MONTANA ENERGY ASSURANCE PLAN

2012 UPDATE

Montana Department of Environmental Quality
Contact: Jeff Blend, jblend@mt.gov
November 2012

OFFICE OF THE GOVERNOR
STATE OF MONTANA

BRIAN SCHWEITZER
GOVERNOR

JOHN BOHLINGER
LT. GOVERNOR

December 21, 2012

Richard Opper, Director
Department of Environmental Quality
Helena, Montana 59620

Dear Richard:

Thank you for preparing the Energy Assurance Plan to guide your agency and state government in responding to energy emergencies. This is the kind of plan I expected state agencies to prepare when I approved the Montana Emergency Response Framework. Future governors will be able to count on DEQ carrying out its responsibilities as the ESF-12 primary agency and as the agency to which administration of the Energy Supply Emergency Powers Act has been delegated.

Sincerely,

BRIAN SCHWEITZER
Governor

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EXECUTIVE SUMMARY

ENERGY ASSURANCE PLAN

The Montana State Energy Assurance Plan (EAP) describes state government's strategy for responding to a full spectrum of potential energy emergencies in Montana — whether a significant disruption of infrastructure or a shortfall in supply, whether driven by natural disaster or by long-term economic or market developments. For this plan, the most critical will be those widespread and often abrupt events that raise the price or reduce the availability of energy at the meter or at the pump.

The EAP will guide state government's own procedures and provides a framework for action. The plan emphasizes preparedness, coordination, and flexibility. This plan is developed to foster coordination and mutual support between the efforts of the energy sector and the state should an energy emergency arise. Further, the plan provides a great deal of flexibility to address the broad spectrum of possible emergencies that could emerge.

This Energy Assurance Plan contains steps state government might take to mitigate the effects of an unfolding emergency and perhaps in some instances to prevent an emergency altogether. The plan is based upon the assumption that even during an emergency, voluntary measures are preferred to mandatory measures, and market forces are preferred over quotas or other directives that tamper with energy product pricing and/or availability. Energy products will ultimately be most effectively rationed by rising prices and by the efforts of suppliers to maintain stable and effective delivery systems.

Specifically, this plan guides 1) how state government gathers information on the nature of the unfolding emergency, 2) how the needs of the energy sector will be conveyed and explained to those agencies and departments of state government most capable of providing assistance, 3) how the public will be informed about the emergency and advised on steps to take, and 4) how the state, if necessary and to the extent possible, will support essential services and distribution of energy products during an emergency.

This plan is a general user's guide for public employees to respond to an energy emergency. The plan provides the framework for the development of Standard Operating Procedures to assist in the conduct of an emergency response. It contains definitions of legal authorities, roles and responsibilities, and command structures, as well as historical and current information about the state's energy products, its delivery infrastructure, and capacities and capabilities. Both the immediate and long-term aspects are served by an "Energy Emergency Rolodex," a comprehensive listing of energy emergency contacts within state and local government and, more importantly, within the utilities, electric cooperatives, petroleum refinery and pipeline operators, and key energy sector organizations. The EAP also addresses DEQ's responsibilities as the primary agency for Emergency Support Function 12 (ESF-12) under the Montana Emergency Response Framework (MERF) and its role the Energy Supply Emergency

Powers Act, which applies only to the most serious events, those in which the Governor formally declares an energy emergency.

The EAP will be updated regularly. It eventually will be revised to conform to DEQ's Emergency Operations Plan once that is adopted and becomes the framework for all of DEQ's emergency response.

Chapter 1. INTRODUCTION

The Montana Energy Assurance Plan (EAP) addresses emergencies, both short-term and long-term, that result from significant disruptions in the energy infrastructure or from fuel shortages and price increases. In the immediate aftermath of an infrastructure disaster, the EAP guides how technical information about the energy sector is incorporated in the state's response. During a significant shortage of energy supplies, the plan guides the state's efforts to manage the shortfall.

Approach

Like other Western states with small populations, Montana can neither staff nor maintain a permanent energy emergency unit. To draw an analogy, larger cities might afford to fund and maintain a city fire department; smaller jurisdictions make do with the volunteer fire department. Accordingly, the goal of this plan is to provide a framework within which a coherent and effective response to any energy emergency can be organized as the emergency unfolds.

Each energy emergency event is unique with quickly changing circumstances and consequences that may vary greatly in intensity and duration. Therefore, response actions to emergencies necessarily must remain highly flexible. Because energy industries already have emergency response measures in place, a major role of the plan is to ensure state actions and industry actions are coordinated and mutually supportive. This plan also suggests steps that DEQ may take in some cases to either prevent an energy emergency or to minimize it as it is unfolding.

When energy and fuel are in short supply, they will be allocated either by price or by organizations, public or private. During an emergency, natural gas and electricity transmission operators will do what is necessary to keep the system stable. That is, utilities will shed as much load as necessary to maintain the stability of the transmission system and in that sense, ration the product. Prices for electricity and natural gas customers eventually respond to the shortages, though only gradually, after requests, hearings, and approval by the regulating authority or as contracts are renegotiated. The petroleum system, on the other hand, is rationed by almost real-time pricing. Any level of petroleum emergency is seen almost immediately in the price at the pump.

To an extent, state emergency response efforts will build on existing programs. For example, the state has had a long-standing policy to promote energy conservation and renewable energy. These policies may help to prevent an energy emergency and the staff and materials associated with these programs could quickly be focused on responding to an emergency. But because the energy system tends to naturally balance supply and demand, there will be little or no reserve of desirable resources (i.e., renewables or demand reduction programs) to mitigate the effects of a true energy emergency. To complicate emergency preparation, neither the state nor the federal government can be expected to develop meaningful energy policy solely in response to

potential emergency scenarios. In short, Montana will have few legal or policy resources sitting on standby, ready to be used in the event of a major energy emergency.

Montana's plan recognizes the difference between an emergency involving an energy facility and one involving the energy system. The former involves failure of a component of the energy infrastructure. For the most part, disasters such as the downing of an electricity transmission line or the failure of a dam, while dangerous to those nearby and expensive to replace, pose no great threat to the functioning of the energy system, although there are exceptions. An energy system emergency, on the other hand, does pose a greater threat. A system emergency might involve infrastructure in Montana, such as the rupture of a main natural gas transmission line during winter, but more likely will be caused by events outside of Montana, such as hurricanes in the Gulf of Mexico, an oil embargo, or region-wide drought. An emergency could come on suddenly, but one might also develop in slow-motion. This plan assumes the most critical emergencies will be system emergencies, widespread and often abrupt events that raise the price or reduce the availability of energy at the meter or at the pump.

A facility-type of emergency usually will be handled by the affected energy company, possibly with support from the local government emergency management agency. Should the event be large enough to require state assistance, DEQ's role would be to advise responding agencies — typically led by Disaster and Emergency Services (DES) — and the Governor's office. For example, certain features and requirements of the energy infrastructure may need to be highlighted and considered before formulating an effective response. A system emergency, unlike a facility-limited event, requires DEQ to assume a broader, more involved role. For example, demand-side reductions might have to be formulated and implemented at the same time that the state is supporting the repair and return to service of energy infrastructure.

In summary, during an energy emergency the state would strive to protect and facilitate restoration of the supply and/or transmission system, encourage reductions in demand, and address the needs of high-priority consumers — however they might be defined — receive sufficient service. Specifically, the plan guides:

1) how the state gathers information on the nature of the unfolding emergency,
2) how the needs of the energy sector will be conveyed and explained to agencies and departments of state government capable of providing assistance,
3) how the public will be informed about the emergency and advised on steps to take, and
4) how the state will provide and, if necessary and to the extent possible, apportion essential services and energy products during an emergency.

Nonetheless, the lead responsibility for restoring infrastructure remains with the affected companies or energy sectors.

Overview of Plan

This plan is intended for public agencies, but it should serve energy suppliers, utilities, electric cooperatives, pipeline operators, refiners, and key service providers as a

general guide to actions by state government in an emergency. Important energy background information and supporting data is contained in the plan and appendices and a range of response options is presented. Information links are also imbedded in the plan to direct users to data housed in other state and federal agencies.

Response options in the plan generally emphasize market-driven solutions, industry and commercial sector efforts, public information, voluntary actions, and wherever possible, existing local and regional support programs. Under certain extreme circumstances, the Governor can mandate state and local government agencies to take certain specific and may mandate certain actions by the private sector and consumers, including rationing of select energy products and/or reserves and mandatory conservation measures.

Supporting the plan are different collections of background information, including: current statistics on the various energy sectors' production and generation capabilities; infrastructure components, pathways, pipelines, and transportation networks; key personnel in the public and private sectors and their respective roles and responsibilities; Standard Operating Procedures (SOPs) that will be developed and updated over time; and the "Energy Emergency Rolodex" — a comprehensive list of energy emergency contacts within state and local government and, more importantly, within the utilities, electric cooperatives, and select key private contracting companies. These will assist managers to select the most appropriate emergency response options for a given event.

Roles and responsibilities are outlined in the plan, according to provisions of Montana's state energy emergency statutes. The Governor is the top state authority and is assigned various powers by statute. Primary advice and leadership of response efforts is provided by the state agencies whose responsibilities most closely address the nature of a specific emergency.

The Department of Environmental Quality (DEQ) coordinates and facilitates interaction between the agencies and the Governor's Office for aspects of an emergency that touch upon energy, its availability, its infrastructure, and its pricing and marketing. This authority comes from two sources. The Montana Emergency Response Framework designated DEQ the primary agency for the state's Emergency Support Function 12 (ESF-12), which addresses the energy components of emergencies and natural disasters. The second source, delegated to DEQ by the Governor, is the Energy Supply Emergency Powers Act (90-4-301, MCA), which calls for development of an energy emergency plan and the gathering of necessary data.

Other state agencies, such as Department of Administration, Department of Justice, Department of Natural Resources and Conservation, Public Service Commission, and Montana Department of Transportation could have supporting roles to play in an energy emergency.

The Energy Assurance Plan was funded in part by a U.S. Department of Energy grant entitled "Enhancing State Government Energy Assurance Capabilities and Planning for

Smart Grid Resiliency Funding." The structure of the initial draft was based on the State Energy Assurance Guidelines prepared by the National Association of State Energy Offices (NASEO). The final version reformatted the content recommended by NASEO to better conform to Montana's needs. The plan will be revised again in the future as the recently adopted Montana Energy Response Framework (MERF) is fully implemented.

This plan will be reviewed and updated as needed, at minimum during the first part of every even-numbered year. Should the update identify additional needs, this schedule will allow requests for resources or authority to be made at the following legislative session.

Relation of the EAP to other energy emergency efforts

The Department of Environmental Quality (DEQ) is the designated primary state agency for several energy related initiatives: (1) Emergency Support Function 12 (ESF-12), (2) the Energy Assurance Plan (EAP), and (3) staffing actions taken under the Energy Supply Emergency Powers Act.

1. ESF-12 covers the energy components of emergencies and natural disasters under the Montana Emergency Response Framework (MERF), which is modeled on the federal National Response Framework established by the Department of Homeland Security. The Disaster and Emergency Services Division, Department of Military Affairs, is the coordinating agency for the MERF. As the primary agency for ESF-12, DEQ is the subject matter expert on energy within state government's emergency response and also could play operational roles.

2. The EAP guides DEQ in particular and state agencies in general in responding to emergencies involving the energy sector. The ESF-12 annex to the MERF incorporates the EAP by reference. As a separate, comprehensive plan, the EAP expands on the essential elements of state agency roles and responsibilities under the ESF-12 annex and the Energy Supply Emergency Powers Act.

3. The Energy Supply Emergency Powers Act (Title 90, chapter 4, part 3 MCA) and accompanying rules set requirements for information exchanges prior to major emergencies and outline potential actions the Governor might request or order of state and local governments, the energy sector and consumers during major emergencies. These emergency powers are specific to energy and are in addition to the general emergency powers in Title 10 of the MCA. Unlike the ESF-12 annex or the EAP, this Act focuses on the most serious events, those for which the Governor formally declares an energy emergency. DEQ serves as staff to administer the Act and update the rules.

Contents of Plan

Chapter 2 provides a brief overview of Montana's major energy sectors including recent consumption, production and infrastructure data.

Chapter 3 discusses various plausible events that could cause an energy emergency in Montana. The chapter identifies the most likely type of event for each sector, including in-state and regional or international events.

Chapter 4 describes the various state and federal agencies and their roles in the event of an energy emergency.

Chapter 5 outlines the general management approach to energy emergencies. The chapter discusses the stages of an emergency, coordinating state staff during energy emergency response, problem identification and assessment, tracking energy supply disruptions, and communications.

Chapters 6, 7 and 8 summarize the energy emergency plans for the electricity, natural gas and petroleum sectors.

Chapter 9 outlines what the state can do in case of a pricing and market emergency.

Chapter 10 discusses the limited amount the state can do in the case of a cyber-emergency.

Chapter 11 discusses state plans to enhance resiliency.

Appendix A contains definitions of acronyms and terms used in the EAP.

Appendix B is a comprehensive listing of expert contacts within the various energy sectors and partnering state, federal, and provincial agencies is known as the Energy Rolodex (redacted).

Appendix C reviews historical incidents that pertain to energy assurance.

Appendix D summarizes the state legal authorities pertaining to energy assurance.

Appendix E has information on the Federal Emergency Management Administration (FEMA) and the National Response Framework.

Chapter 2: ENERGY SECTOR OVERVIEW

Montana is a major producer of electricity, coal, natural gas, and petroleum. This production and associated transportation networks give Montana extra resilience in the event of an energy emergency but the possibility of an emergency is far from eliminated. The energy sector is summarized in this chapter.

Montana generates far more electricity than it consumes. Montana produces about 3,300 aMW annually, but Montana consumers use only an estimated 1,600 aMW. (All figures based on 2010 data.) The difference is exported, primarily to Washington and Oregon. (An average megawatt, or aMW, is the amount of electricity a generator of 1 MW capacity could produce if it operated continuously all year. On average, 750 Montana households consume about an aMW each year.) Most of the electricity is powered by the combustion of coal (63 percent) followed by hydro (32 percent). The remainder is generated by oil and renewable sources such as wind, with an increasing amount produced by natural gas plants. Montana straddles the two major electric interconnections in the U.S. Most (90 percent) of Montana's load is in the Western Interconnection, which encompasses all or most of 11 states, two Canadian provinces, and a bit of northern Mexico. The high voltage lines in Montana are owned by NorthWestern Energy, the Bonneville Power Administration, the Western Area Power Administration, PacifiCorp and Montana-Dakota Utilities. The largest transmission line is the double-circuit 500 kV line originating at Colstrip with a corridor through western Montana to the West Coast.

Montana is the fifth largest producer of coal in the United States, with almost 45 million tons mined in 2010. In recent years, about three-quarters of Montana coal production has been shipped to out-of-state electricity generators; the rest is burned in-state to produce electricity. Over the last decade, Michigan, Minnesota, and Montana used about three-quarters or more of all the coal produced in Montana. Montana coal consumption has been more or less stable since the late 1980s, after the Colstrip Unit 4 generator came online. Almost all of Montana coal consumption is for generating electricity, primarily at the mine-mouth plants at Colstrip.

Commercial-scale wind is the only new renewable technology approaching economic viability for electricity generation in Montana. (Conventional hydroelectricity from large dams has been generated in Montana for more than a century.) Montana has abundant wind energy resources. About 400 MW of generation capacity is currently operational, mostly at two developments: Judith Gap in west-central Montana and the Glacier Wind facilities along the northern Rocky Mountain Front. Additional wind projects have been proposed and are in various stages of development.

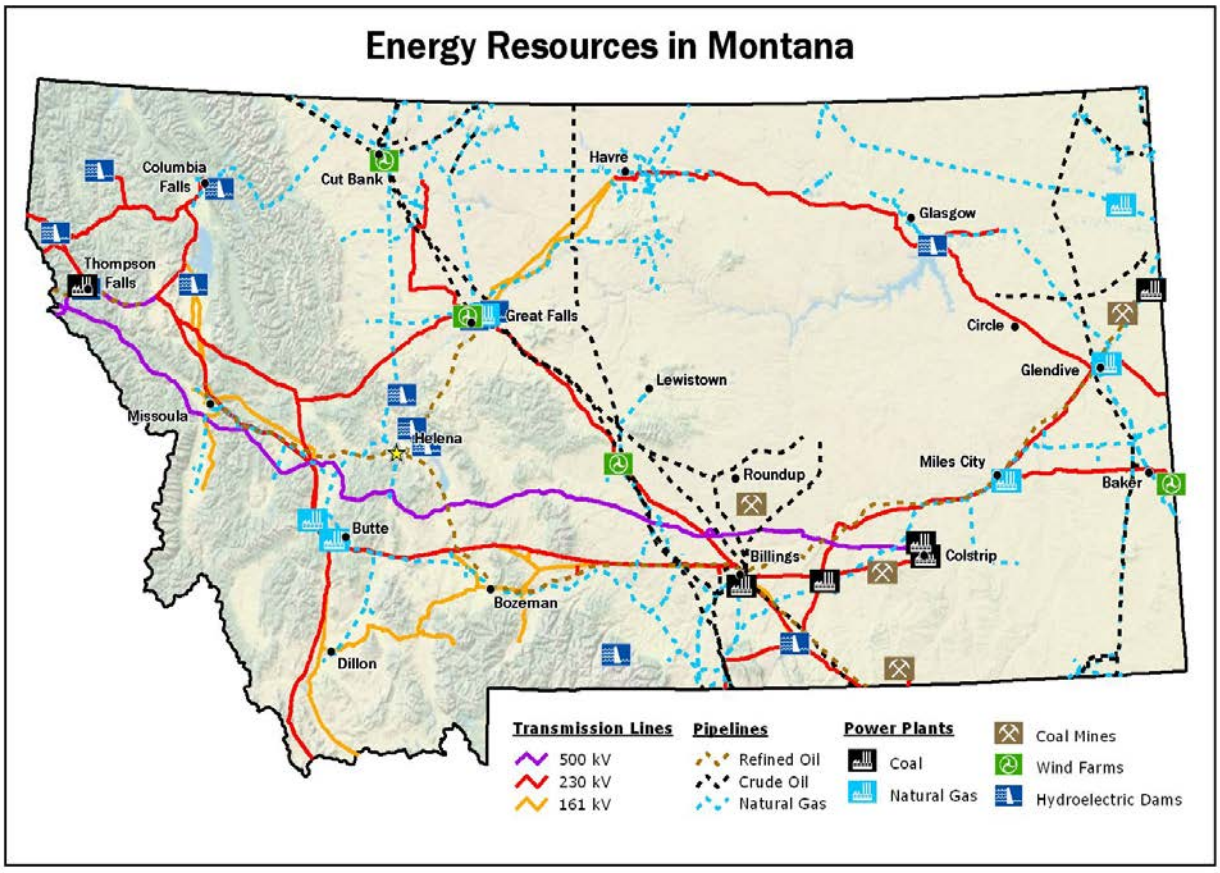
The state of Montana is a net producer of natural gas; it currently produces more natural gas than its residences, businesses, and industry consume. However, because of the configuration of the pipeline systems, most of the state's production is exported and most of the state's consumption is imported. In 2010, Montana produced 87.5 billion cubic feet (bcf) of gas. The same year it consumed 72.0 bcf. The bulk of Montana

production is exported, piped from the state to Saskatchewan, North Dakota, and Wyoming. The largest export volume appears to be exported to North Dakota. Roughly half of Montana consumption is imported, largely from Alberta, Canada. The basic structure of natural gas transmission in Montana features large linear mainlines with numerous radial lines that branch off. Since it is not a more circular system with numerous loops, a major break in a main line could leave few alternative options to deliver natural gas to customers.

