office of energy security
85 7th Place East, Suite 500, St. Paul, MN 55101-2198
main: 651.296.4026 tty: 651.296.2860 fax: 651.297.7891
www.commerce.state.mn.us

Energy Facility Permitting
Public Meeting Comment Form

Name: _____

Address: _____

City: _____ State: _____ ZIP: _____

Please share your comments on the potential impacts, mitigation measures and alternative routes to be considered in the scoping document and environmental impact statement to be prepared for the proposed Brookings County, South Dakota, to Hampton, Minnesota, 345 kilovolt (kV) transmission line and associated facilities.

Please turn this form in tonight or mail to the address provided on the back (use additional sheets as necessary). You may also email comments to Scott Ek, Project Manager at: **scott.ek@state.mn.us** with **ET2/TL-08-1474** in the subject line or submit comments online at: **http://energyfacilities.puc.state.mn.us/publicComments.html**. **Comments must be received no later than 4:30 p.m., Thursday, April 30, 2009.**

Signature: _____ Date: _____

Postage

Scott Ek
Minnesota Office of Energy Security
85 7th Place East, Suite 500
St. Paul, MN 55101-2198

Issues Typically Covered in an Environmental Impact Statement (EIS)

An EIS provides information on the existing resources, potential impacts from the project, and potential mitigation for these impacts. Resources evaluated typically include:

1. Human Settlements

a. Aesthetics – *existing scenic resources, visual impact from project*
b. Cultural Resources – *archaeological and historic resources, also cultural values held by people in the area*
c. Land Use – *existing land use and zoning, future plans*
d. Socioeconomics – *population information, workforce, displacement, economic development*
e. Community Services – *fire, police, EMT, healthcare*
f. Utility Systems – *electric, gas, oil, water, telephone infrastructure*
g. Traffic and Transportation – *existing and planned roads, airports, railroads*
h. Safety and Health – *safety and health during construction and operation, electric and magnetic fields (EMF)*
i. Noise – *noise during construction and operation, noise-sensitive areas*

2. Natural Environment

a. Air Quality and Climate – *visibility, air pollution, local weather conditions (average temperature, rain, snowfall)*
b. Geology and Soils – *geology, topography, soil classifications, erosion*
c. Water Resources – *water quality, lakes, rivers, groundwater, floodplains, dewatering*
d. Wetlands – *wetlands by type, wetland function*
e. Biological Resources – *vegetation, fish and wildlife, threatened and endangered species, special natural communities, noxious weeds*

3. Economic and Land Use Resources

a. Agriculture – *prime farmland, crops, livestock, orchards, wild rice areas*
b. Forestry – *land managed for forestry*
c. Mining – *gravel, sand, quarries, underground mines*
d. Recreation and Tourism – *attractions, resorts, parks, hunting, fishing, trails*

Factors Considered in PUC's Transmission Line Route Permitting Decision

In determining whether to issue a permit for a high voltage transmission line, the Commission considers the following (Minnesota Rule 7848.5910):

- Effects on human settlement, including, but not limited to displacement, noise, aesthetics, cultural values, recreation and public services;
- Effects on public health and safety;
- Effects on land-based economics, including, but not limited to, agriculture, forestry, tourism, and mining;
- Effects on archaeological and historic resources;
- Effects on the natural environment, including effect on air and water quality resources and flora and fauna;
- Effects on rare and unique natural resources;
- Application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;
- Use or paralleling of existing right-of-way, survey lines, natural division lines, and agricultural field boundaries;
- Use of existing large electric power generating plant sites;
- Use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;
- Electrical systems reliability;
- Costs of constructing, operating, and maintaining the facility which are dependent on design and route;
- Adverse human and natural environmental effects which cannot be avoided; and
- Irreversible and irretrievable commitments of resources.

FACTSHEET

HVTL Route Permit Full Review Process

Statutes and Rules

The Power Plant Siting Act (Minnesota Statutes Chapter 216E) gives the Minnesota Public Utilities Commission (PUC) the authority to issue route permits for high voltage transmission lines (HVTL). An HVTL is defined as a conductor of electric energy designed for and capable of operating at a nominal voltage of 100 kilovolts or more. The rules for issuing such permits are contained within Minnesota Rules Chapter 7849.5010-7849.5340.

