constructing Unit 2 Project components. These short-term impacts will be mitigated by reclamation soon after construction is completed.

Construction associated with the Unit 2 Project may have minor indirect effects on vegetation in the project area by increasing the potential for establishment of noxious weeds. Disturbed soil creates a hospitable environment for invasion of weeds and Project-related traffic may provide a transport mechanism for seeds of noxious weeds to the area. Removal of vegetation may increase erosion and sedimentation. Increased runoff on bare and compacted soils could create gullies and change the overall landscape.

Cumulative impacts to vegetation are anticipated to be insignificant and include the effects from existing farming and ranching. The primary land use in the Unit 2 Project area consists of cultivated fields of corn, soybeans, small grains and alfalfa that have been changing the landscape for many years. Future agricultural use of the area

may continue to change the landscape significantly. This Project should have an insignificant impact on vegetation, as most Project areas have been altered from their natural state.

8.18 **Effect on Aquatic Ecosystems**. The Unit 2 Project is not expected to cause significant, direct, indirect or cumulative impacts on wetlands in the Project area. Less than 10 acres of isolated herbaceous wetlands are located within the total quarter section surrounding the CTG site. Access to the CTG site will consist primarily of existing roads, thus minimizing impacts on any nearby wetlands.

The single most significant contributing factor insofar as cumulative impacts to wetlands in the Unit 2 Project area is the conversion of mixed grass prairie grasslands to cultivated fields of corn, soybeans, small grains and alfalfa – which conversion pre-exists the Project.

8.19 **Water Quality**. Construction of the Unit 2 Project will comply with all applicable federal, state and local permits required for alteration of wetlands, streams or rivers relating to the Project. The following are specific measures that would be taken to protect water quality in the proposed Unit 2 Project: (A) Best management practices would be implemented to minimize erosion and sedimentation, runoff and surface instability during construction; (B) Current drainage patterns in areas affected by construction would be maintained to the extent possible; (C) Staging areas for project-related construction equipment will be located in areas that are not environmentally sensitive to control erosion; (D) Staging and laydown yards for project-related construction will be established at least 50 feet from waterways or wetlands, if permitted by topography; (E) Construction equipment will not be serviced within 25 feet of waterways or wetlands; (F) Equipment will not be fueled within 100 feet of the waterways or wetlands; (G) Any spills of fuels or other hazardous materials during construction or system maintenance will be promptly contained and cleaned up; and (H) Any herbicides used in ROW maintenance

will be approved by the U.S. Environmental Protection Agency and applied by licensed professionals. Application of herbicides would be limited to the extent necessary for regular maintenance of the CTG site.

8.20 **Air Quality**. Construction of the Unit 2 Project will comply with all applicable federal, state and local permits required. Air pollution impacts from CTG emissions will be below National Ambient Air Quality Standards (**NAAQS**) and South Dakota Ambient Air Quality Standards in accordance with South Dakota Air Regulation § 74:36:05:06 – Standard for Issuance of Operating Permit. The predicted maximum impacts from the CTG demonstrate that operation of the CTG will not cause or contribute to violations of applicable air quality standards. Predicted maximum modeled concentrations of NO_X and CO are well below the applicable PSD significance levels, and are below the South Dakota ambient air quality standards and NAAQS.

9. LAND USE

9.1 **Land Use**. The CTG site itself will encompass approximately 15 acres of land. The CTG will occupy land solely owned by the Applicant, the use of which is subject to regulation and oversight by Brown County, South Dakota. The CTG will not alter any transportation corridors. Agriculture is the principal enterprise in Brown County in the areas located near the Unit 2 Project facilities; however, no “prime farmland” exists in the Project area. The proposed CTG site does not include any land that is formally classified or administered by federal or South Dakota state governmental entities.

9.2 **Homes and Persons Displaced**. There will be no homes or persons displaced as a result of the construction, operation or maintenance of the proposed facilities.