Montana's annual oil production peaked in 2006 at approximately 36 million barrels. In recent years, around 96 percent of crude oil production in Montana has been exported — mostly to Wyoming and beyond through the eastern pipeline system, which is not connected to any of the Montana refineries. Montana has four refineries, with a combined capacity of 182,500 barrels/day; almost all the capacity is in the three Billings-area refineries. As with natural gas, the configuration of petroleum pipelines means Montana both exports and imports crude. In the last decade, less than 2 percent of the crude processed at Montana refineries was produced in the state. About 85 percent of refinery crude was produced in Alberta and around 13 percent came from Wyoming. Almost all refinery output is shipped by pipeline. The Billings area refineries ship their products to Montana cities and points east (Glendive, Fargo, N.D.), south (Wyoming and beyond), and west (Montana cities and Spokane). The transportation sector is the single largest user of petroleum. Montana has access to plentiful supplies of propane, including sources from Canada.

Future updates to the information in this chapter can be found in *Understanding Energy in Montana* (http://leg.mt.gov/content/Publications/Environmental/2009-understanding-energy.pdf), published by the Legislature's Environmental Quality Council in conjunction with DEQ. The publication is designed to inform lawmakers and the public about electricity, electricity transmission, oil, coal and natural gas in Montana, as well as available information on renewable energy. The publication provides statistics and an explanatory chapter on each of these products and energy sectors. The statistics are updated annually and are located at energizemontana.com (http://deq.mt.gov/Energy/HistoricalEnergy/default.mcpx).

Map of Montana Energy Facilities, 2011



Chapter 3. EVENTS LIKELY TO CAUSE AN ENERGY EMERGENCY

The following is a list compiled by DEQ of the general types of energy emergencies that could affect Montana, organized by energy product. It likely is not exhaustive, but these are types known to be possible. For Montana events, an asterisk (*) designates DEQ's current estimation of which type could potentially pose the largest threat for each energy sector. Energy companies and agencies generally maintain their own assessments of specific points in their infrastructure that are particularly vulnerable. Historical events and emergencies are discussed in greater depth in Appendix C. This appendix shows the wide range of events that could spark an energy emergency.

It's quite possible that the most serious and widespread energy emergencies will be events that don't involve infrastructure in Montana. The only energy supply alert in Montana was declared in response to a Pacific Northwest drought in 1977. The only energy emergency was declared in 2005 in response a severe run-up in natural gas prices. And the only mandatory allocation of energy products was in response to the oil embargos in the 1970s.

In-State Events

Electricity Sector

- *****Wildfires taking down more than one transmission line
- Destruction of a major sub-station and surrounding transmission lines
- Major failure at two or more Colstrip generation units
- Destruction of multiple transmission lines into one city
- Natural gas outage in cold weather causing a large surge in electricity demand for electric heating

Natural Gas Sector

- *Breaks in major Montana pipelines, especially between Helena and Canadian border
- Destruction or failure of a key compressor station
- Low pipeline pressure due to an extreme cold weather event
- Breaks in two major pipelines in southern Alberta
- Severe cold weather freezing up equipment at a city gate

Petroleum Sector

- *****Destruction and/or disruption of crude oil lines out of Canada into Montana
- Refinery explosions and/or fires
- Refined product pipeline breaks
- Loss of reliable electricity delivery to production fields and/or larger infrastructure

Regional or Wider-Area Events

Electricity Sector

- Prolonged drought that might affect hydroelectric output
- Wildfire seasons that endanger transmission lines

Natural Gas Sector

- Shortages caused by market factors inside and outside of Montana, such as broad shift from coal to natural gas to generate electricity or power transportation

Petroleum Sector

- Hurricanes on the scale of Katrina
- International incidents, such as closure of the Straits of Hormuz or an OPEC embargo
- Shortages in Midwest that draw propane supplies out of the state

All Fuels

- Cyber attack that disrupts communication or control systems
- Lack of stockpiles of various energy equipment, with spare parts having to come from other countries (particularly certain electricity transformers and controls)

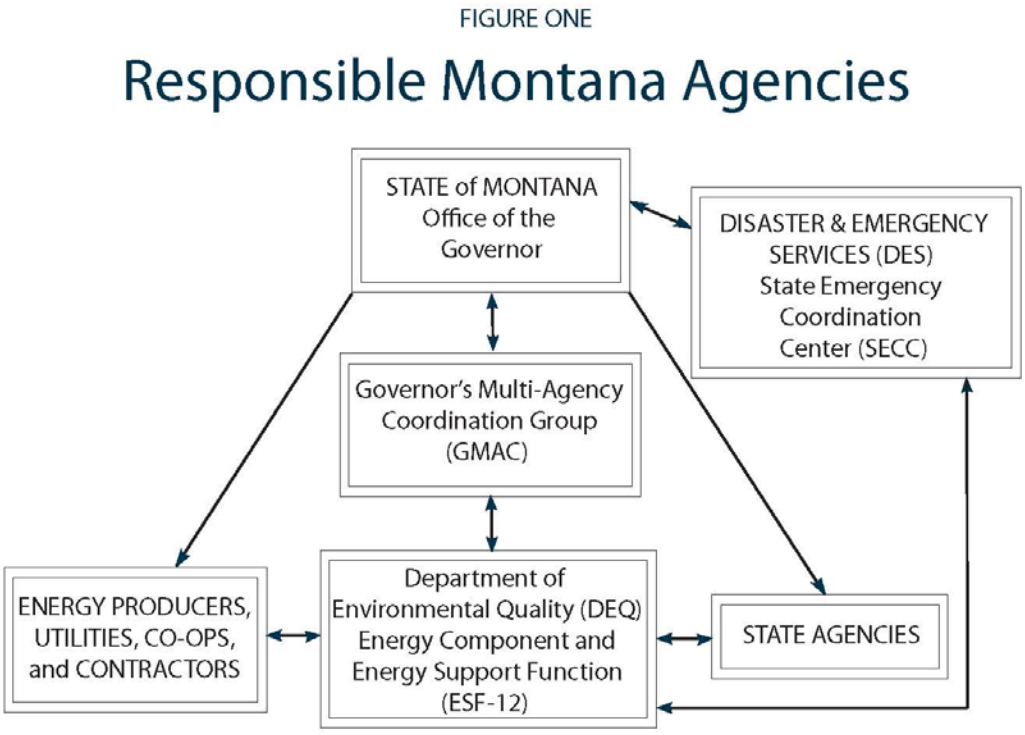
Chapter 4. RESPONSIBLE AGENCIES AND ROLES

General Outline

The Governor ultimately is accountable for the state's response to any emergency. In the event of an energy emergency, the Governor is specifically authorized by statute to take actions up to and including "implement(ing) programs, controls, standards, priorities, and quotas for the production, allocation, conservation, and consumption of energy, including plans for the curtailment of energy" (Energy Supply Emergency Powers Act). He may establish a Governor's Multi-Agency Coordination Group (GMAC) of senior officials to provide policy coordination during an emergency.

The Montana Department of Military Affairs (DMA) coordinates the state's response to emergencies. The DMA's Disaster and Emergency Services Division (DES) is recognized by the federal Department of Homeland Security, and established in state statute, as the lead emergency agency in Montana. The Montana Emergency Response Framework (MERF) is modeled on the federal National Response Framework. DES is the coordinator for the fifteen Emergency Support Functions (ESFs), as defined by both the federal and state frameworks. Emergency Support Function-12 (ESF-12) covers the energy component(s) of a disaster or emergency.

FIGURE ONE



As the primary agency for ESF-12, the Department of Environmental Quality (DEQ) would support the Montana Emergency Response Coordinator within DES during an energy emergency, whether for a short-term and facility-specific event or long-term and systemic episode. As part of Emergency Support Function-12, DEQ will act as a single point of contact and liaison for the state on energy matters, providing direct coordination with Disaster and Emergency Services (DES) and all other state, regional and federal departmental response elements as requested by the affected utility(s) and/or fuel supplier(s). Additionally, DEQ may be requested to brief the DES coordinator, the Governor's Office, and pertinent state agencies in the event of an energy emergency. Other state agencies may play supporting roles for the Emergency Support Function-12, if ordered by the Governor.

State Level Agencies and Governor's Office

Office of the Governor

Under Title 10, MCA, the Governor has broad powers to respond to emergencies of any type. The authority to conduct energy planning and preparation is vested in the Governor's general powers. In addition, the Governor has specific authority under the Energy Supply Emergency Powers Act (Title 90, chapter 4, part 3 MCA) to plan, to gather necessary data, and to order certain actions be taken in a declared emergency.

The Office of the Governor has the following responsibilities with respect to energy emergencies:

- Officially designate Energy Supply Alert and Energy Emergency by executive declaration (see Appendix D).
- Invoke and implement emergency powers as authorized by the Legislature.
- Direct DEQ, the ESF-12 Primary Agency, to implement the Montana Energy Assurance Plan and to assist in carrying out the Governor's energy emergency powers.
- Direct relevant agencies to support the response to an energy emergency.
- Designate the State Essential Functions (SEFs) as part of Continuity of Government policy (see DoA below).
- Review response plan recommendations by DES and Emergency Response Teams, including DEQ personnel working on the energy component of an incident.
- Assemble the Governor's Multi-Agency Coordination Group (GMAC) for an emergency.
- Ensure legislative leadership is kept informed about emergency response efforts.
- Lead public information efforts, in consultation with DEQ.

Department of Administration

The Department of Administration (DoA) manages many of the state buildings and sets general human resources policies for the state. DoA also houses the state's Continuity

Services function which establishes protocols for state agencies in the event of emergencies. As part of this function, DoA houses the Business Continuity Plans, which identify orders of succession and delegation of authority for key leadership and senior management in the event of emergencies, comparatively rank services/processes against the State Essential Functions (SEFs), and identify all resources necessary to perform the services/processes. These essential functions constitute the most critical services of government and are established by the Governor's Office. The agency administers the Living Disaster Recovery Planning System (LDRPS or L-10) which, as its name implies, manages the State's continuity plans. The DoA also administers Notifind, the State's tool for emergency notification (via phone, e-mail, and text messaging).

If called upon, DoA's energy emergency functions could include:

- Implement the Business Continuity Plans and L-10 systems as necessary to ensure that essential functions are maintained within agencies that are preoccupied addressing an energy emergency.
- Establish energy saving alternate work schedules for state employees, such as telecommuting and flexible time.
- Change building operation standards and procedures to reduce energy use.
- Serve as lead agency in retrofitting state buildings to improve energy efficiency.
- Implement policies to reduce liquid fuel use by state employees, such as alternate commuting methods for state employees (ride sharing, public transportation, and bicycling to work).
- Restore communication and data channels as necessary for Emergency Support Function-12 agencies to respond to an energy emergency.
- Provide public information support, especially website support for communications.
- Provide space for ESF-12 functions in the Mitchell Building, which has generator backup power and training rooms.
- Provide assistance through the State Procurement Bureau with:
    - emergency contracting
    - processing fuel and purchasing cards applications
    - temporarily increased limits on fuel and purchasing cards
    - use of term contracts for bulk gasoline, diesel, and propane distribution for emergency delivery services.
- Provide services such as 'energy' to state properties in Risk Management and Tort Defense insurance programs *if the interruption of energy is caused by a covered peril* or *may* provide for relocation of certain state operations if their facility is unusable for certain reasons. This could include generators to provide electricity, acquiring propane for existing systems, and/or providing temporary propane-powered HVAC systems.

Department of Commerce, Energy Promotion and Development Division

The Department of Commerce's Energy Promotion and Development Division works to attract investment to the state to develop Montana's energy resources and thereby create jobs and increase the tax base. It has close contacts with developers and energy companies of all types. It has no direct state responsibilities during an energy emergency but could provide staff with energy backgrounds to assist during an emergency response.

Department of Environmental Quality (DEQ)

DEQ has been designated the primary agency in the State's response to energy emergencies. DEQ has the following responsibilities with respect to energy emergencies:

- Collect, assess, and provide information on energy supply, demand, and prices.
- Monitor and analyze potential and actual energy emergencies in electricity, natural gas, and petroleum supply and distribution systems.
- Develop and implement contingency plans for energy emergencies.
- Establish and maintain contact with, and provide support to local, state, and federal jurisdictions, and to the private sector.
- Brief the Governor's Office, response teams, utilities, key contractors, and local governments.
- Recommend response plans, including energy conservation measures, to Governor's Office and Disaster and Emergency Services situation coordinators.
- Prepare press releases and public information for review by the Governor's Office and develop public educational material.
- Identify supporting resources to restore energy systems.
- Identify alternate sources of energy available during an emergency.
- Monitor energy consumption by state agencies.
- Coordinate and oversee emergency fuel curtailment, allocation and distribution activities in coordination with Disaster and Emergency Services and the Governor's Office.
- Staff the state emergency operations center for Emergency Support Function-12, if activated.
- Prepare after-action report to identify lessons learned and best practices.
- Work with DoA to implement energy conservation in state facilities.
- Enforce air and water quality regulations.
- Implement plan for temporary suspension of air quality or water regulations to conserve energy supplies.
- Receive reports of damaged underground and above-ground energy supply, delivery, and storage infrastructure from the Underground Tank Management Bureau and offer recommendations pertaining to environmental impact mitigation.
- Monitor a facility's return to environmental compliance after an emergency, including oversight of spills and clean-up of hazardous waste.

- Co-chair (with Disaster and Emergency Services) the State Emergency Response Commission (SERC), which implements federal requirements focused on identifying hazardous materials stored in fixed (non-mobile) facilities.

Fish, Wildlife & Parks

Fish, Wildlife and Parks (FWP), through its Fisheries Bureau, evaluates operations at hydro-electric dams. Emergencies at hydropower facilities can force changes in dam discharges (e.g. operating below established minimum flows, exceeding seasonal flow windows or ramping rates, or spilling and producing gas supersaturation) that impact aquatic or riparian environments.

If called upon, FWP's energy emergency functions could include:

- Monitor and explain aquatic and riparian needs in rivers affected by emergencies or emergency operations at hydro-electric dams.

Department of Justice

The Department of Justice (DOJ) houses the Montana All-Threat Intelligence Center (MATIC), the Montana Highway Patrol, and the Office of Consumer Protection and Victim Services. The Highway Patrol provides law enforcement on the state's highways. The Office of Consumer Protection and Victim Services addresses deceptive practices and market manipulation.

The Montana All-Threat Intelligence Center is a multi-agency entity that resides in the DOJ Division of Criminal Investigation, with participation from the Department of Corrections, the Department of Military Affairs, the United States Department of Homeland Security and the Federal Bureau of Investigation, and other agencies as needed. It contains two units: a Criminal Intelligence Unit and the Critical Infrastructure Protection program. Each contributes critical public safety information to first responders, law enforcement leaders, and government officials. In compliance with Montana law, the Attorney General established an advisory board for the All-Threat Intelligence Center in 2003.

The Montana All-Threat Intelligence Center addresses numerous aspects of the energy infrastructure, particularly those associated with liquid product and electrical transmission. A Critical Infrastructure Field Technician covers 18 sectors of critical assets (including energy) in Montana and an analyst assesses threats to these areas. Approximately 3,200 sites have been identified.

DOJ energy emergency functions could include:

- Assist with county and locality critical infrastructure vulnerability assessments.
- Coordinate with representatives of critical infrastructure to help ensure the security of the sites.
- Contribute to the Automated Critical Assets Management System (ACAMS), which contains information regarding key sites located within Montana.

- Coordinate the Montana Infrastructure Protection Alliance (MIPA), with both private and government entities (e.g., Bonneville Power Administration) that manage critical infrastructure. The Infrastructure Protection Alliance is an organization that includes PPL Montana, DEQ (Water), Rocky Mountain Labs, Montana Refinery, ExxonMobil, Bonneville Power Administration, and MT Rail Link among others. The group meets several times a year and exchanges contact information and areas of expertise.
- Assist city and county governments with their local plans, serving as a liaison between local governments and the federal government.
- Coordinate with the federal Pipeline and Hazardous Materials Safety Administration (PHMSA).
- Coordinate with the 24-hour response desks of the National Guard, Disaster and Emergency Services, and the Highway Patrol.
- Provide escorts to sensitive cargos in times of emergency.
- Enforce speed limits on state and federal routes.
- Address fraud and market manipulation.

Department of Military Affairs

The Montana Department of Military Affairs (DMA) is the "coordinating" state agency under the Montana Emergency Response Framework (MERF). DMA's Disaster and Emergency Services Division (DES) is responsible for emergency preparedness efforts throughout the state. DES manages the state's fifteen Emergency Support Functions (ESFs). This structure parallels that of the federal level managed by Homeland Security. DES coordinates State resources and support to local, state, and other entities requiring assistance.

Disaster and Emergency Services has the following responsibilities with respect to energy emergencies:

- Conduct exercises involving the MERF and ESF partners.
- Activate and manage the State Emergency Coordination Center (SECC).
- Coordinate State resources in response and recovery operations.
- Advise DEQ on response plan recommendations on energy components of broader emergencies, with particular focus on local government emergency management and critical infrastructure issues.
- Decide if and when ESF-12 should be activated.
- Assist DEQ and the affected energy sector(s) to determine needs for resources during an emergency.
- Prepare requests for the Governor's signature for federal financial and physical assistance under the Stafford Act.
- Provide information to county/local governments on the status of the energy crisis and measures required to cope with the situation. Serves as point of contact for the multi-state Emergency Management Assistance Compact (see below)

- Co-chair (with DEQ) the State Emergency Response Commission (SERC), which implements federal requirements focused on identifying hazardous materials stored in fixed (non-mobile) facilities.