Permitting Process

The Full Review Process requires an applicant to identify a preferred route and an alternative route in the application. The Minnesota Department of Commerce, Office of Energy Security (OES) must prepare an Environmental Impact Statement, and a contested case hearing presided over by an administrative law judge must be held before the PUC can make a permitting decision on the matter. The PUC has one year from the time the application is accepted to reach a final decision on the permit.

Public Participation

The PUC maintains a list of persons who have asked to be notified about all pending HVTL projects for which a permit is being sought. People can request to have their names added to this general list or a to project specific list by registering on the PUC Web site:

http://energyfacilities.puc.state.mn.us/

Upon submission of a permit application, the applicant must mail written notice to:

- Those persons on the PUC general notification list
- Local government officials
- Property owners on or near the proposed routes.

Additionally, notice must be published in a legal newspaper of general circulation in the area of the proposed site(s) or route(s).

Public Meeting. Shortly after receipt of a permit application, the OES will schedule a public information and environmental review scoping meeting. A public information meeting is an informal meeting that gives the public a chance to learn about a proposed project, ask questions and talk directly to the applicant and OES staff. OES must provide at least ten days notice of the public meeting.

A major purpose of the public meeting, in addition to informing the public of the project, is to solicit public input into the scope of the Environmental Impact Statement that will be prepared. The Director of OES then determines what environmental impacts and what alternatives will be examined when environmental review is conducted. Minnesota Rule 7849.5300 describes the EIS scoping and preparation process.

Public Hearing. A public hearing is required on all permitting decisions by the PUC for new large energy projects subject to the Power Plant Siting Act. The public hearing is a process during which an administrative record is created for the PUC's consideration in making a final decision on the permit. With larger projects that are subject to the Full Review Process, the public hearing is a contested case hearing under the procedures of the Office of Administrative Hearings (Minnesota Rules Chapter 1405).

How to Get Involved

Individuals can get involved in the permit review process for a proposed HVTL by:

- Contacting the project proposer or OES staff
- Requesting to be added to the PUC general or project-specific contact list
- Attending public meetings
- Obtaining and reviewing the route permit application
- Submitting comments and questions orally or in writing
- Obtaining and reviewing the EIS document
- Testifying at the public hearing.

For More Information

For more information about the route permitting process or a specific project, please visit the PUC web site or contact the Office of Energy Security staff at:

Minnesota Department of Commerce
Office of Energy Security / Energy Facility Permitting
85 7th Place East, Suite 500
Saint Paul, Minnesota 55101

PH 651.296.8813 or 800.657.3794 / FAX 651.297.7891 / TTY 651.296.2869

Minnesota Department of Commerce
Office of Energy Security
Energy Facilities Permitting

Brookings County, South Dakota to Hampton, Minnesota

Proposed 345 kV Transmission Project

Public Information Meetings
March 30 – April 9, 2009

Project

- An approximate 237-mile 345 kV transmission line proposed by Great River Energy and Xcel Energy.
- The transmission line would begin at the state's western border near Hendricks, Minnesota, and end south of the Twin Cities metro area near Hampton, Minnesota.
- As required the applicants have proposed two possible routes, a preferred and an alternate.
- The routes would cross portions of the following counties: Lincoln, Lyon, Yellow Medicine, Chippewa, Redwood, Brown, Renville, Sibley, Le Sueur, Scott, Rice, and Dakota.

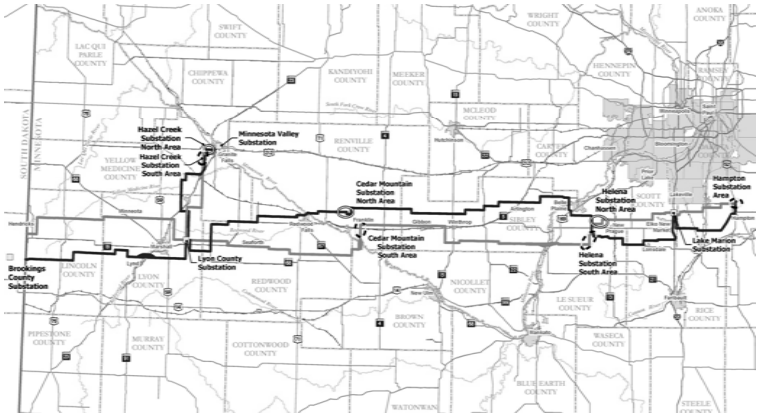
WELCOME

Tonight's Agenda

- Opening Presentations
  - Project Overview
  - State of Minnesota Route Permitting Process
  - Presentation by Applicant
- Public questions and scoping comments