9.3 **Land Use Compatibility**. The Unit 2 Project facilities are compatible with the present land uses of the surrounding area. The CTG will be constructed on private land owned by the Applicant and will be adjacent to two existing electric substations. The addition of

the CTG to the area would have minimal direct or indirect impacts on the already linear features of the landscape, as existing roads, fencing and power lines transect the area. Construction would temporarily alter the area. There will be no impact to "prime farmland" by the construction or operation of the Unit 2 Project.

9.4 **Effect on Land Use**. The Unit 2 Project will have minimal impact on land use. The majority of the Unit 2 Project facilities will occupy private land that is regulated with respect to land use by Brown County land use plans and ordinances. The short-term impacts could include disruption of vegetation and farming caused by: (A) Preparing equipment yards and construction trailer sites; (B) Clearing, grubbing and grading for installation of the CTG; and (C) Clearing, grubbing, grading and drilling hole foundations for installation of transmission poles.

The long-term impacts could include disruption of vegetation and farming caused by loss of crops, hay or livestock forage as the result of construction of the CTG and any future expansion thereof. Based upon the small amount of acreage involved, the cumulative impact of the Unit 2 Project upon land use is anticipated to be insignificant.

9.5 **Local Land Use Controls**. The Unit 2 Project facilities will be located predominantly on private land the use of which is subject to Brown County land use plans and ordinances. The Unit 2 Project will comply with all applicable and reasonable local land use, zoning and building rules, regulations and ordinances. On November 3, 2004, the Brown County Planning and Zoning Commission issued a Special Exception Permit allowing construction of the CTG.

10. TIME SCHEDULE

Initial CTG site work and construction is planned to commence April, 2007. Commercial operation is scheduled to commence in June of 2008. Appendix E of the Application sets out

the planned schedule in more detail.

11. COMMUNITY IMPACT

11.1 **Forecast of Socioeconomic Impact**. No significant adverse socioeconomic impacts to the local communities and governmental facilities or services are anticipated as a result of the construction, maintenance and operation of the Unit 2 Project. It is expected that the Unit 2 Project will provide socioeconomic benefit by creating construction employment opportunities, increased demand for locally supplied construction equipment, and increased reliability and availability of electrical power.

11.2 **Forecast of Taxation Impacts**. No significant immediate or long-term impact on property and other taxes of any taxing jurisdictions are anticipated as a result of the construction, maintenance or operation of the Unit 2 Project.

11.3 **Forecast of Agricultural Impacts**. Short-term impacts to agriculture are expected to last no more than a day per disruption and would primarily impact access to livestock and farm irrigation, tilling and harvesting operations. The small conversion of agricultural land to the CTG site is expected to have minimal impact on the overall crop production within the proposed project area.

11.4 **Forecast of Population and Community Impacts**. The Unit 2 Project is not expected to substantially impact the population, income, occupational distribution or the integration and cohesion of the adjacent communities. The populations of Brown County in 2000 was estimated at 35,460 (Census 2003) and is not expected to change on a short-term basis as a result of this Project. The temporary workforce associated with construction of the Unit 2 Project will be housed in existing facilities, such as motels and hotels, in the Unit 2 Project area. However, increased electric power availability in the area could facilitate long-term population growth.

Impacts related to ambient noise and television interference attributable to the

Unit 2 Project are expected to be insignificant. Existing background (ambient) noise levels at the CTG site prior to the installation of the Unit 1 CTG (obtained by and through noise survey) showed that the late night sound levels were as low as 33A-weighted decibels (**dBA**) and that daytime noise levels typically ranged from 45 to 90 dBA, with an hourly average of approximately 45 to 55 dBA.

Compliance noise testing conducted on August 29 and 30, 2006, without Unit 1 operating, showed an L_{10} background noise level of 44 dBA at a distance of 100 feet from the nearest residence. With Unit 1 operating at full load, compliance noise testing showed L_{10} nighttime noise levels ranging from 40.0 to 50.7 dBA and daytime noise levels ranging from 43.5 to 50.4 dBA at a distance of 100 feet from the nearest residence.