Department of Natural Resources and Conservation

The Department of Natural Resources and Conservation (DNRC), through its Forestry Division, is responsible for fighting wildland fires on state and private lands and coordinates with the U.S. Forest Service, Bureau of Land Management and local fire agencies during fire seasons. Its Conservation Districts Bureau works with conservation districts around the state. DNRC maintains current maps indicating the regulated 100-year floodplains along state waterways. The Dam Safety Program maintains an inventory of dams over 50 acre-feet in capacity. High-hazard dams, where failure might endanger lives, are required to have an emergency action plan. The State Water Projects Bureau oversees and manages water storage projects across the State and also owns and manages a 10-MW low head hydropower facility. The Montana Board of Oil and Gas Conservation is under DNRC and assists in compiling current statistics and data about oil and gas production and distribution.

If called upon, DNRC's energy emergency functions could include:

- Monitor and explain fire fighting needs when those fires occur in areas containing energy infrastructure.
- Direct fire fighting assets to protect critical energy infrastructure.
- Gather information on petroleum products shortages in the agricultural sector.
- Monitor petroleum and gas drilling and supply industry.
- Coordinate the Montana Drought Response Plan, which includes hydroelectric facilities.
- Maintain information on the status of water impoundments in Montana.
- Provide technical assistance and guidance to local floodplain administrators for emergency permitting, recovery, and mitigation activities.
- Assess and monitor earthen embankment dams in areas containing energy or transportation infrastructure
- Provide technical expertise regarding general civil engineering issues, with emphasis on dams and canals.

Department of Public Health and Human Services

The Department of Public Health and Human Services (DPHHS) is responsible for overseeing public health activities in the state. In particular, the Intergovernmental Human Services Bureau oversees the activities of the local low-income energy assistance program (LIEAP). An energy emergency could compromise communities to the point that DPHHS would respond under ESF-8 (Public Health and Medical Services) or ESF-6 (Mass Care, Emergency Assistance, Housing, and Human Services).
If called upon, DPHHS' energy emergency functions could include:

- Coordinate with the DPHHS Department Operations Center (DOC) to provide a LIEAP liaison to local agencies

- Serve as a conduit for DEQ to disseminate information to local public health agencies
- Advise DEQ on the prioritization of energy and fuel needs of critical local public health facilities
- Advise DEQ on the fuel needs to perform critical operations for DPHHS

Public Service Commission

The Public Service Commission (PSC) regulates intrastate gas transmission and distribution lines, but not gathering lines. The PSC deals with rates, maintenance, safety and operational aspects, but not security. The PSC regulates natural gas and electricity sales, some telecommunications and some water companies.

The PSC's emergency functions could include:

- Enforce public utility regulations and possibly grant waivers on those regulations.
- Approve or reject requests for changes in utility rates.
- Review and advise DEQ on critical infrastructure issues for intrastate natural gas delivery systems.
- Oversee pipeline safety and some facility infrastructure with some interaction with Pipeline and Hazardous Materials Safety Agency (PHMSA).
- Provide expertise on electricity events.

Montana Department of Transportation

Montana Department of Transportation (MDT) houses the Motor Fuels Section, which tracks the sales of gasoline, diesel, and aviation fuels, and the Motor Carrier Services Division, which regulates truck driver hours.

If called upon, MDT's emergency functions could include:

- Prepare requests to the Federal Motor Carrier Administration for waiver of the number of hours truck drivers may operate during a declared emergency.
- Adjust regulations to allow more fully loaded operations by the trucking industry.
- Clear major roadways to assist energy and utility companies to make necessary repairs to damaged infrastructure.
- Review and advise DEQ on response plan recommendations in regard to transportation issues and transportation-related issues that might affect the energy component of an event.
- Track sales of liquid petroleum products and provide reports and information as requested.

State Level Groups

Governor's Multiple Agency Coordination Group (GMAC)

The Governor's Multiple Agency Coordination Group (GMAC) is an executive-level decision and policy making body responsible for the strategic direction of state level emergency operations. While strategic and tactical issues are managed by Incident Command and the SECC, the GMAC assists the Governor in matters of policy during complex emergency or disaster situations. The GMAC potentially could consist of State Department Directors (i.e., the Governor's Cabinet and State elected Officials — Attorney General, Superintendent of Public Instruction, Secretary of State, State Auditor, Public Service Commission, etc.) as determined by the Governor. The GMAC could be as small as two to three people or include every official, depending on the scope and severity of the event. The GMAC will:

- Analyze all available information about the emergency situation
- Develop, refine, and carry out a joint response and recovery policy
- Prioritize incident response and recovery based on the State Essential Functions
- Plan the deployment of appropriate resources to ensure agencies have adequate support for management of the emergency
- Ensure the response and recovery teams work together in a mutually supportive effort
- Consider legal/fiscal implications
- Review the need for participation by other stakeholders

The policy-level decisions made during the time of an event ensures efficient prioritization and allocation of state resources, providing clear direction to state agencies, and ensuring internal and external support. The ability of the GMAC to accomplish this in a timely manner is essential to successful management of a catastrophic event in Montana.

Northwest Power and Conservation Council (within Governor's Office)

This multi-state council provides electricity planning for the Bonneville Power Administration (BPA) and the Pacific Northwest. Its analysis of strategies for efficiency and its insight on energy forecasts could be useful in assessing an energy situation. However, the Montana office of NWPCC has no direct state responsibilities during an energy emergency.

State Emergency Response Commission (SERC)

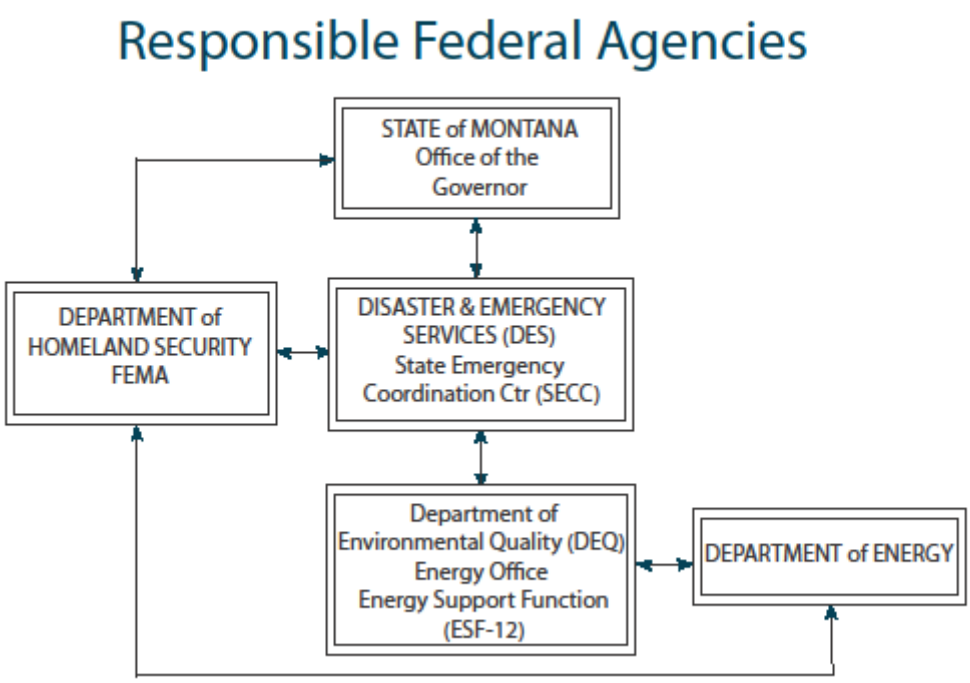
The State Emergency Response Commission (SERC) was originally established to implement federal requirements focused on identifying hazardous materials stored in fixed (non-mobile) facilities. Representatives from law enforcement, the military, utilities and energy sectors, hospitals and healthcare services, firefighting organizations, the weather service, and key state agencies (e.g., Departments of Agriculture, Natural

Resources and Conservation, Transportation) comprise the commission. A representative from the Department of Environmental Quality co-chairs the commission with a representative from Disaster and Emergency Services. The commission could be activated by the Governor in an energy emergency, depending on the nature of the event.

Responsible Federal Agencies and Roles

Though this is a plan for state action, state agencies may partner with various federal agencies at various times. This material is drawn from NASEO State Energy Assurance Guidelines (Version 3.1, December 2009). http://www.naseo.org/eaguidelines/State_Energy_Assurance_Guidelines_Version_3.1.pdf. Federal energy emergency authorities can be found in Appendix C of that publication (pp.82-93).

FIGURE TWO



U.S. Department of Energy (DOE)

The Department of Energy is the primary federal agency for Emergency Support Function-12 (ESF-12) in the National Response Framework. (See the federal ESF-12 annex at http://www.fema.gov/pdf/emergency/nrf/nrf-esf-12.pdf). DOE's Office of Electricity Delivery and Energy Reliability and the Energy Information Administration (EIA) are most closely tied with energy emergency planning. The Montana Department of Environmental Quality is the lead state agency to interact with DOE regarding impending or actual energy emergencies. DEQ also uses data and energy experts located within DOE's Energy Information Administration. Depending on the nature of the

energy emergency, DOE might be involved in damage assessments and restoration of service activities in concert with DEQ and utilities of the affected energy sector(s). The DOE is also the federal agency supporting the development of this Energy Assurance Plan, and has provided a variety of tools and resources to assist this effort.

The Department of Energy maintains an Emergency Management Fundamentals and Operational Emergency Base Program website for DOE facilities and DOE-leased facilities, which may be a useful resource for state planning and response (www.directives.doe.gov/directives/current-directives/151.1-EGuide-1a/view).

The DOE has the following capabilities for meeting Emergency Support Function-12 (ESF-12) requirements:

- Collects and reports to Congress information filed by businesses from all energy sectors.
- Assists in the development of state and local energy recovery priorities.
- Assists affected energy stakeholders in dealing with the Federal Emergency Management Agency (FEMA) by coordinating with publicly-owned electric, gas, and other lifeline utilities in applying for FEMA cost sharing for repairs.
- Assists affected energy stakeholders in obtaining repair crews and materials from outside the affected areas.
- Acts as an ombudsman in conjunction with state energy and emergency agencies to obtain electric power restoration priority to communications, public works (water, sewage), and ancillary energy facilities (e.g., fuel transportation/distribution systems, pipeline pump stations, and refineries).
- Handles requests for unique department assets to support an energy emergency response.
- Maintains the DOE Emergency Operations Center (EOC). The EOC is open 24 hours per day, seven days a week and can be reached by telephone (voice: (202) 586-8100, FAX: (202) 586-8485), or by email at wtchofc@oem.doe.gov.

U.S. Department of Homeland Security, Federal Energy Management Agency (FEMA)

This agency supports states with general emergency backup and processes requests for disaster reimbursement. More information on FEMA and the National Response Framework can be found in Appendix E. FEMA provides the following services:

- Coordinates the federal response to disasters.
- Offers advice on building codes and flood plain management.
- Educates the public about the nature of disasters and how to survive them.
- Equips local and state emergency preparedness.
- Provides web-based geographic information services (GIS) for visualizing state energy infrastructure and other features.
- Makes disaster assistance available to states, communities, businesses and individuals.
- Trains emergency managers.

- Supports the nation's fire services.
- Administers national flood and crime insurance programs.
- Provides information on emergency personnel resources and flooding.

U.S. Department of Homeland Security, Industrial Control Systems – Computer Emergency Response Team (ICS-CERT)

Based out of the Idaho National Laboratories at Idaho Falls, representatives arrive on-scene to help diagnose a cyber attack and reestablish continuity. (http://www.us-cert.gov/control_systems/ics-cert/). The ICS-CERT offers the following services:

- Responds to and analyzes control systems-related incidents
- Conducts vulnerability and malware analysis
- Provides onsite support for incident response and forensic analysis
- Provides situational awareness in the form of actionable intelligence
- Coordinates the responsible disclosure of vulnerabilities/mitigations
- Shares and coordinates vulnerability information and threat analysis through information products and alerts

Federal Energy Regulatory Commission (FERC)

The Federal Energy Regulatory Commission, or FERC, is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC's duties that might be relevant during an energy emergency include the following:

- Regulates the transmission and wholesale sales of electricity in interstate commerce.
- Regulates the transmission and sale of natural gas for resale in interstate commerce.
- Regulates the transportation of oil by pipeline in interstate commerce.
- Licenses and inspects private, municipal, and state hydroelectric projects.
- Protects the reliability of the high voltage interstate transmission system through mandatory reliability standards.
- Monitors and investigates energy markets.
- Enforces FERC regulatory requirements through imposition of civil penalties and other means.
- Oversees environmental matters related to natural gas and hydroelectricity projects and other matters.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA)

The weather data and forecasting services of NOAA are vital to forecasting and monitoring drought conditions that can affect hydroelectric production. The forecasting services have proven valuable during forest fire, cold snap and heat wave events.

U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA); Federal Motor Carrier Safety Administration (FMCSA)

The Montana Public Service Commission and the Montana Department of Justice coordinate with PHMSA for natural gas pipeline safety and related critical infrastructure and cyber security issues. The Denver regional office administers interstate gas lines and all liquid pipelines within Montana. It inspects, regulates, and enforces interstate pipeline safety requirements for pipelines that cross state boundaries. It also inspects, regulates and enforces intrastate liquid pipeline safety requirements – those include crude and petroleum product lines. PHMSA also provides the Pipeline Integrity Management Mapping Application, which allows one to view pipeline locations. The Federal Motor Carrier Safety Administration may grant state requests to waive or adjust the number of hours truck drivers can operate for purposes of an emergency.

NERC, WECC, and MRO

Congress delegated the North American Electric Reliability Corporation (NERC) the authority to establish and enforce reliability standards for the bulk power system in the U.S. It in turn has delegation agreements with regional bodies that oversee reliability of the transmission system. The Western Electricity Coordinating Council (WECC) is a regional organization serving the entire Western Interconnection. It encompasses 14 western states, including Montana. Utilities and electric co-ops in the eastern part of the state are members of the Midwest Reliability Organization (MRO). Within the Western Electricity Coordinating Council and the Midwest Reliability Organization, reliability coordinators have a primary responsibility for the real-time operating reliability of their areas in coordination with its neighboring jurisdictions. These offices must comply with North American Electric Reliability Corporation (NERC) standards without regard to economic considerations and burdening neighboring systems. During an area-wide emergency, they will direct whatever actions are necessary to maintain the stability of the grid.

Mutual Aid Compacts

Emergency Management Assistance Compact (E-MAC)

The Emergency Management Assistance Compact (E-MAC) is a national disaster–relief compact involving all 50 states. It could be called upon in the event of an energy emergency. EMAC offers assistance during governor-declared states of emergency through a system that allows states to send personnel, equipment, and commodities to help disaster relief efforts in other states. All participating states have passed EMAC legislation that addresses the problems of liability and responsibilities of cost and allows

for credentials, licenses, and certifications to be honored across state lines. This compact is managed through the state emergency management agency, which in Montana is Disaster and Emergency Services (DES).

Chapter 5. APPROACH TO ENERGY EMERGENCY RESPONSE

Overview

This section outlines the general organizational approach to energy emergencies. The actions specific to the electricity, natural gas and petroleum sectors are discussed in Chapters 6-8. Actions for issues that cut across all sectors — market emergencies, cyber emergencies and enhancing system resilience — also are discussed in greater depth in Chapters 9-11.

Montana is not able to staff a specific workgroup dedicated to on-going energy emergency work. The number of people dedicated to energy issues is limited and they mostly are occupied with the day-to-day obligations of state government. Therefore, the Energy Assurance Plan serves as a framework around which a response can be assembled in the event of an energy emergency. DEQ will use the EAP as it carries out its ESF-12 responsibilities, and, along with adopted rules, as it administers the Energy Supply Emergency Powers Act.

For all emergencies, the Disaster and Emergency Services (DES) Division, Department of Military Affairs, is the coordinating agency. When an event becomes large enough to require state assistance, DES works with initial responders and local governments to provide event assessment, analysis with recommendations, and state response coordination directly through the Governor's Office. It manages the various Emergency Support Functions (ESFs), with other state agencies providing substantive expertise necessary to respond to a given emergency. Events are customarily managed from the State Emergency Command Center at Fort Harrison outside of Helena. DES is Montana's link to the National Response Framework and the National Incident Management System (http://www.fema.gov/emergency/nims/).

This Energy Assurance Plan is integrated into the Montana Emergency Response Framework Plan (MERF), which is maintained by DES. The Department of Environmental Quality serves as the primary agency for the Emergency Support Function-12 (ESF-12) — the energy components of emergencies and natural disasters. The ESF-12 annex relies heavily on this Energy Assurance Plan.

Within state government, and in addition to its role as the primary agency for Emergency Support Function-12 (ESF-12), DEQ is the agency to which the Governor has delegated responsibility for administering the Energy Supply Emergency Powers Act. As such, DEQ plays a central role in the management of developing energy emergencies. As an energy emergency grows in severity, other agencies can be expected to join in the decision processes, either formally or informally, while policy control shifts to the Governor's Office and operational control to Disaster and Emergency Services. Nonetheless, DEQ remains intimately involved in the decision process throughout an energy emergency.

The state's responsibility in an energy emergency generally will be to ensure all parties and the public receive timely and accurate information about problems in the energy distribution systems and infrastructure. During prolonged events, such as droughts or market emergencies, the state would take the lead in educating, encouraging, or possibly requiring citizens to reduce or shift energy use.

General Actions the State Can Take

1. DEQ will use the EAP as a framework, along with adopted rules, to administer the Energy Supply Emergency Powers Act.
2. DEQ will assist DES in all energy aspects of its response to an emergency and will serve as the primary state agency for the Emergency Support Function-12 (ESF-12) – Energy.
3. DEQ will provide accurate information in a timely fashion to the Governor's Office, other state agencies, industry partners, and to the public.
4. DEQ will provide public education to reduce energy use during an energy emergency.

The remainder of this chapter discusses:

- the four stages of energy events, which DEQ uses to define its responsibilities and government actions,
- coordinating state staff during energy emergency response,
- problem identification and assessment,
- tracking energy supply disruptions, and
- communications.

Authorities for these actions are in Appendix D. An overview of the response process is shown in Figure 3.

Stages of Energy Emergency Response

For purposes of this plan, DEQ divides energy events into four categories, or stages. State agency actions and responsibilities vary by the stage of the energy event. The stages are:

Stage I: Energy Situation Normal
No immediate energy disruption or shortage is identified.

Stage II: Energy Watch
No immediate energy infrastructure disruption or shortage, but a possibility for either or both situations has been identified by DEQ.

Stage III: Energy Supply Threat
Conditions are developing that pose an imminent threat to the integrity of energy infrastructure or availability and price of energy supplies.

Stage IV: Energy Emergency
Conditions cause a shortage of energy in one or more sectors that will significantly affect the economy and public health and welfare.