Project

- The proposed project also includes the construction of four new substations (Granite Falls, New Prague, Franklin, and Hampton) and the expansion of four existing substations.
- The applicants propose using single structure steel poles which would require a 150-foot right-of-way for the majority of the route.
- If permitted, construction of the transmission line is proposed to begin in 2011 with completion by 2013.



Energy Facility Permitting in Minnesota

A high voltage transmission line is defined as a conductor of electricity operating at a nominal voltage of 100 kilovolts or more.

The rules for issuing transmission line permits are contained within Minnesota Rules Chapter 7849.5010 to 7849.5340.

Energy Facility Permitting in Minnesota

The Minnesota Public Utilities Commission is the government entity authorized to issue route permits for high voltage transmission lines pursuant to **The Power Plant Siting Act**

Environmental Impact Study (EIS)

- **EIS Scoping**: Identify alternatives and issues to be covered in EIS
- **Draft EIS**: Analyze Impacts, Suggest Mitigation, and Compare Alternatives
- **Final EIS**: Address comments received on draft EIS

World Health Organization

Fact sheet N°322
June 2007

Electromagnetic fields and public health
Exposure to extremely low frequency fields

The use of electricity has become an integral part of everyday life. Whenever electricity flows, both electric and magnetic fields exist close to the lines that carry electricity, and close to appliances. Since the late 1970s, questions have been raised whether exposure to these extremely low frequency (ELF) electric and magnetic fields (EMF) produces adverse health consequences. Since then, much research has been done, successfully resolving important issues and narrowing the focus of future research.

In 1996, the World Health Organization (WHO) established the International Electromagnetic Fields Project to investigate potential health risks associated with technologies emitting EMF. A WHO Task Group recently concluded a review of the health implications of ELF fields (WHO, 2007).

This Fact Sheet is based on the findings of that Task Group and updates recent reviews on the health effects of ELF EMF published in 2002 by the International Agency for Research on Cancer (IARC), established under the auspices of WHO, and by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) in 2003.

ELF field sources and residential exposures

Electric and magnetic fields exist wherever electric current flows - in power lines and cables, residential wiring and electrical appliances. **Electric** fields arise from electric charges, are measured in volts per metre (V/m) and are shielded by common materials, such as wood and metal. **Magnetic** fields arise from the motion of electric charges (i.e. a current), are expressed in tesla (T), or more commonly in millitesla (mT) or microtesla (μT). In some countries another unit called the gauss, (G), is commonly used (10,000 G = 1 T). These fields are not shielded by most common materials, and pass easily through them. Both types of fields are strongest close to the source and diminish with distance.

Most electric power operates at a frequency of 50 or 60 cycles per second, or hertz (Hz). Close to certain appliances, the magnetic field values can be of the order of a few hundred microtesla. Underneath power lines, magnetic fields can be about 20 μT and electric fields can be several thousand volts per metre. However, average residential power-frequency magnetic fields in homes are much lower - about 0.07 μT in Europe and 0.11 μT in North America. Mean values of the electric field in the home are up to several tens of volts per metre.

Task group evaluation

In October 2005, WHO convened a Task Group of scientific experts to assess any risks to health that might exist from exposure to ELF electric and magnetic fields in the frequency range >0 to 100,000 Hz (100 kHz). While IARC examined the evidence regarding cancer in 2002, this Task Group reviewed evidence for a number of health effects, and updated the evidence regarding cancer. The conclusions and recommendations of the Task Group are presented in a WHO Environmental Health Criteria (EHC) monograph (WHO, 2007).

Following a standard health risk assessment process, the Task Group concluded that there are no substantive health issues related to ELF electric fields at levels generally encountered by members of the public. Thus the remainder of this fact sheet addresses predominantly the effects of exposure to ELF magnetic fields.

Short-term effects

There are established biological effects from acute exposure at high levels (well above 100 μT) that are explained by recognized biophysical mechanisms. External ELF magnetic fields induce electric fields and currents in the body which, at very high field strengths, cause nerve and muscle stimulation and changes in nerve cell excitability in the central nervous system.