The proposed CTG site is located in a predominately rural area. The closest residence is approximately 2000 feet north of the CTG site. The next closest two residences are approximately 4700 feet northwest and 5100 feet southeast of the CTG site. The noise levels associated with the proposed CTG when operating are expected to be 65 dBA at a distance of 400 feet from the CTG and associated equipment to be installed in connection with this Project. Application of standard noise calculations, formulas and modeling software based on actual Unit 1 noise levels indicates that with both units operating at full load, the noise level at a distance of 100 feet from the nearest residence is expected to increase by no more than 3 dBA which, when added to the actual maximum nighttime and daytime levels in the paragraph above equates to approximately 54 dBA (L_{10}).

Attached hereto as Exhibit “B” is a chart for use as a reference to benchmark common noise levels. Construction and operation of the Unit 2 Project will comply with all applicable National Electric Safety Code (**NESC**) standards. Although there has from time-to-time been considerable public concern about potential adverse impacts to

human health attributable to so-called electric and magnetic fields (**EMFs**) associated with electric generation and transmission facilities, the Unit 2 Project facilities will be located in a rural area. Applicant has found no basis to believe that the Unit 2 Project will present any significant threat to health or safety of humans, livestock or wildlife.

11.5 **Forecast of Transportation Impacts**. No significant direct, indirect or cumulative impacts are expected to the transportation systems of cities, counties or the state. No airports are located in the immediate vicinity of the Unit 2 Project facilities.

11.6 **Forecast of Cultural Resource Impacts**. Applicant has conducted a records search and an on-site cultural resources inventory of the Unit 2 Project area. The results of the cultural resources study are discussed in Section 5.4 of the Environmental Report located in Appendix A of Applicant's PUC Permit Application. The Unit 2 Project is expected to have no significant direct, indirect or cumulative impact on the cultural resources.

12. EMPLOYMENT ESTIMATES

It is anticipated that after completion of the Unit 2 Project, the site will utilize three full-time permanent employees for operating and maintaining both Units 1 and 2. It is anticipated that construction workforce, comprised primarily of skilled laborers, will be drawn in part from the local workforce in Brown and Spink Counties. Local hires for all disciplines and workers are estimated at 40 to 60 percent of the total construction work force. It is anticipated that the construction workforce relating to all phases of the Unit 2 Project will be as set forth on Exhibit "C" attached hereto. It is anticipated that there will not be significant impact upon demand for local services (e.g. police, medical facilities, fire, educational services); that there will be no detrimental impact on local communities and that there will be no significant cumulative impacts on existing local infrastructure relating or attributable to construction and/or operation of the

Unit 2 Project.

13. FUTURE ADDITIONS AND MODIFICATIONS

Applicant does not request approval of any future additions or modifications under this permit Application. It is possible that Applicant will identify a need and seek approval to add another CTG to the CTG site at some point in the future; however, the timing, cost and other details of such addition are unknown at this time.

14. NATURE OF PROPOSED ENERGY CONVERSION FACILITY

14.1 **Estimated On-line Life and Operating Capacity**. The life of the Unit 2 Project is estimated at 33 or more years. Its intended use is as a peaking facility with running plant factors up to 15 percent. However, the CTG could be operated at considerably higher running plant factors if demand and/or energy prices make it beneficial to do so.

14.2 **General Description**. The CTG will be a General Electric Aero LMS 100 dual-fuel capable gas turbine designed for outdoor installation. The CTG will be capable of generating a nominal net 95 MW of electric power and energy, with a heat rate of approximately 9300 British Thermal Units (**Btu**) per net kilowatt-hour. The CTG facility will require an exhaust stack approximately 86 feet in height. CTG site equipment will include the turbine, generator, generator breaker, site station service transformer, motor control centers equipment and battery systems; and a cooling tower.