Each stage requires a different set of actions and responses from state government. A key issue at every stage is communication.

Stage I: Energy Situation Normal
This is the most common situation, with a standard level of concern but no immediate threat of energy disruption or shortage. DEQ maintains routine monitoring of energy markets and potential threats to Montana. DEQ energy analysts review a broad assortment of state-wide data as it becomes available. Analysts periodically meet with critical infrastructure specialists in other state and federal agencies, as well as within the private sector, to assess and update assumptions for energy disruption potential. This monitoring process is described in greater detail below. The Energy Assurance Plan is maintained periodically, with testing of the lines of communication within state government and with federal agencies and private sector companies. Contact information is updated as necessary. Management responsibility for this plan resides at the Planning, Prevention and Assistance Division (PPAD) of the Department of Environmental Quality. Other agencies carry out routine responsibilities and follow routine management practices during Stage I conditions.

Minor energy events occur with some frequency. Typically, these events are identified and successfully addressed by the energy sector itself. In some instances, post-incident reports are issued back to an appropriate state agency. Generally, however, these minor events require little or no action by the state.

Communication Responsibilities: Little to no public communication is required during conditions described as Stage I. Any routine communication would be handled by DEQ energy assurance staff using traditional media outlets and in consultation with the agency's public information officer.

Stage II: Energy Watch
Identification of a Stage II condition is an internal designation within DEQ. A Stage II situation is a foreseeable threat that might affect one or more components of the state's energy portfolio. Management of a Stage II event is largely carried out by DEQ energy specialists, and DEQ energy assurance staff steps up its monitoring efforts. The Director of DEQ is briefed on the potential energy situations that might arise. The Planning, Prevention and Assistance Division may recommend that work assignments be reprioritized to better monitor the situation. DEQ increases contacts with relevant state and federal agencies and energy sector companies; however, little involvement by other state agencies is expected beyond their routine interactions with the energy sector. Disaster and Emergency Services is notified about DEQ's concern over a potential situation.

Since energy companies are responsible to repair their own facilities, infrastructure components, and to restore service, in the majority of scenarios, no further state action would be required as the situation resolves.

Communication Responsibilities: DEQ energy assurance staff maintain overall communication responsibilities. Activities now include briefing the DEQ director and DES staff on the status of the energy event, the potential for situations that could arise,

and recommendations on whether, or at what point, to reallocate staff to help monitor and assist. Communication with industry is stepped up.

Stage III: Energy Supply Threat
Stage III is a designation associated with conditions that have grown to threaten energy supplies, prices and/or infrastructure. A Stage III designation is most likely arrived at through informational exchange and consultation between DEQ energy assurance staff and staff at Disaster and Emergency Services. The Governor has the option of declaring an Energy Supply Alert, which grants that office certain emergency powers (see below). Should DES decide to activate ESF-12, situation coordination and management would likely move from DEQ to the Fort Harrison facilities.

As a situation escalates into Stage III, DEQ staff facilitate more intensive information sharing among the appropriate agencies, convening meetings of state and private sector staff as necessary. DEQ would confer with the Department of Justice and the Public Service Commission should facilities overseen by those agencies become involved. DEQ's monitoring role would ordinarily be in conjunction with the activities of DES, though it could be independent, as in the case of a market emergency (see Chapter 9).

DEQ staff will brief the Governor's Office on the emerging situation, including the Governor's Multi-Agency Coordination Group (GMAC), if the Governor has convened it. Unless explicitly directed by the Governor's Office, each agency director will continue to be responsible for the allocation of staff resources to address the situation.

As the potential for an emergency increases or is realized, DEQ prepares recommendations for action. This is done by the Planning, Prevention and Assistance Division and given preliminary approval by the department director. These recommendations may be reviewed by DES and other participating agencies, if any. These preliminary recommendations are then brought before the Governor's advisors for further review and estimation of the consequences of following or not following the recommendations.

Large-scale events would prompt formal requests for assistance from the energy sector and the public, either directly to the Governor's Office or channeled to that office from other agencies. The energy aspects of these requests or recommendations will be reviewed by DEQ as part of its preparation of recommendations to the Governor. DEQ's recommendations will be based on, or consistent with, those laid out in Chapters 6-8 of this plan. Examples of recommendations might include: the lowering of energy use by state government, voluntary reductions in use by the residential and commercial sectors, temporarily relaxing environmental standards, and so forth.

As authorized by statute (90-4-309 MCA), the Governor may declare an Energy Supply Alert. An energy supply alert is formal recognition of "a condition of energy supply … that foreseeably will affect significantly the availability of essential energy supplies within the ensuing 90-day period" unless some action is taken. An energy supply alert

declaration primarily promotes voluntary and preventative actions. However, the Governor may order local authorities as well as state agencies to take certain actions to reduce the chances of escalation into an energy emergency. Declaration of an energy supply alert activates the authority to implement measures mandated by law; however, it does not automatically implement those measures. The Governor must authorize the specific steps to be taken. Actions taken may include those outlined in regulation or in the EAP, or actions developed specifically to address the current situation.

Communication Responsibilities: Situation coordination and management duties begin to shift toward DES. Communication for energy aspects of the event remain with DEQ as coordinated through the Governor's Office. Overall communications may be assumed through DES, but once again, the energy aspects would be coordinated by DEQ through established agency channels and vetted by the Governor's Office.

The early phases of an energy emergency are addressed by the actions of industry and adjustments to energy pricing. Communications would be independently issued by public information staff of the affected sector. The EAP staff would coordinate and communicate among appropriate agencies, utilities, and energy sector organizations as warranted; public announcements may or may not be warranted. DEQ will review previously prepared informational materials and make revisions as necessary to address the specifics of the event at hand.

Stage IV: Declared Energy Event
A Stage IV designation constitutes the most extreme stress on energy supplies, price, or infrastructure. The threats to these that may have been foreseen in a Stage III event are realized in Stage IV.

A Stage IV event compels the state to work closely with representatives of key affected agencies, utilities, and local governments. DEQ would coordinate exchanges with key energy industry and utility personnel. The Governor can order state and local governments to lead by example to reduce energy use. A public information program, if not already established, would be deployed to encourage voluntary reductions of energy use by the public and business. Communication with the public may be coordinated as necessary with federal emergency management personnel and major industry players through establishment of a Joint Information Center (JIC). Promotion of conservation measures initiated during any earlier energy supply alerts would become more focused, possibly with mandatory actions requested of utilities, businesses and industry, and the general public.

The Governor may declare an "energy emergency," as authorized in the Energy Supply Emergency Powers Act (Title 90, chapter 4, part 3 MCA). An energy emergency is "an existing or imminent domestic, regional, or national shortage of energy that will result in curtailment of essential services or production of essential goods or the disruption of significant sectors of the economy" unless action is taken. Alternatively, an emergency could be "a price of energy" that has similar impacts on the economy or on vulnerable segments of the population. With an energy emergency declaration, the Governor is

authorized under state law to implement such programs, controls, standards, priorities, and quotas for the production, allocation, conservation, and consumption of energy as required.

Declaration of an energy emergency activates the authority to implement measures mandated by law; however, it does not automatically implement those measures. The Governor must authorize the specific steps to be taken. Voluntary measures are always preferred to mandatory measures and market forces are always preferred over quotas or other directives that tamper with energy product pricing and/or availability. If warranted, the Governor's Office may ask for outside help, including that of the federal government.

Communication Responsibilities: Responsibilities are a continuation of those described in Stage III. While any plan requires flexibility, communication responsibilities during a high level of emergency move more completely under the Governor's Office and Disaster and Emergency Services. However, DEQ remains involved and embedded into the decision-making processes pertaining to the energy aspects of the emergency.

Generally, DES controls operational response for emergencies caused by failure or disruption of energy infrastructure. The one exception may be a market emergency. Because Montana law allows emergencies to be declared based on price of an energy product, the Governor could take action without the infrastructure failures or critical shortages of an energy product usually associated with emergencies. This could limit or change the types of actions and the agencies involved in each stage. Until such time as the market distortions result in significant shortages of product, and thereby look like other emergencies, the DEQ director will set operational priorities.

An energy event could occur as part of a larger emergency that imperils human life, property, and commerce. Accordingly, the Governor may choose to declare a general emergency or disaster instead of an energy emergency. The distinction may be of administrative importance by offering greater flexibility to manage the crisis.

The U.S. Department of Energy (DOE) is the primary agency for ESF-12 on the federal level. As the State Energy Office (SEO) for Montana, DEQ and its predecessors have worked with DOE since the oil crises of the 1970s. DEQ administered the federally authorized petroleum set-aside program during that decade. DEQ expects to work with DOE and other federal agencies should a national emergency be declared in Montana.

Coordinating State Staff During Energy Emergency Response

By the time an energy event reaches Stage IV, DEQ and Disaster and Emergency Services will be drawing on the expertise and resources of other state agencies. Activation of Emergency Support Function-12 (ESF-12) formally requires the services of various support agencies. Preparation for this eventuality will start with the implementation of this plan, even before an emergency appears.

This preparation should include meeting with representatives of other emergency response groups, such as the Governor's Multi-Agency Coordination Group (GMAC), to gather information on operations and protocols and how best to coordinate during an energy supply emergency. Preparations should include developing general guidelines on DEQ's role in the establishment of Joint Information Centers (JIC), given various scenarios. Updates of the Energy Rolodex may also be a topic of discussion.

The state's response to a serious emergency would require more staff than DEQ currently assigns to this Energy Assurance Plan. It would therefore be necessary to draw on skilled staff from other agencies. Disaster and Emergency Services has authority to assign Public Information Officers trained in emergency management from other agencies. Other likely areas of needed expertise would be Incident Command System (ICS) services (probably from the Department of Natural Resources and Conservation) and specific energy sectors. For subject matter experts, likely agencies for electricity and natural gas include the Public Service Commission, Department of Commerce, the Northwest Power and Conservation Council (NWPCC), and fuel procurement offices of the Department of Administration; for petroleum products, DNRC, Montana Department of Transportation, and the National Guard. For a long-term emergency, additional public education and outreach experts may be required, more than DEQ currently has assigned to energy. Drafting of staff from other agencies could only occur at the Governor's direction, but advance preparation of Memorandums of Understanding (MOU) would facilitate the process during an emergency. These MOUs will be drafted following adoption of this plan.

Even with the help of personnel outside the agency, a main assumption of this plan is that DEQ energy assurance staff will turn increasingly greater attention to the demands of an emerging situation in place of their day-to-day defined duties, roles, and responsibilities. As with other state employees in supporting agencies, the responsibilities surrounding an energy emergency add to, and do not replace, defined roles, responsibilities, and job descriptions. In the event of a Stage III or IV designated emergency, how day-to-day duties and roles are fulfilled will follow procedures to be outlined as part of DEQ's incident command structure. During an extreme emergency, protocols outlined by the Business Continuity Plans of the Department of Administration's Continuity in Government may be activated. The main steps and stages of this Energy Assurance Plan are entered into the Department of Administration's Living Disaster Recovery and Planning System (LDRPS, or L-10) website along with data provided by the DEQ Planning, Prevention and Assistance Division, in order to facilitate continuity in government.

It may be appropriate to establish an on-going ESF-12 committee made up of representatives from support agencies prior to any emergency. This committee would provide input and guidance on planning and development of Standard Operating Procedures (SOPs) relative to energy emergencies as well as useful components of the universal Incident Command Structure (ICS). This committee would also address cross-agency mechanisms and protocols for intelligence gathering, and information vetting

and verification. As a part of this effort, DEQ will participate in future state-level emergency exercises relevant to energy emergency planning.

Finally, DEQ must develop its processes to accomplish this same coordination within the agency. Based on experiences with the July 2011 Silvertip Pipeline break, DEQ is developing methods, including an internal emergency operations plan, to manage agency response in the event of larger emergencies of any kind, not just energy. The Energy Assurance Plan will be coordinated with these efforts as they develop. Implementation of this plan will include development of emergency response support processes and protocols which the DEQ director can use to identify and reassigning staff.

Still, the small number of the energy assurance staff, all of whom are located in Helena, means that an event affecting Helena could significantly degrade the ability of the state to implement the Energy Assurance Plan. While DES has plans for setting up a command center outside of Helena in the event of a major emergency in the capital, DEQ must develop plans for getting personnel from Helena to that center.

Problem Identification and Assessment

The most basic responsibility in this plan is providing the Governor and other decision makers the accurate and timely information they need to respond to events. The formal identification and assessment by state government of scope and severity of energy events will be performed by DEQ. This vetting includes close consultation with appropriate energy sector personnel. Private entities are generally well staffed to address common disruptions and are best equipped to provide early assessment of the scope, severity, and potential duration of most events. DEQ will receive information during an event, or immediately following cessation of an energy disruption event, dependent upon severity and duration.

Information exchange with Indian Reservations is important should an energy emergency affect those areas. Jurisdictions most likely to be contacted under this plan include the Blackfeet Reservation, which contains critical petroleum and natural gas lines, and possibly the Crow and Flathead reservations, which contain significant dams and transmission lines. Otherwise, an emergency on a reservation sufficient to trigger this plan is more likely to involve ensuring adequate supplies to consumers than restoring infrastructure critical to the entire system. It is important to note that reservations are sovereign governments. Consequently, the state’s authority over local governments does not extend to reservations.

To facilitate consultation with the energy sector prior to as well as during an emergency, DEQ will regularly hold energy assurance forums. A forum would be comprised of industry representatives, both public and private, as well as DES and other state agencies. A difficulty in establishing such a forum is that full representation from all possible areas results in a body too large to function effectively. A forum would meet once or twice a year to discuss emergency preparedness. The main purpose will be to build relationships that allow a response to proceed more smoothly during an

emergency. A forum involving various parts of the petroleum industry probably is most needed, since the industry isn't regulated by the state as are electricity and natural gas. A forum inclusive of all energy sectors is perhaps also more likely to reveal interdependency problems.

Based on DEQ energy sector assessments during an energy event, or based on perceived threats to their own missions, other state agencies may lobby the Governor to declare an energy emergency. This could be the case particularly during market emergencies as prices rise. These ad hoc assessments can be one of the challenges to a well functioning management decision process. The Governor will direct all state agencies to clear energy-related requests through DEQ until and unless the Governor approves a specific alternate channel for the emergency event.

Tracking Energy Supply Disruptions

The Department of Environmental Quality (DEQ) energy supply disruption tracking system is used to identify critical infrastructure in Montana, inform the ESF-12 function about the likelihood of disasters, and to provide a quickly accessible contact list in case of an emergency. The components of DEQ's energy supply disruption tracking system are: 1) historical energy statistics as compiled by DEQ, 2) an emergency "Rolodex" of energy contacts, 3) DEQ's GIS-based energy resource mapping, 4) existing sources for gathering current data, and 5) records of previous emergencies.

In 2010, the Department of Energy's Critical Asset List showed only one asset of national importance in Montana. From a Montana perspective there are many more critical assets than that. Still, the brevity of DOE's list suggests that Montana's energy sector is smaller and better suited to a less formal tracking system than might be appropriate in larger states with a larger number of nationally-designated critical assets. DEQ's tracking process is designed in that context.

Long-term energy trends are followed and monitored by DEQ through statistics collected and published on the DEQ website known as energizemontana.com (http://deq.mt.gov/Energy/HistoricalEnergy/default.mcpx). These statistics rely heavily on information collected by DOE's Energy Information Administration (EIA), and are supplemented and sometimes revised with information gathered by Montana agencies such as the Montana Board of Oil and Gas Conservation or the Montana Department of Transportation. As part of the Energy Assurance Program, these statistics will be updated yearly, rather than on a biennial basis for each Legislative session as previously has been the case. The update will occur toward the end of each calendar year.

Some data on electricity and natural gas consumption in much of Montana are available from the Montana Public Service Commission (PSC) from plans and rate tracking documents filed by utilities. Because these sectors are regulated, information from the PSC can be more timely than that provided by DOE. Unlike electricity and natural gas, the petroleum sector is not directly regulated by the state. However, under the Energy Supply Emergency Powers Act, DEQ has authority to collect information on refinery

slates, pipeline flows, and retail sales. DEQ receives copies of the monthly reports companies in this sector submit to the federal Energy Information Administration (EIA). As part of the Energy Assurance Planning process, a database capable of handling all the data received is being developed, and will be maintained into the future. This will improve the speed and flexibility with which DEQ can analyze trends in refinery output, pipeline throughput, and retail sales.

The historical energy statistics compiled by DEQ form the framework for analyzing an energy emergency. This framework is supplemented by qualitative data from the energy sector. In the course of preparing this plan, DEQ conducted interviews with energy sector actors within Montana to determine their responsibilities, learn about their industries, and explore how they already interact with government agencies during an emergency. Interviews included requests for data relevant to tracking energy emergencies, technical details about various energy systems, information about organizational structure, and system diagrams and maps. This information is kept in DEQ files in electronic format, with key information stored in hard copy. This electronic and paper library contains the background information that will be used during an energy emergency.

DEQ's GIS-based energy resource mapping contains data about many energy resources, non-renewable and renewable, in-production and under consideration, as well as the infrastructure to transmit that energy or product to market. These energy-based layers can be used in conjunction with information on areas of environmental concern, property ownership, and/or land use. The GIS has been developed to help DEQ staff meet the department mission to protect, sustain, and improve a clean and healthful environment that benefits present and future generations as well as to respond to energy emergencies.

Much of the data from the DEQ system also can be accessed through Google Earth. DEQ’s own data will be supplemented with data from the federal Department of Homeland Security’s Geospatial Information Infrastructure. Federal data also will be incorporated into Google Earth.

One product of the interviews done by DEQ is a “Rolodex” of contacts in energy production and transmission companies. The Energy Emergency Rolodex will guide DEQ to personnel with real-time information during an energy emergency. At its most basic, the Rolodex ensures that DEQ has official contact persons identified in energy infrastructure companies and cooperating government agencies to ensure situational awareness and coordination during an energy emergency. The Rolodex covers both private and public sources in Montana and appropriate sources in surrounding states and provinces. The Rolodex includes contacts from utilities, rural electric cooperatives, generators, refineries, pipeline companies, tribal governments, other state agencies, emergency agencies from other states and provinces, Canada’s National Energy Board, and U.S. DOE. The Rolodex is Appendix B of this plan, but is redacted. The process of regularly verifying the contact information in the Rolodex will serve to remain up-to-date

on our contacts, maintain relationships with the contacts, and learn any new information periodically.

This Rolodex information will be kept internal to DEQ, available on a regular basis to those staff members who are part of the team addressing energy assurance. The information will be kept in several formats including hard copy. In the event of an energy emergency, this circle will be expanded to include personnel in Disaster and Emergency Services (DES), personnel in the Governor's Office, and others as deemed appropriate to the situation. The Montana DES is in the process of developing a more comprehensive contact file administered through the Department of Administration, known as Notifind. Select portions of the Energy Emergency Rolodex might be incorporated into this resource as it becomes operational.