Potential long-term effects

Much of the scientific research examining long-term risks from ELF magnetic field exposure has focused on childhood leukaemia. In 2002, IARC published a monograph classifying ELF magnetic fields as "possibly carcinogenic to humans". This classification is used to denote an agent for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence for carcinogenicity in experimental animals (other examples include coffee and welding fumes). This classification was based on pooled

analyses of epidemiological studies demonstrating a consistent pattern of a two-fold increase in childhood leukaemia associated with average exposure to residential power-frequency magnetic field above 0.3 to 0.4 µT. The Task Group concluded that additional studies since then do not alter the status of this classification.

However, the epidemiological evidence is weakened by methodological problems, such as potential selection bias. In addition, there are no accepted biophysical mechanisms that would suggest that low-level exposures are involved in cancer development. Thus, if there were any effects from exposures to these low-level fields, it would have to be through a biological mechanism that is as yet unknown. Additionally, animal studies have been largely negative. Thus, on balance, the evidence related to childhood leukaemia is not strong enough to be considered causal.

Childhood leukaemia is a comparatively rare disease with a total annual number of new cases estimated to be 49,000 worldwide in 2000. Average magnetic field exposures above 0.3 µT in homes are rare: it is estimated that only between 1% and 4% of children live in such conditions. If the association between magnetic fields and childhood leukaemia is causal, the number of cases worldwide that might be attributable to magnetic field exposure is estimated to range from 100 to 2400 cases per year, based on values for the year 2000, representing 0.2 to 4.95% of the total incidence for that year. Thus, if ELF magnetic fields actually do increase the risk of the disease, when considered in a global context, the impact on public health of ELF EMF exposure would be limited.

A number of other adverse health effects have been studied for possible association with ELF magnetic field exposure. These include other childhood cancers, cancers in adults, depression, suicide, cardiovascular disorders, reproductive dysfunction, developmental disorders, immunological modifications, neurobehavioural effects and neurodegenerative disease. The WHO Task Group concluded that scientific evidence supporting an association between ELF magnetic field exposure and all of these health effects is much weaker than for childhood leukaemia. In some instances (i.e. for cardiovascular disease or breast cancer) the evidence suggests that these fields do not cause them.

International exposure guidelines

Health effects related to short-term, high-level exposure have been established and form the basis of two international exposure limit guidelines (ICNIRP, 1998; IEEE, 2002). At present, these bodies consider the scientific evidence related to possible health effects from long-term, low-level exposure to ELF fields insufficient to justify lowering these quantitative exposure limits.

WHO's guidance

For high-level short-term exposures to EMF, adverse health effects have been scientifically established (ICNIRP, 2003). International exposure guidelines designed to protect workers and the public from these effects should be adopted by policy makers. EMF protection programs should include exposure measurements from sources where exposures might be expected to exceed limit values.

Regarding long-term effects, given the weakness of the evidence for a link between exposure to ELF magnetic fields and childhood leukaemia, the benefits of exposure reduction on health are unclear. In view of this situation, the following recommendations are given:

- Government and industry should monitor science and promote research programmes to further reduce the uncertainty of the scientific evidence on the health effects of ELF field exposure. Through the ELF risk assessment process, gaps in knowledge have been identified and these form the basis of a new research agenda.
- Member States are encouraged to establish effective and open communication programmes with all stakeholders to enable informed decision-making. These may include improving coordination and consultation among industry, local government, and citizens in the planning process for ELF EMF-emitting facilities.
- When constructing new facilities and designing new equipment, including appliances, low-cost ways of reducing exposures may be explored. Appropriate exposure reduction measures will vary from one country to another. However, policies based on the adoption of arbitrary low exposure limits are not warranted.