With modifications and subject to permitting requirements, the CTG will be capable of dual-fuel (natural gas and low sulfur #2 fuel oil) operation. However, natural gas will be used as the sole fuel unless and until such modifications are made and the air quality permit is modified. The CTG will be suitable for either on-site or remote start-up, operation and/or shutdown. The CTG will be located within an enclosure provided by the manufacturer. Controls and electrical equipment will be housed in a 30’ x 60’

modular building. Water forwarding pumps will be housed in a 40' x 70' steel building that will also serve as a warehouse and shop. A foundation for the CTG, building and associated equipment will be built on-site, and the CTG site will be surrounded by a chain-link fence with locking gate.

14.3 **Materials Flowing into the CTG Facility**. Materials flowing into the CTG facility will be natural gas, water and air. The natural gas delivery capacity at the CTG will be 26 million standard cubic feet per day. The CTG facility will consume a maximum of 100 gallons per minute of water during operation. The turbine will include an inlet air filter system capable of removing airborne dust.

14.4 **Materials Flowing out of the CTG Facility**. Treatment of the water (demineralization) used by the CTG will take place in demineralizing vessels mounted on semi trailers. These vessels will be taken off-site for regeneration at authorized facilities. Non-contact wastewater from the evaporative cooler and storm water will be routed to on-site retention ponds.

14.5 **Procedures to Avoid Discharges and Emissions**. All air emissions from the CTG will strictly comply with the terms and conditions of the operation permit issued for this Project by the South Dakota Department of Environment and Natural Resources. All solid wastes will be properly disposed of using a qualified, licensed disposal firm. Contaminated wastewater will be collected in vessels and removed from the site by a qualified, licensed disposal firm. No recreational facilities are located near the CTG site. The CTG facility will be lighted, fenced and locked. Thus operated, the CTG will not constitute a public or private nuisance.

15. PRODUCTS TO BE PRODUCED

The CTG will use natural gas to produce electric power and energy.

16. FUEL TYPES USED

The fuel for the CTG will be natural gas. The CTG will be capable of using #2 fuel oil with modifications.

17. FUEL SOURCES AND TRANSPORTATION

An existing gas pipeline will supply the gas turbine with natural gas from the existing NBPL facilities.

The CTG will be capable of dual-fuel (natural gas and low-sulfur #2 fuel oil) operation. However, only the on-skid equipment required for firing the #2 fuel will be included as part of this Project. The design of the site will provide for the addition of the off-skid equipment to accommodate secondary fuel sources if desired later.

Water treatment will be by semi-trailer-mounted demineralizing vessels. The vessels will be regenerated off site. The existing control building includes a truck bay for the trailer. The site presently includes two water storage tanks (approximately 200,000 gallons and 115,000 gallons). The volume of the 115,000-gallon bolted steel tank will be increased to 160,000 gallons by adding a couple of rings. No additional transportation facilities are needed to deliver raw materials or to remove wastes.

18. ALTERNATIVE ENERGY RESOURCES

Alternatives for generation resources were considered and addressed. The following alternative renewable energy technologies were evaluated: (A) solar electric; (B) wind; (C) geothermal; (D) small hydroelectric. Solar electric energy was eliminated because a solar generation resource is not sufficiently consistent to meet load demand because it is available only when the sun shines. Thus, this potential alternative does not reliably meet the peaking power supply needs of the Applicant's members.

Wind energy similarly was eliminated from further consideration because this resource

has an availability of less than 50 percent, which does not meet the reliable power supply needs of the Applicant's members.

Geothermal energy was eliminated from further consideration because there are no significant geothermal resources available in the service area.

Similarly, small hydroelectric resources were considered and rejected because they depend on stream flows and are thus unreliable resources.

According to the application, construction of the Unit 2 Project is required to meet the growing needs for power of the Applicant's membership in its service territory and is the resource that best meets the needs of the Applicant's members.