DEQ will supplement information from the statistics and the interviews with publicly available information from a variety of sources to provide a current overview of the energy situation, especially for petroleum products. This list of sources will continue to be developed into the future. See individual Chapters 6-8 for lists of specific sources.

Records of previous emergencies (Appendix C) provide additional background information to be used for interpreting current events.

Communications in an Emergency

The procedures in this section are designed to convey important information in the event of an energy emergency. The procedures should ensure that communication channels open and remain open between the Department of Environmental Quality (DEQ) — the primary agency — and supporting state agencies, the Governor's Office, federal agencies, Canadian counterparts, local governments, and the owners and operators of Montana's energy infrastructure. The procedures also serve a function to ensure that public notification and education occurs in a timely, efficient, and credible manner, particularly in instances where emergency conditions become prolonged. These procedures rely on the collection of information from DEQ's contacts in the various energy sectors, verification of field information, and proper dissemination of the best information available.

Communication goals during an emergency are two-fold:

1. To provide clear, concise and consistent information about the emergency to supporting agencies and the public in a timely manner that reflects the changing nature of the energy emergency.
2. To coordinate with supporting agencies, federal agencies, and the media to convey high-quality and meaningful information to target audiences, which may include vulnerable populations, for responding to the emergency.

Broad and effective communications with citizens and targeted public groups works to ensure public safety, awareness, and collaboration at the outset of an impending energy emergency and may actually alleviate or avoid potential damaging effects. The procedures below provide policy and procedural guidance to initiate and maintain

communications between DEQ and supporting agencies, federal agencies, local governments, and the public. Sound communications depend on:

- Development of standardized procedures, protocols, guidelines, and other information management functions.
- Gathering, verification, and dissemination of information from the field as well as from pertinent energy statistics.
- Public distribution of informational material to raise awareness about the status of an energy emergency or potential emergency.
- Public distribution of educational material to lessen, or even eliminate, the effects of an energy emergency.
- Rebuttal of inaccurate or inflammatory information and false rumors.
- Supporting internal efforts of partner utilities and infrastructure owners, state and federal agencies, as well as local governments, to prepare well-vetted, reliable information.
- Measurement and analysis of responses to state information flow and preparation of post-situation review.

Activation

The Energy Communications Procedures would be activated in conjunction with the energy emergency stages as described above; that is, there is not a separate process for communications. Initially, the collection of information from the field and dissemination of information to policy makers and the public would be part of DEQ's routine work. As an energy situation moves into Stage III or Stage IV, these communication procedures become more structured and formal, to ensure information is shared more aggressively and more widely among supporting agencies.

Upon adoption of this plan, one person from DEQ energy assurance staff will be designated by the Planning, Prevention and Assistance Division administrator as presumptive lead information coordinator with overall responsibility for internal and external communications. That designation will be confirmed by the Director or incident commander, as appropriate, should an emergency develop and expand. Ideally, other subordinate positions would be responsible for communications coordination and for communications among state and federal agencies, tribal jurisdictions, as well as local governments.

Contact documentation

During energy emergencies, DEQ staff will be collecting information from the energy sector that may include, but not be limited to, energy inventories, energy supply obligations, consumption data and patterns, curtailment plans and protocols, and energy conservation plans. DEQ energy assurance staff communications officer oversees documentation of the emergency response and ensures all team members are aware of how the documentation will be maintained. Energy emergencies designated at the higher levels of Stage III and Stage IV demand greater documentation of the processes and data that influences recommendations and decisions. Evaluation

and verification of retrieved information becomes more stringent with each stage designation.

The form of the documentation will depend on the nature of the emergency. In more serious emergencies, energy assurance staff likely will be under the direction of Disaster and Emergency Services, in which case its protocols would be followed. For lesser events, or events in which DEQ is in charge, the communications officer will follow the standard operating procedures developed once this plan is adopted. The documentation would include electronic capture of phone logs and email communications as necessary.

Establishing and maintaining communication links

Communication links will be established by DEQ energy assurance staff between the most affected energy sector and then ultimately to energy advisors within the Governor's Office. Initially, DEQ energy assurance staff will send information to the management and senior management within DEQ who then may convey information to the Governor's Office. During Stage II of an emergency, communication between DEQ and other agencies and with the Governor's Office is anticipated to be on an as-needed basis, as will information from those agencies back to DEQ. As an emergency deepens, energy assurance staff will need to stay in closer touch with policy makers. At the discretion of the Director or at the request of the Governor, the team will communicate directly with the Governor's Office, though the Director will continue to be kept informed of the content of these communications. By Stage IV, and possibly sooner, DES will be coordinating the response and energy assurance staff will follow DES protocols. As always, the Governor may choose to direct communications as he or she deems appropriate. All contacts will be documented and relayed to the Director or to DES, depending on the stage of the emergency.

Contact information for state agencies and energy sector organizations is found in the Energy Emergency Rolodex. Contacts for other states are found on ISERnet, hosted by DOE's Infrastructure Security and Energy Restoration Division. The Department of Energy requests each state designate Energy Emergency Assurance Coordinators (EEAC-the state lead for energy emergencies) and State Energy Assurance Planners (SEAP). In Montana, these are the DEQ staff working on the Energy Assurance Plan. Ordinarily, the physical venue for communications operations would be the regular offices at DEQ. Certain emergency scenarios may require DEQ energy assurance team members to report to the Disaster and Emergency Services command center at Fort Harrison and participate in a Joint Information Center (JIC) there, including participation in press briefings and media advisories. DES might also choose to establish a Joint Information Center in the field.

Communications within state agencies and to personnel in the Energy Emergency Rolodex may be conducted by telephone over land lines and cellular connections, and by email and social media accounts. An energy emergency may or may not be accompanied by problems with the telecommunications system. Should such problems occur, energy emergency response will follow the protocols established for emergencies

in general. Emergency communications within state agencies are conducted according to standards established by the Interoperability Montana Technical Committee (IMTC), and include radio sites with emergency backup power systems and redundancies. At least one cellular telephone available to the DEQ communications team will receive authorization for priority access when the network is congested (WPS service). An office landline phone may be designated for priority service as well (GETS card).

Public Outreach Program

Public outreach associated with this energy assurance plan is divided into informational and educational components, as described below. DEQ sees the public as both an audience for information and a supporting actor in alleviating the effects of an energy emergency.

Both the educational and informational components may be targeted to subsets of consumers, including:

- state agency personnel;
- local governments and local government authorities;
- federal partners;
- mass media (state and local media, newspapers, radio stations, and social media outlets); and
- commercial or industrial sectors.

Following adoption of this plan, DEQ will develop standard operating procedures for communications, including templates for press releases and social media.

Public Information

The purpose of the public information effort is to provide accurate and timely information about the emergency and to help direct actions by the public that could alleviate or abate negative effects of the emergency. Should the emergency reach that point, the information will include mandatory actions that the Governor has ordered state agencies and local governments to take. Information on voluntary as well as mandatory actions expected of the public and businesses also will be conveyed, as necessary. Public information directives will be supported by additional educational materials to assist affected residents and commercial sectors in the implementation of the actions (see below).

Public information dissemination will be through electronic platforms such as state agency websites (e.g., InciWeb: www.inciweb.org/ and Newslinks: http://newslinks.mt.gov/) and social networks (e.g., Twitter and Facebook) as well as by distribution through traditional print and electronic media outlets, including newspapers, radio and television stations. DEQ will develop a format and boilerplate for an energy emergency webpage to be put up when needed.

Responsibility for informing the public and the media about the nature of the emergency varies with the stage of the emergency. In a Stage II emergency and possibly even into a Stage III emergency, DEQ would be the direct contact with the public and media. As

an emergency deepens, and certainly once a supply alert or an emergency is declared, dissemination of information from the state to the public and media would become the responsibility of Disaster and Emergency Services or its designate, which could be DEQ. Both DEQ and DES speak for the state with the authorization of the Governor. Accordingly, in certain instances the Governor's Office may choose to be the direct source of information on the emergency. DEQ, DES and the Governor's Office are developing SOPs to ensure clear hand-off of responsibility for public information. Information issued by the responsible office shall be definitive and state agencies and personnel will be discouraged from releasing independent, unvetted statements or material pertaining to the emergency.

The designated information officer within DEQ's energy assurance team will act as coordinator for educational and informational materials received through the reporting structure and then ensure that relevant and verified information is directed immediately to the Director, DES or the Governor's Office as appropriate. The lead emergency staffer in the Governor's Office will coordinate and assist DEQ staff energy analysts in the solicitation and verification of information from utilities, generators, refineries, and select private contractors and companies based upon the Energy Emergency Rolodex. DEQ staff and the Governor's designee(s) — most likely DES or the lead staffer — will coordinate as necessary the release of information to other state agencies and local governments, as well as to the state's media and to the public.

Public Education

The public education effort will be based on the energy conservation educational outreach DEQ's Energy and Pollution Prevention Bureau conducts as an ongoing core activity. This predominately includes advice on energy efficient practices, appliances and current building energy codes. The material is typically available through a variety of sources including press-run publications, on-demand printed material, internet sites with links, and via staff presentations at community seminars, trade shows or forums. Topical energy conservation advisories are issued to the media in response to perceived public demand. For example, educational tips to save transportation energy were issued as gasoline prices reached near-record highs in 2008. Similarly, space heating advisories were issued when natural gas price forecasts reached new highs this past decade. In general, public information staff at DEQ, as well as other state agencies, have latitude in developing and disseminating pertinent educational material.

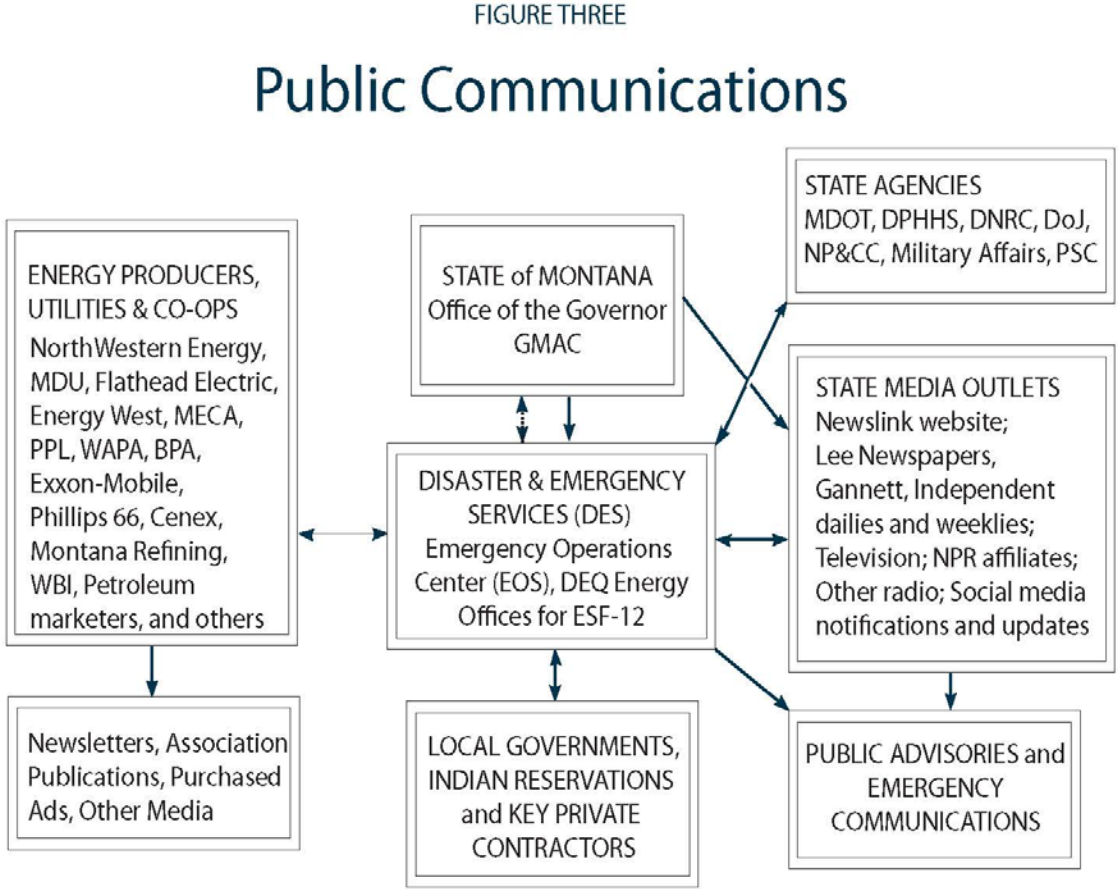
Targeted audiences for public education campaigns may include:

- geographical segments hit hardest by an energy emergency (e.g., an area served by a specific natural gas transmission line);
- demographic segments deemed vulnerable to an energy emergency (i.e., low-income sectors, the elderly, etc.);
- sectors served by a specific energy product (e.g., heating oil or propane);
- commercial sectors to address the effects of an energy emergency (e.g., petroleum fuel distributors).

Initially, the level of energy conservation education or outreach efforts will be reflected by the demands of a Stage I or Stage II situation. The basic structure of this component of public information is expected to remain largely unchanged from routine practices and will be handled by DEQ energy staff. More serious energy emergencies, however, will require more coordination with the Governor's Office in the release of public information, and it will be important that the interaction be as seamless as possible to expedite that process. Since much of the educational information would channel up from the DEQ energy staff, and from utilities and generation companies, expedited clearance by the Governor's media staff and energy advisors should be possible.

Examples of public education under Stage III and Stage IV energy emergencies might include steps residents should take to immediately reduce natural gas use during cold weather while at the same time addressing basic safety issues. The educational component of public information during an emergency should not be confused with conveyance of mandatory actions, which is an informational component. However, educational public information may assist affected residents to implement mandatory activities, such as fuel conservation measures. Some of this material, or at least outlines of it, can be prepared in advance (e.g., minimum gasoline purchase amounts, service station fuel availability signage, etc.).

FIGURE THREE



Chapter 6. ELECTRICITY EMERGENCY RESPONSE PLAN

Summary of Emergency Plan

The transmission grid is more important than any generating facility. Because of the highly technical nature of maintaining the electrical grid, utilities will be responsible for most of the actions necessary to deal with emergency situations. The state's responsibility generally will be to ensure the public receives timely and accurate information about problems on the electrical system and to provide emergency relief to communities disrupted by an emergency in the electrical system. The major exception would be during a prolonged shortage of electricity, where the state would take the lead in encouraging or requiring customers to reduce load.

Actions the State Can Take

1. Understand the needs and constraints utilities and utility customers will face in an emergency
2. Provide accurate information and energy saving tips
3. Lead by example
4. Use its emergency generators (a limited option)
5. Order individuals and businesses to reduce consumption
6. Expand energy efficiency programs
7. Develop tariffs for emergency use (load shedding, peak shaving, economic signals)
8. Relax regulations during an emergency or enforce them differently

1. Understand needs and constraints

The state can encourage greater coordination between itself, the utilities and other sectors and customers but first it must understand how utilities will respond to emergencies. Utilities already are required by federal regulations and industry practice to have emergency plans. These plans, however, could be better coordinated with state government and possibly with other sectors. The most significant ones of necessity focus on the transmission system, rather than on the customers. Finally, as revealed in 2012 by the response to the derecho winds and to Superstorm Sandy, not all utilities are equally prepared, regulations and standards notwithstanding.

At minimum, utilities should provide the state with their plans for emergencies, at least those parts relevant to the state's emergency response. Of particular interest would be utility procedures for rolling blackouts, what circuits are chosen, how long a blackout is maintained, how those decisions are made by the utility actually serving the load. The balancing authority (BA), which manages the grid in an area, or the reliability coordinator, which oversees multiple BAs, decides when load must be shed, but it is the load serving entity's customers who are blacked out. Utilities should maintain some sort of list of priority customers, who they are and where they are, to guide decisions in the event of blackouts. Utilities also should coordinate their emergency responses with natural gas providers to better cope with the surge in use as affected customers turn to

electric heaters and stoves during a cold-weather pipeline failure. The intent would be to encourage utilities to strengthen their planning if and where issues like this have not been addressed, and to share those plans where it has. That way, the state will understand the actions the utilities are taking and be more able to properly address problems caused by the emergency.

Utilities already have protocols for contacting Disaster and Emergency Services. Once the final draft energy assurance plan is complete and DEQ has completed its final draft Emergency Support Function-12 (ESF-12) plan, DEQ can request these utility plans be amended to include DEQ in the proper role.

Also, the Department of Justice operates the state's Critical Infrastructure program (see Chapter 4). This program is designed to prevent emergencies. Information from this program might be useful in assessing possible paths to recovery, but more likely would be used for pre-emergency planning.

Electricity can be subject to market emergencies, such as the Enron crisis in 2000-2001. These are events that cause prices to rise in Montana even though there is no damage to transmission lines and other infrastructure in or serving Montana. Market emergencies are discussed at greater length in Chapter 9; the initial response would focus on gathering and providing information to policy makers and the public on the markets involved.

2. Provide information

The state, in conjunction with utilities, can provide information that helps the public reduce consumption or shift consumption to off-peak hours. Mass media and social media channels can be used to encourage that behavior and to disseminate energy-saving tips. In particular, the state must have an information program ready to roll-out in the event of a major natural gas pipeline break during a cold period, which under certain conditions could cause an almost immediate substantial increase in electricity use. Materials to support warm weather and cold weather information programs will be developed and updated as needed.

Additionally, the state will serve as an authoritative source for the general public of news on the status and prospects of the emergency situation.

3. Lead by example

State government, as one of the larger consumers in the state, can lead by example. The Governor has authority to direct state agencies to reduce load by adjusting heating, air conditioning and water heating settings, as well as turning off unnecessary electric equipment and lighting. Under severe conditions working hours can be reduced. DEQ maintains a database (EnergyCAP) on the energy consumption of all state buildings. Using this data base, decreases in energy use can be tracked over time. The database may also be useful to identify locations where load reductions could be sought. The Governor may also order local government to reduce load, though the state has far less information about how local governments use electricity.

4. State emergency generators

For some limited amount of time, the state might be able to start up its backup generators to provide additional capacity. These generators would reduce load on the grid rather than put power into the grid. Generators can't be synchronized with the grid and rarely are sized to meet more than an emergency load. Therefore, building operators would be reluctant to turn them on unless the collapse of the grid was imminent. These generators typically run on diesel fuel, so their output would be limited by the availability of fuel. Assuming the state can work with the relevant balancing authorities to create a program for backup generators to in-effect provide backup support to the grid, the state could lead by example, offering to take some of its load off-line and encouraging other entities to do likewise.