Further reading

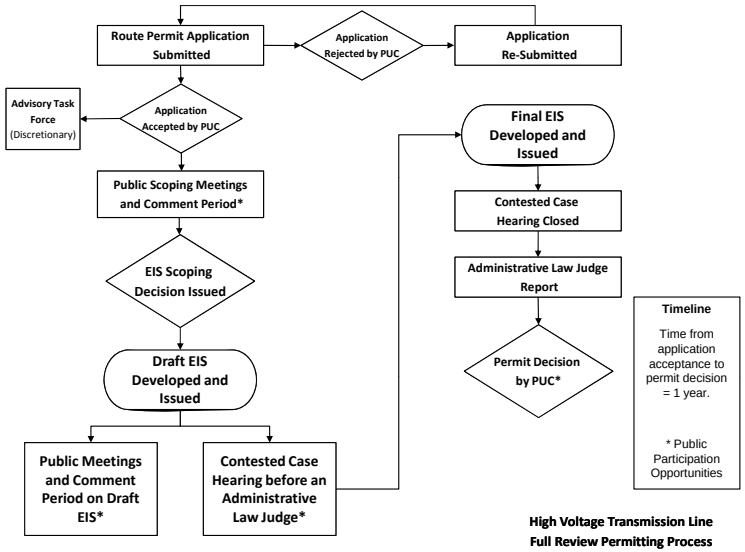
WHO - World Health Organization. Extremely low frequency fields. Environmental Health Criteria, Vol. 238. Geneva, World Health Organization, 2007.

IARC Working Group on the Evaluation of Carcinogenic Risks to Humans. Non-ionizing radiation, Part 1: Static and extremely low-frequency (ELF) electric and magnetic fields. Lyon, IARC, 2002 (Monographs on the Evaluation of Carcinogenic Risks to Humans, 80).

ICNIRP - International Commission on Non-Ionizing Radiation Protection. Exposure to static and low frequency electromagnetic fields, biological effects and health consequences (0-100 kHz). Bernhardt JH et al., eds. Oberschleissheim, International Commission on Non-ionizing Radiation Protection, 2003 (ICNIRP 13/2003).

ICNIRP – International Commission on Non-Ionizing Radiation Protection (1998). Guidelines for limiting exposure to time varying electric, magnetic and electromagnetic fields (up to 300 GHz). Health Physics 74(4), 494-522.

IEEE Standards Coordinating Committee 28. IEEE standard for safety levels with respect to human exposure to electromagnetic fields, 0-3 kHz. New York, NY, IEEE - The Institute of Electrical and Electronics Engineers, 2002 (IEEE Std C95.6-2002).



High Voltage Transmission Line
Full Review Permitting Process

Routing Criteria

- Minimize Conflicts with Human Settlement and other Land Uses
- Minimize Environmental Impacts
- Conserve Resources
- Ensure Electric Energy Security and Reliability through Efficient, Cost-effective Power Supply and Electric Transmission Infrastructure

Issues Typically Covered in an EIS

Human Settlement
Aesthetics, Cultural Resources, Land Use, Socioeconomics, Community Services, Utility Systems, Traffic and Transportation, Safety and Health, and Noise

Natural Environment
Air Quality and Climate, Geology and Soils, Water Resources, Wetlands, and Biological Resources

Economic Resources
Agriculture (*prime farmland, organic farms, crops, livestock, orchards, wild rice areas*), Forestry, Mining, and Recreation and Tourism (*attractions, resorts, parks, hunting, fishing, trails*).

Route Permit Conditions

- Design
- Route
- Right-of-way preparation
- Construction techniques
- Other appropriate conditions

How to Get Involved

Individuals can get involved in the permit review process for a proposed high voltage transmission line by:

- Contacting Office of Energy Security staff
- **Requesting to be added to the PUC general or project-specific contact list**
- Reviewing the permit application, EIS, and other pertinent documents
- Attending public meetings and hearings
- **Submitting comments orally or in writing by mail or email**

Project Information

Project Docket Numbers
Route Permit: ET2/TL-08-1474
Certificate of Need: E002/CN-06-1115

PUC Energy Facility Permitting Website:
http://energyfacilities.puc.state.mn.us/Docket.html?Id=19860

PUC eDockets Website:
https://www.edockets.state.mn.us/EFiling/search.jsp
(At Docket Number enter "08" for Year and "1474" for Number then click Search)

Please provide your comments by:

4:30 p.m.

Thursday, April 30, 2009

Comments will be accepted orally and/or in writing at this meeting

You may also submit comments after the meeting via:

- mail
- e-mail
- online through the PUC Website: (http://energyfacilities.puc.state.mn.us/publicComments.html)
- fax

Project Contacts

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