



office of  
**energy**  
security

- 
- 
- 
- 
- 
- 
- 
- 

# Minnesota's Energy Emergency Plan

*Jeff Haase*

*November 5, 2008*



- 
- 
- 
- 
- 
- 
- 
-

# Three Types of Energy Systems



- Electricity
- Natural Gas
- Petroleum & Transportation Fuels

# Types of Emergencies



- Supply
- Reliability
- Economic
- Health & Environment

# Affect of Emergency



- Scale
  - How many people are affected?
- Scope
  - How many energy systems are involved?
- Severity & Duration
  - How long until we are back to normal?

# Interconnectedness of the energy system



- Supply issues in one system may affect the supply of another system
  - Extended electricity outages can impact diesel supply
  - Natural gas electric generation
  - Pipeline pumping stations

# Causes of Emergencies



- Flooding (Natural Disasters)
- Infrastructure Failures
- Public Health Emergencies
- Sabotage/Terrorism
- Civil Disturbance

# Energy Emergency Responders



- Utilities
  - Electrical & Natural Gas Disruptions
- Refineries & Suppliers
  - Petroleum supply outages/shortages
- First responders, DPS, HSEM
  - Public health & safety
- Government
  - Severe energy supply shortages

# Electric Supply Emergencies



- Transmission line vulnerability
  - Most exposed element of the electric system
  - Rural areas have less redundancy and higher risk
  - Ice Storms and High Wind events present the greatest risk in the state
- Long Term issues
  - Grid congestion
  - Interconnectedness to other areas

# Natural Gas Supply Emergencies



- Extended periods of extreme cold
- Loss of a major pipeline & pumping stations
- Pumping stations
  - Less physical vulnerability than the electric system
- Long term risk is associated with having sufficient line capacity

# Petroleum Emergencies



- Supply emergencies
  - Refinery outages, localized or coincident
    - *Uncertain timelines*
  - Pipeline breaks
- Economic emergencies
  - Supply chain emergencies can lead to econ. emergencies

# Minnesota Statutes

## §216C.15



- Provides the statutory authority for the establishment of rules and procedures for handling energy supply emergencies
- Requires that the Commissioner of Commerce maintain an emergency conservation and allocation plan

# Minnesota Rules 7620

## Petroleum Supply Emergencies



- Energy Supply Alert
  - Based on a six month forecast
  - Department of Commerce Commissioner has sole responsibility for declaring an energy supply alert
- Energy Supply Emergency
  - Based on short-term (3 month) forecast
  - Commissioner recommends an energy supply emergency to the Executive Council or the Legislature
  - An energy supply emergency is declared by the Executive Council or the Legislature

# MN Energy Emergency Plan



- Developed in 2006 with a grant from HSEM
- Prepared by the National Association of State Energy Officials (NASEO)
- Based on the State Energy Assurance Guidelines that have been developed by NASEO
- Covers Electricity, Natural Gas & Petroleum Emergencies

# MN Energy Emergency Plan



Organized into five sections:

1. Legal Authority
2. Key Minnesota Stakeholders
3. Challenges Assessment
4. Operational Plan
5. Appendices

# Energy Supply Emergency



- Upon declaration of an energy supply emergency:
  1. HSEM would activate the SEOC
  2. Commerce analyzes the situation and recommends the least restrictive measures contained within 7620 to eliminate the shortage
  3. Local Energy Conservation Boards are established to hear requests for exemptions or exceptions to the recommended measures
    - *Local Energy Conservation Boards may be established after an energy supply alert declaration*

# Energy Supply Emergency



- Priority uses of both fuel oil and motor fuel are set forth in 7620
- The governor shall select from the measures outlined in 7620 to reduce the fuel shortage

# Fuel Conservation Measures



- Determined by the level of severity of the shortage
  - Public Information & Voluntary Measures
  - Curtailment of lower priority fuel users
  - Employer based motor fuel conservation
  - Purchasing restrictions
  - Strict Speed Limit Enforcement or Reduction
  - 24-hour driving bans

# Minnesota Rules 7615 Petroleum Set Aside Program



- An amount of fuel required to be made available by a prime supplier for utilization by the commissioner to resolve or mitigate emergencies or hardships due to shortages of supply
- 3% of the monthly supply estimate of motor gasoline
- 4% of the monthly supply estimate of middle distillates

# Challenges Assessment (*Vulnerability Assessment*)



- Provides basic data on Minnesota energy consumption
- Assesses the overall vulnerability of the three energy sectors

# Governmental Response to an Energy Emergency



- Abatement of driver hour requirements & environmental controls (if present)
- Immunity from antitrust regulations
- Government assistance in providing supply to critical customers
- Public appeals to reduce driving
- Petroleum supply emergency declaration

# Operational Plan



## Four Levels of Energy Shortage

---

### 1. Monitor & Alert

- Regional shortages are possible, may not be localized

### 2. Mild Shortage

- Tight energy supplies may have short term impacts on energy prices

### 3. Moderate Shortage

- 10 to 15 percent reduction in products for three weeks or more

### 4. Severe Shortage

- 20 to 30 percent or greater reduction in products for an extended period

# Mild Shortages (tight supplies)



- Authorities receive information from IOUs and MISO if an electric capacity deficiency is anticipated
  - Utilities and petroleum suppliers typically provide seamless work-around
- Utilities may request voluntary load management
- LDCs may warn authorities of potential supply problems
  - Gas providers typically find alternative supplies

# Mild Shortage Response



- Energy Supply Alert could be declared
- DOC & HSEM to consider public information campaign to inform consumers about ways to reduce demand
- PSAs could be issued requesting that consumers take voluntary actions
- DOC & HSEM monitor supply & demand

# Moderate Shortages (10 to 15 percent supply reduction)



- Utilities & petroleum suppliers find it increasingly difficult to provide seamless work-arounds
- Natural gas companies may:
  - Request emergency supplies from unaffected suppliers
  - Pursue spot market purchases
  - Curtail interruptible customers
  - Augment supplies with LNG & propane
  - Request that customers with fuel switching capabilities use their alternative source
  - Adjust gas pressures as needed

# Moderate Shortage Response



- Energy Supply Alert
- Drivers Hours of Service waivers
- Increased efforts to provide public information on ways to reduce demand
- Continued analysis of energy supply
- Begin implementing voluntary and least restrictive measures per 7620
- Mandatory conservation measures may be necessary for some sectors
- SEOC may be activated

# Severe Shortage (20 to 30 percent supply reduction)



- Area utilities may request government approval to implement a schedule of mandatory conservation measures and/or rolling blackouts
- Commercial and industrial users may decide to limit operating hours

# Severe Shortage Response



- Energy Supply Emergency Declaration
- SEOC activation
- Drivers Hours of Service waivers
- DOC provides recommendations on appropriate course of measure implementation to reduce consumption
- Communicate state set aside needs to prime suppliers for priority users
- Heated shelters may be necessary for persons heating with fuel oil if the shortage is during winter months



office of  
**energy**  
security

- 
- 
- 
- 
- 
- 
- 
- 

Thank You!

Questions?

*Jeff Haase*  
*jeffrey.haase@state.mn.us*  
*651.297.5648*



- 
- 
- 
- 
- 
- 
- 
-