5. Order consumption to be reduced

The Energy Supply Emergency Powers Act gives the Governor authority to impose restrictions on use by residential and private sector buildings and businesses. These could be restrictions in hours, lighting levels, display and decorative lighting, temperature levels and so forth. Such restrictions might be difficult to enforce formally, but issuing the order would encourage peer pressure to reduce loads as well as make it easier for utilities to take action.

6. Expanded energy efficiency programs

For longer term emergencies, such as one caused by a prolonged drought, DEQ can expand the energy efficiency programs it currently operates. Exactly which program is selected will depend on budget and policy decisions that set the agenda for the state fiscal biennium in which the emergency occurs. Expansion into additional energy efficiency programs also may be possible. The Northwest Power and Conservation Council develops a plan for the Pacific Northwest every five years. (http://www.nwcouncil.org/energy/) In that plan is a comprehensive list of efficiency programs and technologies. The then-current plan would be used as a guide to the expansion of electricity efficiency programs in Montana.

7. Tariffs for emergency response

Utilities around the country have developed load shedding programs that can be used in emergency situations, such as shaving peak or compensating for loss of generation. Customers are compensated to reduce their demand on the system upon notice by the system operator. Such programs can be active load management with direct control of equipment or voluntary response where the customer selects equipment to be controlled based upon current operations. Some of these programs can provide emergency response in as little as thirty minutes to help maintain the reliability of the bulk power system during a capacity deficiency. DEQ will work with utilities, co-ops and the PSC to develop or improve load-shedding tariffs for Montana, as appropriate. In the case of extended emergencies, an increase in price would send a signal for consumers to reduce consumption. Current regulatory practice tends to dampen price signals and in any event many consumers do not have the ability to see such a signal in a timely and useful way. DEQ will explore with the PSC and other interested parties whether

some price mechanism that indicates the urgency of reducing consumption can be developed, but ultimately it would be up to the PSC to take any action in this direction.

8. Relax environmental regulations or enforcement

DEQ may be able to ease environmental requirements for generators operating at less than full technical limits due to regulatory restrictions such as air and water quality regulations, including regulations on thermal pollution. Individual facilities can apply to the Board of Environmental Review for variances from rules governing the quality, nature, duration, or extent of emissions of air pollutants, but not for variances to permit requirements (75-2-212 MCA). However, the Environmental Protection Agency (EPA) does not recognize the variance rule and could move to enforce on its own. Therefore, an emergency is more likely to be dealt with by enforcement discretion than by regulation suspension. That is, DEQ can determine how or if it would enforce. For instance, DEQ could note a violation, but not necessarily follow up with penalties or other formal enforcement over the duration of an emergency. Enforcement discretion can occur at many levels, but major issues, such as a permit violation certainly would be taken up the management chain, as appropriate, ultimately to the director level. Additional legislative authority may be necessary to clarify the ability of DEQ to issue waivers.

Background Information

Sources

- The electricity system and major actors are described in *Understanding Energy in Montana* (http://leg.mt.gov/content/Publications/Environmental/2009-understanding-energy.pdf).
- Key contacts appear in the Energy Emergency Rolodex (Appendix B).
- Interviews with major transmission and generating companies are in DEQ files, along with supporting documentation on system configuration.
- An electricity emergency will trigger actions discussed in Chapters 7 (Natural Gas Emergencies) and 8 (Petroleum Emergencies). For instance, building heating systems and gasoline pumps don't work without electricity.

Procedures for monitoring supply and demand

- Procedures in general are discussed in Chapter 5.
- Historical energy statistics (http://deq.mt.gov/Energy/HistoricalEnergy/default.mcpx) and previous energy emergencies (Appendix C) provide the context for assessing an energy emergency.
- Utility price tracker filings from Public Service Commission and commodity purchases by Montana Department of Administration provide medium term warnings of changing electricity market pressures.
- The Northwest Power and Conservation Council has extensive data on the electrical system in the Pacific Northwest (http://www.nwcouncil.org/).

- During an unexpected emergency, DEQ would gather information from utility contacts listed in the Energy Emergency Rolodex.

What transmission system operators might do in an emergency

Because transmission operators' first obligation is to maintain the grid, the state is limited in the actions that it can request those operators take. The Department of Environmental Quality will rely heavily on utilities that manage the transmission grid to respond to emergencies, particularly when the failure of infrastructure components is the issue. Transmission operators and balancing authorities must comply with NERC reliability standards (http://www.nerc.com/page.php?cid=2|20). Included in these are standards for Critical Infrastructure Protection (CIP), which emphasizes cyber security, and Emergency Preparedness and Operations (EPO), which includes standards for Emergency Operations Planning, Load Shedding Plans and disturbance and event reporting. Plans implementing the standards lay out actions that the utilities will take when, in their estimation, a response is called for. Some of these actions that could be taken to protect the grid may affect service to customers. State government needs to be aware of these potential actions so it can properly assess the situation. Transmission operators vary in their willingness to share these plans with DEQ; however, potential actions include:

- If emergency conditions warrant, a Balancing Authority (BA — that entity that manages the grid in a designated region) can direct that the sales to areas outside of its area be curtailed in order to meet in-market requirements. Contract arrangements by market participants must reflect the ability to use this procedure.

- Once an emergency is declared by the Balancing Authority or by the Reliability Coordinator, a BA may bypass normal market operation and purchase energy or ancillary services needed to correct the situation through "out-of-market" transactions. A Balancing Authority may take such actions throughout the entire area or only within a specific sub-area or service territory. When operating reserves drop below minimum reliability criteria, a BA will typically first alert market participants and post notice of the conditions on its website and then will take various actions to contain and correct the situation. For example, units that normally operate at close to full output capacity may be asked by the BA to increase their output to emergency operating levels. This procedure can damage equipment if it is not properly implemented so it normally is only deployed for a short time.

- During the course of regular operations some generating units may be called upon to provide spinning reserve for the Balancing Authority area. Spinning reserve capability involves a quick response capability to manage contingencies on the system. During an emergency, a BA may convert non-spinning reserves to spinning reserves. Reactive power services are monitored as well and additional units can be secured to provide reactive power to maintain system stability under emergency conditions. Other generating units are typically

dedicated to provide “black-start” capability for the electric system should system-wide restoration be necessary.

- A Balancing Authority (BA) can reduce operational voltage, usually by less than 5 to 6 percent, in order to mitigate system contingencies. At this level, most customers will not notice a change, however public notification should accompany such action as certain electrical equipment may be adversely affected.

- Transmission operators have interruptible tariffs. Interruptible customers may be dropped from the system under certain conditions.

- As a last step, a BA can implement controlled rotating interruptions to control a system emergency. Also called “rolling blackouts,” this technique involves the interruption of portions of the grid for a period of time, usually for two hours or less. As one section is restored, another is taken off-line to reduce total system load. There is often a tiered protocol for rotating interruptions. Where practical, public notification should be utilized to permit customers to protect sensitive operations during such interruptions.

What local distribution utilities might do in emergency

Emergencies involving distribution lines are much more localized than those involving transmission lines. Such emergencies will mostly be dealt with by the local distribution utilities themselves. Disaster and Emergency Services will coordinate state response during events that may require logistical support such as emergency shelters or additional heavy equipment, with DEQ providing advice as needed on how the system in that area works.

Local distribution utilities that are part of a transmission operator key their emergency plans off the North American Electric Reliability Corporation (NERC)-mandated plans. Rural electric co-operatives, except for the very largest, usually don’t have NERC compliance obligations. The co-ops do have extensive mutual aid arrangements, which are called into play in the event of an emergency such as an ice storm. Distribution utilities typically have plans to take some account of essential services, but the lists of priority customers often are not comprehensive. Further, because individual circuits often have multiple types of customers on them, there is a limit to how fine a distinction can be made between critical and non-critical uses.

Importance of events at generating facilities

Failure of an individual facility rarely is sufficient to compromise the functioning of the grid. State response will be coordinated by Disaster and Emergency Services. Planning for such events falls under the Montana Emergency Response Framework rather than this Energy Assurance Plan.

Role of energy policy in preparing for emergencies

An energy policy that diversifies electricity supply would increase resilience of the electrical system; however, energy emergency response is only one factor that must be considered in energy policy and probably not the most important

Regional coordination

As part of the planning process, DEQ contacted the Bonneville Power Administration (BPA) for information on how its system operates in Montana. That prompted BPA to convene a conference call of state energy emergency planners in the four-state Pacific Northwest Region. All parties agreed that a mechanism for regular regional consultation on emergency issues was warranted. That consultation process will be incorporated into Montana's plan when it is developed.

The Northwest Power Pool (NWPP) is a voluntary organization of major generating utilities in the Pacific Northwest, British Columbia and Alberta. It serves as a forum in the electrical industry for reliability and operational adequacy issues in the Northwest. It has an Energy Emergency Plan, which is implemented by an Energy Response Team. State agencies may sit on the Operating Committee for the Team, but must be invited by the local utility(s) to do so.

Several natural gas distribution companies, pipelines and electric utilities in the Pacific Northwest formed the Northwest Mutual Assistance Agreement (NMAA) to improve cooperation and communication during extreme reliability events that could force outages on either or both energy networks. This agreement was prompted by the close call the region experienced December 9, 2009, when peak supply was curtailed for a number of hours during a period of record gas demand. BPA is a member of this agreement, while Northwestern Energy is not.

"Western Region Mutual Assistance Agreement" is a mutual aid agreement among gas and electric utilities throughout the Western United States and Canada to assist one another in the event of an emergency affecting generation, transmission, distribution, and/ or services. Forty-one electric and gas utilities located in 13 western states and 2 Canadian provinces have signed the agreement; BPA (through Columbia Grid) and NorthWestern Energy are participants. In the case of a major event, the contracts for assistance are already in place, allowing the requesting utility to focus on restoration and what is needed in terms of manpower, equipment, and materials.

Uses of and recovery by renewable supply resources

Renewables offer no inherent advantage to the grid as a supply resource by virtue of being renewable. It is the distributed nature of small renewable projects, and the in-state nature of all renewables and their fuel supply, that offers advantages, should an emergency affect the grid or entail imported fuel. As of the end of 2010, renewables (specifically certain large-hydroelectric facilities) do provide black-start capability for all balancing authorities in Montana should the grid collapse and need to be restarted.

Distributed renewables, especially solar photovoltaic (PV), may support limited communications. A task for the next few years will be to operationalize that possibility. The Montana Department of Transportation operates PV-powered signage that may be of some assistance for communications during an emergency.

Cyber security requirement for the Smart Grid

Utilities rely heavily on supervisory control and data acquisition (SCADA) to manage the interaction between different components of their system. This is not a cyber function with which the state is very experienced. At most, the state, through the Public Service Commission (PSC), could raise the profile of cyber security. For example, regulated utilities could be required to update the PSC on cyber security efforts and possible impact on rates as a part of their rate cases.

Two pilot Smart Grid Projects were begun in Montana in 2010, by Flathead Electric Cooperative and NorthWestern Energy as part of a Pacific Northwest regional project (http://www.pnwsmartgrid.org/). These projects must be compliant with North American Electric Reliability Corporation (NERC) standards, including standards for cyber security. Montana has no specific requirements for the Smart Grid.

Cyber security is discussed in greater detail in Chapter 10.

Chapter 7. NATURAL GAS EMERGENCY RESPONSE PLAN

Summary of Emergency Plan

For natural gas emergencies or shortages, utilities will be responsible for most of the actions necessary to deal with emergency situations. The state's responsibility mainly will be to coordinate with utilities, ensure that the public receives timely and accurate information about problems on the natural gas system, and to provide emergency relief to communities disrupted by an emergency in the system (such as an entire town losing its natural gas service during frigid winter weather). The major exception would be during a prolonged shortage of natural gas, where the state would take the lead in encouraging or requiring customers to reduce natural gas demand. The state might also be asked to provide support for pilot re-lighting efforts. A major role for DEQ in any emergency is to understand the responses available to natural gas companies and to explain these to policy makers and the public.

Measures the State Can Take

1. Understand the needs and constraints companies and customers will face in an emergency
2. Provide accurate information and energy saving tips
3. Lead by example
4. Order individuals and businesses to reduce consumption
5. Expand energy efficiency programs
6. Support expansion of wood use
7. Relax environmental regulations during an emergency or enforce them differently

1. Understand needs and constraints

The state can encourage greater coordination between itself, the utilities and other sectors and customers but first it must understand how utilities will respond to emergencies. Local distribution companies (LDC) and pipeline companies already are required by federal regulations and industry practice to have emergency plans. These plans, however, could be better coordinated with state government and possibly with other sectors. Further, the most significant ones of necessity focus on the pipeline system, rather than on the customers.

At minimum, LDCs and pipelines should provide copies of their emergency plans to DEQ, which serves as the primary agency for the state's ESF-12. Of particular interest would be LDC procedures for choosing which towns or areas to cutoff if pipeline pressure is dropping too low. LDCs should maintain some sort of list of priority customers, who they are and where they are, to guide decisions in the event of cutoffs. LDCs and pipelines also should coordinate their emergency responses with electricity providers to better cope with the surge in electricity use as affected customers turn to electric heaters and stoves during a cold-weather pipeline failure. The intent of this would be to encourage utilities to strengthen their planning if and where issues like this have not been addressed, and to share those plans where it has. That way, the state

will understand the actions the utilities are taking and be more able to properly address problems caused by the emergency.

Utilities already have protocols for contacting Disaster and Emergency Services. Once the energy assurance plan is complete and DEQ has completed its final draft Emergency Support Function-12 (ESF-12) plan, DEQ can request these utility plans be amended to include DEQ in the proper role.

Also, the Department of Justice operates the state's Critical Infrastructure program (see Chapter 4). This program is designed to prevent emergencies. Information from this program might be useful in assessing possible paths to recovery, but more likely would be used for pre-emergency planning.

Natural gas could be subject to market emergencies, such as the price rise following Hurricane Katrina. These are events that cause prices to rise in Montana even though there is no damage to pipelines and other infrastructure in or serving Montana. Market emergencies are discussed at greater length in Chapter 9; the initial response would focus on gathering and providing information to policy makers and the public on the markets involved.

2. Provide information

The state, in conjunction with LDCs, can provide information that helps the public reduce consumption, especially during peak hours. Mass media and social media channels can be used to encourage that behavior and to disseminate energy-saving tips. Materials to support warm weather and cold weather information programs will be developed and updated as needed.

The state's initial response to a serious natural gas emergency would be to encourage appropriate reduction in demand, first among interruptible industrial and large commercial customers, and then among residential customers and other commercial businesses. DEQ can ask the public to reduce use, implement natural gas use reduction at state facilities, impose restrictions on hours that commercial, industrial, public and school buildings may be open, and request federal assistance. Quick reduction in demand downstream of a failure in the transmission system might allow those areas to run essential needs and avoid relighting pilot flames by running off pack in the line. DEQ might be able to access emergency warning systems and thereby notify customers in an affected area faster than utilities can.

Industry and the state must have an information program ready to roll-out in the event of a major natural gas pipeline break during a cold period, which would cause an almost immediate substantial increase in electricity use. Electric heat is an attractive alternative insofar as many homes already have supplemental heaters. Additional portable heaters can be purchased relatively inexpensively, so long as supplies hold out. The three obvious concerns with this alternative are 1) the safety of the wiring in residences, 2) safety of the heaters themselves and 3) the ability of the electrical grid to provide

significant amounts of additional power needed for the heaters, especially if that system is already stressed by significant cold weather loads.

Additionally, the state will serve as an authoritative source for the general public of news on the status and prospects of the emergency situation.

Low Income Energy Assistance Program (LIHEAP) funding may be available for eligible residents if heating bills rise substantially as a result of using more electric heat.

3. Lead by example

State government, as one of the larger consumers in the state, can lead by example. The Governor has authority to direct state agencies to reduce load by adjusting heating, and water heating settings. Under severe conditions working hours can be reduced. DEQ maintains a database (EnergyCAP) on the energy consumption of all state buildings. Using this data base, decreases in energy use can be tracked over time. The database may also be useful to identify locations where load reductions could be sought. The Governor may also order local government to reduce load, though the state has far less information about how local governments use natural gas.

4. Order consumption be reduced

The Energy Supply Emergency Powers Act gives the Governor authority to impose restrictions on use by residential and private sector buildings and businesses. Most likely these could be restrictions in hours and temperature levels. Such restrictions might be difficult to enforce formally, but issuing the order would encourage peer pressure to reduce loads as well as make it easier for utilities to take action.

5. Expanded energy efficiency programs

A natural gas emergency is likely to be intense but relatively short in duration. If there were to be a long-term emergency, DEQ can expand the energy efficiency programs it currently operates. Exactly which program is selected will depend on budget and policy decisions that set the agenda for the state fiscal biennium in which the emergency occurs. Expansion into additional energy efficiency programs also may be possible. The Northwest Power and Conservation Council develops a plan for the Pacific Northwest every five years. (http://www.nwcouncil.org/energy/) In that plan is a comprehensive list of efficiency programs and technologies. Though the plan is aimed at efficiency in electricity use, many of the building envelope measures it identifies should be valid for gas-heated buildings as well. The then-current plan would be used as a guide to the expansion of electricity efficiency programs in Montana.

6. Support expansion of wood use

In the event of a total shutdown of service, some affected areas could be assisted with centralized collection and distribution of wood fuel, since many homes, especially in the western valleys, can supplement space heating with wood-derived products. These

programs would be arranged in cooperation with local governments or organizations such as the local Human Resource Development Councils.

7. Relax environmental regulations or enforcement

DEQ has limited permitting authority for natural gas operations, hence limited ability to offer waivers. Across production, transmission and distribution, DEQ only has permitting authority on compressor stations. Most compressors are permitted to run every hour of the year. However, a few stations in Montana are only allowed to run limited hours, to comply with air quality regulations. Under certain circumstances where an unforeseen event beyond control of a utility affects operations, the Environmental Protection Agency (EPA) can grant a "force majeure" exemption to allow stations to run longer. The Montana Board of Oil and Gas Conservation (within the Department of Natural Resources and Conservation) has authority over gas wells, but speeding up the completion of individual wells is unlikely to be a solution for any energy emergency.

ARM 17.8.744 sets exclusions for Montana air quality permits, stating: "A Montana air quality permit is not required under ARM 17.8.743 for... (g) emergency equipment installed in industrial or commercial facilities for use when the usual sources of heat, power, or lighting are temporarily unobtainable or unavailable and when the loss of heat, power, or lighting causes, or is likely to cause, an adverse effect on public health or facility safety. Emergency equipment use extends only to those uses that alleviate such adverse effects on public health or facility safety."