19. WASTE

The environmental factors considered in the process design, in addition to air quality, include waste management.

Waste management associated with the gas turbine will be minimal. No hazardous wastes will be generated by process operations. Industrial wastes will consist of waste fluids and detergents from turbine maintenance and miscellaneous other materials. All industrial wastes will be removed from the site and held for disposal in a licensed and permitted commercial waste disposal facility.

Operations associated with the CTG will not involve off-site water discharge. Site run-off water will be directed to an on-site pond. A Storm Water Management and Control Permit will be obtained from the South Dakota Department of Natural Resources in connection with the construction of the CTG facility.

20. ESTIMATE OF EXPECTED EFFICIENCY

Expected efficiency is based on the manufacturer's (General Electric) specifications for the CTG. Data used to calculate efficiency included the lower heating value (**LHV**) for the

natural gas supply that will be used to fuel the CTG, the power output capability of the generator set, and the fuel feed rate. In addition, an efficiency calculation of percent (%) heat recovery was made using the manufacturer's guaranteed heat consumption rate for the combination system. Based on these calculations, the CTG should achieve efficiencies presented below:

	Calculated Maximum	Manufacturer's Guarantee
% Heat Recovery (Power/output/Heat input)	43.49%	42.18%
Heat Consumption (Btu/hr per KW-hr)	7,841	8,084

The slight differences between the calculated maximum efficiencies and the manufacturer's guaranteed levels arise from conservative assumptions made by the manufacturer related to mechanical and thermal losses during the energy conversion process. The efficiency in either case is higher than that for similar power generating facilities of current design.

21. DECOMMISSIONING

At decommissioning, all equipment and buildings will be removed from the CTG site and disposed of appropriately. Concrete will be buried on the CTG site as approved, and the ground surface will be returned to its pre-Project contour quality and usage. The CTG facility will not produce any hazardous material that will be stored or disposed of on site, requiring no hazardous removal at decommissioning. The underground gas and water pipelines will be capped below grade and abandoned in place. The estimated cost of decommissioning is $2.0 million.

22. ADDITIONAL INFORMATION

The Application contains all information necessary for the local review committees to assess the effects of the proposed facilities pursuant to SDCL 49-41B-7 and 49-41B-11. The

Application also contains all information necessary to meet the burden of proof specified in SDCL 49-41B-22. Attached hereto as Exhibit "D" is the letter from the local review committee chairman summarizing the committee's findings and recommendations.

CONCLUSIONS OF LAW

1.

The Commission has jurisdiction over the subject matter and parties to this proceeding pursuant to SDCL Chapter 49-41B and ARSD 20:10:22. Subject to the findings made on the four elements of proof under SDCL 49-41B-22, the Commission has authority to grant, deny or grant upon such terms and conditions as it may deem appropriate, a permit to construct, operate and maintain the Unit 2 Project and the various components thereof.

2.

The Unit 2 Project constitutes an "Energy Conversion Facility" as described in SDCL 49-41B-2(4).

3.

The Applicant's Permit Application complies with the applicable requirement of SDCL Chapter 49-41B and ARSD 20:10:22.

4.

The Unit 2 Project, as defined herein, will comply with all applicable laws and rules, including all requirements of SDCL Chapters 49-34B; 49-41B and ARSD 20:10:22.

5.

The Unit 2 Project, if constructed in accordance with the terms and conditions of this permit, will not pose a threat of serious injury to the environment or to the social and economic conditions of inhabitants or expected inhabitants in the siting area.

6.

The Unit 2 Project, if constructed in accordance with the terms and conditions of this permit, will not substantially impair the health, safety or welfare of the inhabitants of the siting area.

7.

The Unit 2 Project, if constructed in accordance with the terms and conditions of this permit, will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

8.