Wood burning could be required on a widespread basis during a prolonged natural gas failure in cold weather, which might lead to violations in non-attainment areas such as Missoula, Columbia Falls, and other communities. Individual facilities can apply to the Board of Environmental Review for variances from Montana rules governing the quality, nature, duration, or extent of emissions of air pollutants, but not for variances to permit requirements (75-2-212 MCA). However, the EPA does not recognize the variance rule and could move to enforce on its own. Therefore, an emergency is more likely to be dealt with by enforcement discretion than by regulation suspension. That is, DEQ can determine how or if it would enforce. For instance, DEQ could note a violation, but not necessarily follow up with penalties or other formal enforcement over the duration of an emergency. Enforcement discretion can occur at many levels, but major issues, such as a permit violation certainly would be taken up the management chain, as appropriate, ultimately to the director level. Additional legislative authority may be necessary to clarify the ability of DEQ to issue waivers.

Background Information

Sources

- The natural gas system and major actors are described in *Understanding Energy in Montana* (http://leg.mt.gov/content/Publications/Environmental/2009-understanding-energy.pdf).

- Key contacts appear in the Energy Emergency Rolodex (Appendix B).
- Interviews with major transmission companies are in DEQ files, along with supporting documentation on system configuration.

Procedures for monitoring supply and demand

- Procedures in general are discussed in Chapter 5.
- Historical energy statistics (http://deq.mt.gov/Energy/HistoricalEnergy/default.mcpx) and previous energy emergencies (Appendix C) provide the context for assessing an energy emergency.
- The U.S. EIA website *This Week in Natural Gas* is found at http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html.
- The U.S. EIA also employs numerous natural gas experts, and their contact information can be found at http://www.eia.gov/about/contact/natgas.cfm
- During an unexpected emergency, DEQ would gather information from utility contacts listed in the Energy Emergency Rolodex.

DEQ will supplement information from these contacts with information already being gathered to provide a current overview of the natural gas sector. This list of sources will continue to be developed. In addition to the Energy Information Administration (EIA), at present the list includes:

1. Natural gas prices http://www.wtrg.com/daily/gasprice.html
2. Utility price tracker filings from Public Service Commission
3. Commodity purchases by Montana Department of Administration

Why the layout of Montana's pipeline system could pose problems

Advance planning is particularly important in Montana because of the basic layout of most natural gas transmission pipelines. Large linear mainlines with numerous radial lines that branch is the common configuration, rather than more circular systems with numerous loops. A major break in a main line could leave few alternatives to deliver natural gas to customers. For example, disruptions along the main delivery lines along the Rocky Mountain Front could lead to gas supply problems throughout western and central Montana. Disruptions or delivery problems along the Canadian lines between the border and the central trading hub (known as AECO-C), or those in eastern Montana, Wyoming, and the Dakotas might also cause problems for consumers. The Williston Basin Interstate (WBI) pipeline, which serves Montana-Dakota Utilities (MDU) and much of eastern Montana, has several points on its system from which to draw gas supplies. NorthWestern Energy in contrast receives gas primarily at either end of its system and can only ship gas so far in one direction from those storage fields and interconnections. These two systems (and Energy West serving the city of Great Falls) can all isolate themselves from other systems if necessary.

Electricity-natural gas nexus

In the event of a major electricity outage, NorthWestern Energy's gas transmission system would generally continue running since most of its compressors don't run on electricity. A widespread power outage would affect the ability of NorthWestern Energy to continue monitoring and controlling its system remotely, but all stations have local controls in place that could be adjusted manually and are designed to be operated pneumatically (without electricity). NorthWestern Energy has a number of regulator (i.e., pressure control) and compressor stations that are operated from the Butte control center. These have backup systems that allow for manual control in the event of a communications or power outage.

An electrical outage would not be significantly detrimental to the operation of Williston Basin Interstate's pipeline. WBI has relatively little automation and remote control capability on its system. Thus, the loss of electrical service isn't a critical issue. Redundancy is built into its system, which allows tremendous flexibility in moving gas across it. Regional power outages occur on occasion but rarely create any problems in operations. WBI's pipeline traverses the states of Montana, Wyoming, North Dakota and South Dakota and as such relies on a variety of providers of electricity.

The Energy West natural gas distribution system does not rely on electricity for its operation. It receives gas from NorthWestern Energy (NWE) transmission lines, and as long as adequate supply is received at adequate pressures from NWE, the system operation should not be affected by electrical outages. However, while gas could get to the customers, most wouldn't be able to use it because heating systems generally require electricity. So, electricity outages can also become heating emergencies.

A more critical interdependence goes the other way. If natural gas were to be cut off to a town or a region, an increase in the use of electricity for space heating, possibly significant, can be anticipated. If the natural gas shortage were to occur on a cold day when the electric grid already is operating near or at peak load, electricity problems could occur as well.

What pipeline operators might do in an emergency

DEQ will rely heavily on utilities that manage the transmission pipelines to respond to emergencies, especially ones involving failure of infrastructure. Public Service Commission (PSC) regulated utilities file their emergency plan with the PSC and with the federal Pipeline and Hazardous Materials Safety Administration (PHMSA) for such emergencies; Williston Basin Interstate (WBI) files its plans with PHMSA and with the Federal Energy Regulatory Commission (FERC). Utilities also test emergency plans, conduct emergency drills, hire work crews, and maintain shutoff valves in certain parts of their systems. During an emergency, DEQ would maintain contact with utilities to follow how plans are being implemented and would consult with the PSC to review emergency plans.

In some pipeline systems, it is possible to increase pressure (referred to as “increasing line pack”) to effectively store additional gas. This is usually done in anticipation of unusually high demand levels. Allowable pipeline pressure increases are regulated by federal law. Ultimately, if pressure in a transmission pipeline drops low enough to compromise the system, pipeline operators can ask customers to switch fuels if possible or to scale back their operations or they even can cut off supply to customers.

What local distribution utilities might do in an emergency

NorthWestern Energy, Energy West, and Montana-Dakota Utilities (MDU), the local distribution companies that supply almost all natural gas customers in Montana, maintain their own emergency plans. They have a number of options to prepare for and respond to supply emergencies:

- Purchase and transport additional gas. A local distribution company may arrange to buy additional gas to meet demand. The price of this purchased gas, contract details, the availability of gas transmission capacity, and the ability of the company’s system to accept additional supply may limit the amount that can be purchased. Most gas used in the major population centers of Montana comes from Alberta. The Alberta natural gas market is very liquid, so product should be available, though transmission capacity could be a consideration. Often times, adjacent pipeline operators can, on short notice, buy or sell natural gas from each other and firm up the accounting at the end of a day.

- Increase withdrawals from storage. Companies that own or rent storage can increase the rate of withdrawal in order to meet increased short-term demand, subject to operational constraints. However, on the coldest days of the year, it would not be possible to increase the rate of withdrawal as the takeaway ability of the systems would be at its maximum. This option must be exercised in relation to the impact of short-term withdrawals on longer-term supplies.

- Increase withdrawals from other operating system sources. Most gas companies have access to other supply sources such as liquefied natural gas (LNG), propane air stations, and/or synthetic natural gas plants. These can be moved by rail or truck to supplement natural gas supplies. However, these options may also be in short supply, are expensive, and may not be in the appropriate locations to help in an emergency.

- Reduce exposure to price volatility. Companies attempt to minimize huge price swings during emergencies through hedging strategies, including storage, hard prices, and fixed-price forward contracts.

- Request that customers voluntarily reduce gas demand. Most natural gas used in the commercial and residential sectors goes to space heat and water heat. Lowering thermostats is the quickest way to reduce natural gas demand. Industrial customers also can be asked to reduce gas-consuming industrial processes.

- Continue to pursue demand side management programs. In particular, increasing the efficiency of building shells allows customers to ride out supply interruptions longer before health and safety are compromised.

- Interrupt selected customers. Some customers choose “interruptible” gas service, which allows a local distribution company to cut supply in times of high gas demand or perhaps to weather an emergency. These arrangements, which provide significant financial incentives to customers, usually require advance notice of interruption and limit the total number of hours in a year that service can be interrupted. Interruptible customers must have fuel switching capability — usually oil or LPG. Since interruption is normally a wintertime event and other fuels are also in high demand, interruptible customers are encouraged to acquire pre-season alternative fuel. Shedding firm customers would be a last resort.

Emergencies involving gas distribution lines are much more localized than those involving larger transmission lines. Such emergencies will mostly be dealt with by the local distribution utilities themselves. Disaster and Emergency Services will coordinate state response during events that might require logistical support, such as emergency shelters or additional heavy equipment, with DEQ providing advice as needed on the energy distribution system in that area.

Regional coordination

Because natural gas can be stored, as contrasted with electricity which must be used as it is generated, operations of natural gas pipelines are not as tightly intertwined as are electrical transmission systems. There is no regional coordinating group for natural gas transmission equivalent to those in the electric transmission side. Each system can only see what’s happening through its own control center network; however, there is informal communication and coordination between and among pipeline operators.

Several natural gas distribution companies, pipelines and electric utilities in the Pacific Northwest formed the Northwest Mutual Assistance Agreement (NMAA) to improve cooperation and communication during extreme reliability events that could force outages on either or both energy networks. This agreement was prompted by the close call the region experienced December 9, 2009, when peak supply was curtailed for a number of hours during a period of record gas demand. BPA is a member of this agreement, while Northwestern Energy is not.

“Western Region Mutual Assistance Agreement" is a mutual aid agreement among gas and electric utilities throughout the Western United States and Canada to assist one another in the event of an emergency affecting generation, transmission, distribution, and/ or services. Both BPA and NorthWestern Energy are participants.

Uses of and recovery by renewable supply resources

There are some renewable substitutes or alternatives for natural gas; however, they are unlikely to be available in substantial additional amounts to meet emergency shortfalls

in natural gas supply. Methane can be extracted from landfills or by conversion from biomass; however, these sources are limited and often expensive. Further, the output from any facility existing prior to an emergency would likely already be accounted for in some supply portfolio, rather than being held in reserve for an emergency. Fuel switching, such as to wood heat or to electricity, is a more plausible pathway toward resolving a natural gas emergency.

Wood heat comes with its own limitations. It requires adequate supply within affordable driving distance, collection infrastructure, and conversion devices. It creates environmental problems in urban air sheds and can cause problems in the forest. On the positive side, since some number of houses in most towns in Montana served by natural gas is heated with wood, there will be some warm spots for people to retreat to, assuming neighbors are willing to take them in. The significant amount of beetle-killed trees could make supplying such wood easier. Using wood heat would likely be more of a voluntary measure than a mandatory one.

For longer-term emergencies, product shortages would eventually lead to escalating prices that naturally drive efficiency investments and migration to substitute fuels – biomass, propane, and fuel oil. Historically, these trends have been seen as prices rise, although natural gas can be relatively price inelastic (non-responsive) in the short run. Over the longer term, the state could promote the development of new alternative infrastructure, such as centralized biomass facilities in affected regions or local wood pellet processing.

What can be done for cyber security

LDCs and pipelines already are taking steps to enhance their cyber security. They rely heavily on supervisory control and data acquisition (SCADA) to manage the interaction between different components of their system. This is not a cyber function with which the state is very experienced. At most, the state, through the Public Service Commission (PSC), could raise the profile of cyber security. For example, regulated utilities could be required to update the PSC on cyber security efforts and possible impact on rates as a part of their rate cases.

Cyber security is discussed in greater detail in Chapter 10.

Chapter 8. PETROLEUM EMERGENCY RESPONSE PLAN

Summary of Emergency Plan

Because of the complex and technical nature of refineries, refinery operators will be responsible for most of the actions necessary to deal with emergency situations within the refineries themselves. For similar reasons, pipeline operators will take the lead on emergencies affecting their systems, although the Department of Environmental Quality (DEQ) will be heavily involved in those events requiring cleanup and recovery operations. The state's major role will be in reducing panic in the market and encouraging the proper allocation of product throughout the state. Because sales of petroleum products are not regulated, unlike those of electricity or natural gas, the market can be highly volatile. Ensuring that the public receives timely and accurate information about problems in the petroleum sector will be vital, as will encouraging reductions in demand. Allocating product to emergency services has been suggested as an emergency response strategy, but often without consideration of the need to develop and then maintain an allocation system prior to an emergency.

Measures the State Can Take

1. Understand the needs and constraints companies and customers will face in an emergency
2. Provide accurate information and energy saving tips
3. Expand energy efficiency programs.
4. Lead by example
5. Order individuals and businesses to reduce consumption
6. Intervene in the market
7. Enhance supply and distribution
8. Relax state regulations during an emergency or enforce them differently
9. Seek waivers of federal fuel and drivers hours of service regulations

1. Understand needs and constraints

Pipeline companies already are required by federal regulations and industry practice to have emergency plans. These plans, however, could be better coordinated with state government and with other sectors. The state can encourage greater coordination between itself and the pipelines. At minimum, pipelines should provide copies of their emergency plans to DEQ, which serves the primary agency for the state's Emergency Support Function-12.

Pipelines already have protocols for contacting Disaster and Emergency Services. Once the energy assurance plan is complete and DEQ has completed its final ESF-12 annex, DEQ can request these pipeline plans be amended to include DEQ in the proper role.

Also, the Department of Justice operates the state's Critical Infrastructure program (see Chapter 4). This program is designed to prevent emergencies. Information from this program might be useful in assessing possible paths to recovery, but more likely would be used for pre-emergency planning.

Petroleum products, more than other fuels and energy, can be subject to market emergencies. These are events that cause prices to rise in Montana even though there is no damage to pipelines and other infrastructure in or serving Montana. Market emergencies are discussed at greater length in Chapter 9; the initial response would focus on gathering and providing information to policy makers and the public on the markets involved.

2. Provide information

The state can provide information to help the public reduce its fuel use. Mass media and social media channels can be used to encourage that behavior and to disseminate energy-saving tips. Additionally, the state will serve as an authoritative source for the general public of news on the status and prospects of the emergency situation.

The exact mix of measures to be suggested will depend in part on the staffing and programs being run by DEQ at the time of the emergency, but examples include:

- Promote energy efficient maintenance and driving practices
- Increase promotion of the use of public transportation;
- Promote flex-time work schedules to reduce congestion;
- Encourage reduction in industrial processes requiring diesel fuel or fuel oil;
- Encourage reduction in space heating using propane; and
- Work with industry associations to obtain support for proposed measures from their membership.

3. Expand energy efficiency programs

If there were to be a long-term emergency, DEQ could expand any fuel efficiency programs it might be operating. Exactly which program is selected will depend on budget and policy decisions that set the agenda for the state fiscal biennium in which the emergency occurs. No such programs are operating at the moment, but previous efforts include:

- Telecommuting and teleconferencing programs to minimize travel.
- Carpooling and vanpooling programs, both individual- and employer-based.

4. Lead by example

State government, as one of the larger consumers in the state, can lead by example. The Governor has authority to direct state agencies to reduce their travel and to lower their heating and water heating settings in facilities using petroleum products. Under severe conditions working hours can be reduced. MDT oversees the motor pool and, along with various departments, the state motor vehicle fleet. DEQ maintains a database (EnergyCAP) on the energy consumption of all state buildings, which can be used to identify locations where load reductions could be sought. The Governor may also order local government to reduce their consumption of petroleum products, though the state has far less information about that use than its own use.

5. Order consumption be reduced

The Energy Supply Emergency Powers Act gives the Governor authority to impose restrictions on use of petroleum products. Not all such restrictions will be easy to enforce formally, but issuing the order would encourage peer pressure to reduce use. Measures could include:

- Purchase restrictions on petroleum (primarily gasoline and diesel) products, including minimum purchase requirements, odd/even license plate purchase authorizations, staggered days of operation, and others (will require close coordination with petroleum marketers);
- Strict enforcement or reductions of highway speed limits; and
- Restrictions on the hours during which commercial, industrial, and public facilities may operate.

6. Intervene in the market

The Energy Supply Emergency Powers Act gives the Governor authority to allocate energy supplies, including petroleum products. There are a range of options for influencing the allocation of product. The last three in particular would need to be developed and started prior to an emergency, which raises budget and staffing questions.

- Assist low-income customers in obtaining emergency supply or other help in obtaining product;
- Assist LPG and heating oil consumers in locating alternate suppliers;
- Provide supplemental funding to critical services to permit them to compete for product in a tight market;
- Establish a priority end user program; and
- Establish a state set-aside program.

Supplemental funding for critical services, especially those provided by state and local government, would be needed in a petroleum emergency. Most government services now get their fuel from retail outlets rather than from their own storage facilities. Extra funding would allow them to continue to purchase fuel at the pump. The money could be disbursed on an as requested basis, but then subject to an audit after the crisis is over. Guidelines for what purposes the funds could be used would need to be established in advance, along with provisions for the agencies being audited post-crisis. The Governor

has authority to authorize emergency expenditures, subject to a $16 million per biennium cap. However, other emergencies, such as forest fires, compete for the same money. The Legislature may need to allow additional emergency expenditures if this measure is to be a reliable tool.

A “priority end user” program would require suppliers to provide police, fire, and emergency medical services with some percent of their current requirement upon certification to their suppliers. The list of priority users should be kept as short and clear cut as possible to avoid disputes on the question of whether some service is a priority. The state would have to define what was met by priority users to provide some uniformity across the state. The priority users may also need to be tailored to the particulars of an event. For example, diesel fuel for backup generators to support water systems may need to be included in the priority list in the event the petroleum shortage is coupled with a power outage. Maintenance work on electricity and natural gas systems also could be raised to the priority list. This program would be carried out by the suppliers themselves working with their regular customers. Once the appropriate regulatory framework was in place, this program could be implemented quickly by the suppliers.

A state set-aside program could be implemented in the event of petroleum shortages where suppliers are allocating supply for an extended duration. This program would require petroleum companies delivering fuel into Montana to set aside a percentage of their projected deliveries for gasoline, propane, liquefied petroleum gas, or diesel fuel for subsequent allocation by state authorities. While the recipients would continue to pay suppliers the market rate, allocation would be by volume, rather than percentage of previous purchases. In these cases, a list of priority uses should be identified to guide the decision process. This could include:

- Police, fire, and emergency response units;
- Life and health care facilities;
- Water and sanitation services;
- Telecommunications;
- Mass transit;
- Agriculture and food services;
- Critical industry and commerce; and
- Other priority users as determined by the state.

For an allocation program or even a priority users program to be timely and effective, considerable and on-going pre-planning with the petroleum sector and with local government would be necessary to ensure priority users and their actual needs were identified. Due to staffing constraints, Montana is unlikely to develop set-aside or priority user programs unless absolutely necessary. Montana’s experience with the set-aside program of the 1970’s also argues against an allocation program. Studies nationally have suggested this program may have aggravated rather than alleviated shortages. At very least, DEQ will continue to monitor the plans of those states that are attempting to develop a petroleum set-aside program.