The Commission has the authority to revoke or suspend any permit granted under the South Dakota Energy Facility Permit Act for failure to comply with the terms and conditions of the permit pursuant to SDCL 49-41B-33.

9.

The Applicant has met its burden of proof pursuant to SDCL 49-41B-22 and is entitled to a permit as provided in SDCL 49-41B-25, subject to the following:

STIPULATE TO THE FOLLOWING TERMS AND CONDITIONS:

1.

The Applicant will obtain all governmental permits which reasonably may be required by any township, county, state or federal agency or any other governmental unit for construction activity prior to engaging in the particular activity covered by that permit. Copies of any permits obtained by the Applicant shall be sent to the Commission.

2.

In order to ensure compliance with the terms and conditions of this permit pursuant to SDCL 49-41B-33, it is necessary for the enforcement of this Order that all employees, contractors and agents of the Applicant, involved in Unit 2 Project be made aware of the terms and conditions of this permit.

The Applicant shall ensure that its employees, contractors and agents involved in right-of-way negotiations and acquisitions, right-of-way clearing, construction and right-of-way and pipeline maintenance understand fully and comply with the terms and conditions of this permit.

3.

If, during construction, the Applicant or its agents discover what may be an archaeological resource, the Applicant or its agents shall immediately cease work at that portion of the site and notify the Commission and the State Archaeologist. If such an archaeological resource is discovered, the Applicant shall develop a plan which is acceptable to the State Archaeologist to salvage, avoid or protect the archaeological resource.

4.

In order to mitigate interference with agricultural and ranching operations during and after construction, the Applicant shall locate all structures, to the extent feasible and prudent, to minimize adverse impact and interferences with agricultural operations, shelter belts and other land uses or activities. The Applicant shall take appropriate precautions to protect livestock and crops during construction.

5.

The terms and conditions of the permit shall be made a uniform condition of construction, subject only to an affirmative written request for an exemption addressed to the Commission. A request for an exemption shall clearly state which particular condition should not be applied to the property in question and the reason for the requested exemption. The Commission shall evaluate such requests on a case-by-case basis.

6.

Before commencing construction, the Applicant shall furnish an indemnity bond in the amount of Ten Thousand Dollars ($10,000.00) to comply with the requirements of SDCL 49-41B-38.

7.

If radio or television interference is caused by the presence or operation of the CTG or associated transmission facilities, the Applicant shall take all appropriate action to restore or provide reception equivalent to reception levels in the immediate areas just prior to construction of the facility. This mitigation requirement shall apply to homes or other structures in place at the time of construction but shall not apply to any dwellings or other structures built after construction of the Unit 2 Project Facilities approved in this Permit has been completed.

8.

The noise levels associated with the Unit 1 and Unit 2 Project facilities when both Units 1 and 2 are operating will not exceed the following standards at the nearest occupied, existing residence not owned by Basin Electric Power Cooperative: Daytime: L_{10}=60dbA; Nighttime: L_{10}=55dbA

The point of measurement will be within 100 feet of the residence in the direction of the generation facility. This noise limit is associated with both units as constructed on site. A post-construction operational noise assessment will be completed by an independent third-party noise consultant, approved by the SDPUC, to show compliance with the noise level. The noise assessment will be performed in accordance with American National Standards Institute (**ANSI**) B133.8 – Gas Turbine Installation Sound Emissions.

9.

At decommissioning, all equipment and buildings will be removed from the CTG site and disposed of appropriately. Concrete will be buried on the CTG site as approved, and the ground surface will be returned to its pre-project contour, quality and usage. The CTG facility will not produce any hazardous material that will be stored or disposed of on site, thus no removal of hazardous materials will be required at decommissioning. The underground gas and water pipelines will be capped below grade and abandoned in place.

Dated March 6, 2007.

BASIN ELECTRIC POWER COOPERATIVE

By: _____
James K. Miller
Manager, Environmental Services

SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

By: _____
Kara Van Bockern
Staff Attorney