7. Enhance supply and distribution

The state can facilitate the movement of petroleum products to disaster areas by coordinating needs with the state highway agency and police units. This would be done by DoJ, in conjunction with DEQ and Disaster and Emergency Services.

8. Relax state environmental regulations or enforcement

If there are refineries and pipelines operating at less than their technical limits due to state regulatory restrictions, DEQ may be able to ease environmental requirements. Given that refineries are running at high capacity and that they have made significant process and pollution equipment changes to comply with regulations, there may not be any such requirements holding back production. However, new regulations, such as the one-hour sulfur dioxide limits, might in the future limit output from some refineries. Individual facilities can apply to the Board of Environmental Review for variances from rules governing the quality, nature, duration, or extent of emissions of air pollutants but not for variances to permit requirements (75-2-212 MCA). EPA doesn't recognize the variance rule and could move to enforce on its own. Therefore, an emergency is more likely to be dealt with by enforcement discretion than by suspending regulations. That is, DEQ can determine how or if it would enforce. For instance, DEQ could note the violation, but not necessarily follow up with penalties or any other formal enforcement during the duration of the emergency. Enforcement discretion can occur at many levels, but major issues, such as a permit violation certainly would be taken up the management chain, as appropriate, ultimately to the Director. Additional legislative authority may be necessary to clarify the ability of DEQ to issue waivers.

ARM 17.8.744 sets exclusions for Montana air quality permits, stating: "A Montana air quality permit is not required under ARM 17.8.743 for... (g) emergency equipment installed in industrial or commercial facilities for use when the usual sources of heat, power, or lighting are temporarily unobtainable or unavailable and when the loss of heat, power, or lighting causes, or is likely to cause, an adverse effect on public health or facility safety. Emergency equipment use extends only to those uses that alleviate such adverse effects on public health or facility safety."

9. Seek waivers of federal regulations

Fuel standards and limitations on drivers' hours of service can be waived either directly by the federal government or initiated by request of a state.

Fuel waivers: The Environmental Protection Agency (EPA) has promulgated various requirements for motor vehicle fuel under the Clean Air Act, which applies to both gasoline and diesel fuel. In Montana, special fuel requirements only apply in Missoula during the winter. If the fuel waiver criteria have been met, EPA may waive time and type fuel restrictions for a designated area and period of time. Though this wouldn't do much in Montana, it might provide petroleum suppliers with some additional supply flexibility during a shortage. DEQ would prepare the request.

A fuel waiver can be issued when the criteria specified in the Clean Air Act Section 211(c)(4)(C) have been met. In general, these criteria allow a fuels waiver only to address a temporary emergency fuel supply shortage that exists throughout a state or region that was caused by an unusual situation such as an Act of God, and that could not have been avoided by prudent planning. "Spot" or localized shortages generally are not fuel supply disruptions for which a waiver may be issued. A fuel supply disruption that meets the criteria for a waiver must be one that results in a generalized supply emergency. Fuels waivers cannot be issued to address concerns regarding the price of fuel.

Except in unusual or emergency circumstances, a formal request for a fuel waiver is made by, or on behalf of, the Governor after consultation with EPA. During normal business hours (Monday through Friday, 8 am to 5 pm Eastern Time) the first point of contact for obtaining information about a fuel waiver request is the EPA Air Enforcement Division, at 202-564-2260, or the Transportation and Regional Programs Division, at 734-214-4956. Outside of normal business hours, the point of contact is the EPA Emergency Operations Center, at 202-564-3850, which is able to communicate with the EPA officials who provide assistance regarding fuel waiver requests.

For a list of frequently asked question, including a list of fuel waivers that have been granted, see: http://www.epa.gov/otaq/fuels/fuelwaivers.htm.

Limits on truck driver hours: MDT coordinates the process of acquiring waivers of federal and state driver hour limitations as needed to increase bulk highway fuel transport. Limits on the number of hours a truck driver can operate a vehicle fall under requirements of the Federal Motor Carrier Safety Administration (FMCSA). These limits can be waived under two conditions. First, if an emergency has been declared by the President of the United States or the Governor; and second, if the FMCSA Field Administrator has declared that a regional emergency exists which justifies an exemption. This exemption cannot exceed the duration of the motor carrier's or driver's direct assistance in providing emergency relief to the affected area, or 30 days from the date of the initial declaration of the emergency or the exemption from the regulations by the FMCSA Field Administrator, whichever is less.

If the Governor has declared an emergency in all or any part of the state, driver hours of service are automatically waived for drivers making deliveries to provide emergency relief to the affected area. For instance, in a declared energy emergency such as a severe propane shortage, propane delivery drivers could be exempted. This permits them to drive additional hours for delivery or to reach distant supply terminals and return expeditiously. In a natural disaster, such as a hurricane and declared emergency, drivers can work additional hours needed to resupply fuel and other goods. Drivers passing through multiple states do not require that waivers be in effect in those states if they are providing supplies to an area where an emergency has been declared.

Limits on hours of service of drive can be found at:

http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/FmcsrGuideDetails.asp?menukey=395 and relief from those regulations (which includes Parts 390 to 399) can be found at 390.23 http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrruletext.aspx?reg=390.23&keyword=relief%20from%20part%20395

Background Information

Sources

- The petroleum sector and major actors are described in *Understanding Energy in Montana* (http://leg.mt.gov/content/Publications/Environmental/2009-understanding-energy.pdf).
- Key contacts appear in the Energy Emergency Rolodex (Appendix B).
- Interviews with refineries and product pipelines are in DEQ files, along with supporting documentation on system configuration and operation.

Procedures for monitoring supply and demand

- Procedures in general are discussed in Chapter 5.
- Historical energy statistics (http://deq.mt.gov/Energy/HistoricalEnergy/default.mcpx) and previous energy emergencies (Appendix C) provide the context for assessing an energy emergency.
- Information sources on the web provide current data:
    - EIA — *This Week in Petroleum* (http://tonto.eia.doe.gov/oog/info/twip/twip.asp)
    - Retail prices (http://www.gasbuddy.com/)
    - AAA Montana product costs (three metro areas plus metro areas in surrounding states)(http://www.fuelgaugereport.com/MTmetro.asp)
    - Crude oil costs (http://www.oil-price.net/index.php?lang=en)
    - Historical crude prices (http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm)
- DEQ subscribes to a weekly service from OPIS to provide gas and diesel price information for towns in Montana.
- Montana Department of Transportation district offices can supply field reports on gasoline and diesel prices and availability.
- During an unexpected emergency, DEQ would gather information from petroleum sector contacts listed in the Energy Emergency Rolodex.
- Monitoring should give special attention to small towns, which might be the first to be hit hard by oil shortages given that they usually are served by a very limited number of providers.
- The Montana Oil Pipeline Safety Review Council, established by Governor Schweitzer following the Silvertip Pipeline break in 2011, assessed the risk of ruptures and leaks in all sections of pipeline that cross rivers and streams. The review considered a variety of factors including each pipeline's age, thickness

and corrosion, and the condition and operation of all shut-off valves. The results of this review and the monitoring of on-going maintenance work will be available to the Energy Assurance Plan.

Private sector responses

Montana produces considerably more petroleum product than it consumes. Montana pipelines are extremely important in getting product to market in Montana and out of state, and in getting crude into Montana. The price and availability of petroleum product is affected by the ebbs and flows in the regional, national, and international market as well as by conditions at Montana refineries.

Most immediate emergencies in the petroleum sector must be dealt with by the companies themselves, with the state providing logistical support to first responders and affected areas as needed. The petroleum pipelines are regulated by the Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation (US DoT). Pipeline companies have their own emergency plans to comply with these federal regulations. As one would expect with facilities handling large amounts of combustible and explosive materials, refineries each have their own emergency plan, based on an incident command structure. Events at a refinery are handled by the refinery staff.

The two main concerns with pipelines are breaks and failures of pumping stations. Pipelines are built with valves that allow segments to be isolated in the event of a break, as occurred shortly after the ExxonMobil Silvertip Pipeline break on July 1, 2011. Valves at terminals and at most High Consequence Areas (HCAs) are remotely operated; however, some other valves cannot be controlled remotely. (An example of an HCA would be a river crossing.) There is no standard spacing on placement of valves; rather, the location of valves depends on terrain (elevation and hydraulics) and proximity to HCAs. Pipelines are operated from a central dispatch center that may or may not be in-state. The location of a center shouldn't in itself present problems since communications are mostly by satellite or cell phone. If communications are lost, the pipeline is down. Pipelines meter the input to the line and the take out, which helps to quickly identify leaks. Remote pressure transmitters are installed along some lines; if pressure falls, the companies investigate. Emergency plans routinely provide for contact with fire departments and other local first responders.

The pipelines and terminals run on electric motors, with a variety of suppliers. Without electricity, the distribution of petroleum products for the most part shuts down, though some product can be moved by improvised methods. For instance, in the aftermath of Hurricane Rita, tank trucks were loaded from storage tanks by head pressure to get product to hospitals and emergency vehicles.

Local emergencies may not necessarily impact customers significantly. The larger companies that dominate petroleum products have ability to shift product distribution across the country to meet regional shortfalls. Shortages in Montana could be dealt with

at some price by reducing, for example, exports to Spokane, with Spokane receiving increased product flow from the Puget Sound area.

In a serious petroleum shortage, provisions of the Uniform Commercial Code may apply, including Section 2-615. The code covers commercial transactions and has provisions that address conditions when a supplier is unable to meets its supply obligations. Section 2-615 permits a seller to breach its contract with a buyer if delivery "has been made impracticable by the occurrence of a contingency," caused by events outside of the supplier's direct control.

Under Section 2-615 the seller must allocate available supply in a fair and reasonable manner. Historically, when this provision triggered allocations of petroleum products, supplies were either allocated as a percentage of contractual volumes or based on the prior year's actual purchases. Should such a condition occur, suppliers may not be able to discriminate within a class of accounts to give priority to one user over another. In recent years, most buyers, both branded and unbranded, are contract customers and therefore are unlikely to be totally cut off in an emergency. Also, were the Governor to establish a set aside program, Section 2-615 would be superseded. Under the "state action doctrine," regulatory programs can be immune from antitrust liability. The immunity extends both to state agencies and private individuals and corporations.

Most of the Montana market is supplied by pipelines, primarily the Yellowstone and also the Cenex. Were flow to be curtailed on these lines for any reason, product would need to be moved by truck or by rail. The private sector will take the lead in making these arrangements. The state to some extent can facilitate transport by truck; this is much less the case for transport by rail. However, significant amounts of product already move by rail between Missoula and Thompson Falls, to bridge the gap in the Yellowstone Pipeline, and crude is shipped out of the Bakken from western North Dakota, primarily to refineries in the Gulf, but also very recently to West Coast refineries. These operations have experience with tank cars and might provide rolling stock during an emergency.

The private sector also would take the lead if there was a disruption in transportation, especially with rail. Additives such as ethanol, which are necessary to make usable fuel, are shipped into Montana by rail. Critical waste products also are removed from refineries by rail.

Regional coordination

There is no existing formal regional coordination on petroleum product flows. The major oil companies, by virtue of their size, provide some coordination. Establishing such coordination with neighboring states will be an on-going goal of Montana's energy assurance work. Because Montana provides around one-third of North Dakota's gasoline and distillate supplies and about half the supply in the Spokane region of Washington, such coordination will be of interest to these states as well.

Uses of and recovery by renewable supply resources

Ethanol and, to a much lesser extent, biodiesel already are used in Montana to the extent they are cost-effective. Montana has no commercial-scale ethanol production and biodiesel production is less than 2 million gallons per year. No additional supplies should be expected to be immediately available in the event of an emergency. Because Montana refineries, like most refineries, make a blend stock gasoline that requires the addition of ethanol before it could be sold, a shortage of ethanol would cripple supplies until refineries could be adjusted to produce finished gasoline.

Cyber security

Pipelines rely heavily on supervisory control and data acquisition (SCADA) to manage the interaction between different components of their system. This is not a cyber area in which the state is very experienced. DEQ has identified cyber security contacts at pipelines and refineries through which it can monitor a situation.

Cyber security is discussed in greater detail in Chapter 10.

Chapter 9. PRICING AND MARKET EMERGENCIES

Energy emergencies are commonly thought of as supply shortages caused by problems with infrastructure that serves Montana. However, as discussed in Appendix C, Montana has faced events where local infrastructure was not disrupted. This plan refers to such emergencies as “market emergencies.” Price increases, not infrastructure damage, are what Montanans see first in such emergencies.

Montana statute recognizes pricing itself can be an emergency. "Energy emergency" is defined as either “a shortage of energy” or “a price of energy” that will “result in curtailment of essential services or production of essential goods or the disruption of significant sectors of the economy.” Further, an energy emergency also could be “a price of energy that will impose a threat to the health or safety of those segments of the population who are most in need” (90-4-302 MCA).

Market emergencies can be linked to criminal activity (e.g., the activities of the energy trading company Enron), natural disasters well outside Montana’s borders, and human-caused political or social events on a world scale. Historically, supply shortages and price spikes in liquid fuels, natural gas, and electricity have been tied to complex events in commodities markets. A high crude oil price, and thus high gasoline and diesel prices, is Montana’s most likely scenario for a market-based energy emergency.

A market emergency can eventually result in widespread shortages of product just as do more conventional emergencies; at that point the energy disruptions are handled as outlined in the previous chapters of this section. Like any emergency, a market emergency can affect the price of fuels; rising prices are the hallmark of a shortage of supply relative to demand. The high prices serve a function, as they dampen demand while attracting new energy sources and production. At the same time, those high prices may disrupt the economy and lives of Montanans. For that reason, the public always wants to know if the high prices are justified.

A market emergency differs from a conventional emergency in that the question of its legitimacy is much more prominent: is the event a “real” emergency or is it a manufactured emergency? The answer to this question may affect the willingness of the public to reduce demand and to support the state’s response to the emergency. It also may affect the extent to which the public expects that perpetrators exist and that they should be brought to justice. Not surprisingly, the definition of market emergency relies more on policy and politics than do emergencies caused by damage to infrastructure.

The state’s response to a market emergency can take three tracks, depending on the nature of the emergency. First, in those markets where costs are not passed through immediately, end-use consumers, given the absence of significant price signals, will resist reducing demand to stabilize the system, unless they are otherwise convinced there are legitimate reasons to do so. Second, in those markets where costs are passed through immediately, end-use consumers must be convinced there are valid reasons for

prices to increase and for them to pay the price asked or to reduce demand. Third, in emergencies where the concern is for the well-being of that subset of vulnerable populations, the public must be convinced the state should provide public resources to meet the prices being charged those populations.

Simultaneous with any of these efforts, the state must determine the extent to which the emergency in fact reflects fundamental aspects of the energy sector (a “real” emergency) and the extent to which it reflects manipulation of the market (not a “real” emergency). The absence of damage to the energy infrastructure serving Montana makes proving to the public that a real emergency exists a necessity for a successful response.

The first track usually would involve regulated electricity or natural gas. Montana residents and commercial businesses typically are insulated from large swings in the prices of these commodities as a result of long-term contracts made by their utility or co-op and by virtue of the rate-making structure they fall under. For regulated utilities, prices are set by the Public Service Commission (PSC) and cost adjustments are not seen by consumers for months or even years following an incident. Rural electric cooperatives likewise cannot change prices immediately, but because they are governed by a local board, they can move faster than regulated utilities. The risk without accurate price signals is that consumers will demand more energy than the system can provide because of the emergency and that excess demand itself creates problems.

The second track usually involves petroleum products or non-regulated sales of electricity and natural gas. These are sold in markets that respond quickly to disasters that affect these sectors. Large industries and other entities that buy electricity and natural gas on the spot market are not as insulated as are utility customers. In the case of petroleum, no customers are insulated from swings in the price of oil. The risk here is that consumers will demand the price of the product be controlled or subsidized (e.g., calls to eliminate the fuel tax when gasoline is expensive) even though the price is what balances supply and demand.

The third track can involve any fuel that affects an identifiable population. This may be a welfare issue involving only a small part of the population and other states might not categorize the problem as an energy emergency. Affected populations could be the proverbial canaries in the mine, signaling an event that could grow to affect a significant portion of the general population. The risk here is that state monies may be spent at a time later determined to be too soon or not soon enough.

In a market energy emergency, DEQ would mostly act in a monitoring and information dissemination role. DEQ would monitor prices and contact actors in the appropriate markets, which would likely be outside of Montana. Other data sources would be accessed as necessary. Markets are regional for electricity. For natural gas, markets historically have been national, though that could be changing to international as more gas is shipped overseas. Markets are international for oil. Understanding these markets will require an expertise different from that required for monitoring in-state markets. The

ability of DEQ to field that expertise will depend on the backgrounds of those on staff at the time of a market emergency, as well as the state's involvement in regional or national energy initiatives. DEQ's analyses of such emergencies may need to be supplemented by materials from other states or DOE.

Within Montana, DEQ would watch for market manipulation and price gouging. The Legislature has turned down efforts to pass price-gouging law, but some investigations and possible prosecutions might be pursued under Title 30, Chapter 14, Unfair Trade Practices and Consumer Protection Act. DEQ would work closely with the Montana Department of Justice Office of Consumer Protection to confirm or rebut charges of price gouging. During previous events, Montanans had the option to report possible gouging at the federal site http://gaswatch.energy.gov/. That site was activated in the event of an energy emergency, extended gasoline price spike, and/or widespread natural disaster and may be available again if it is needed.

DEQ would provide documentation of a market emergency to the Governor's Budget Office, the Department of Public Health and Human Services and other agencies. Some emergency low-income support might need to be made through the Low Income Energy Assurance Program (LIEAP) or other means such as the emergency money that the Governor is authorized to spend under 10-3-312 and 90-4-318 MCA.

Disaster and Emergency Services (DES) might not be involved initially in a market emergency. However, once basic services and economics became strained and shortages appear as a result of the market emergency, then the steps outlined in previous chapters could be taken and DES would be engaged.

Chapter 10. CYBER EMERGENCIES

Threats to energy communications, computer systems technologies, and physical control systems based on information technology are described as “cyber threats.” These threats can be classified as natural, deliberate, systemic, or accidental. Attacks could be aimed at the energy sector specifically, or could cut across all sectors, with the energy sector being affected incidentally. Approaches to all these threats are typically the responsibility of the utilities and energy companies with some oversight and protocol review by state and federal agencies.

Because of the specialized nature of cyber attacks, this Energy Assurance Plan does not call for DEQ to take the lead in responding to them. Nonetheless, the Energy Emergency Rolodex does identify contacts with cyber offices within energy sector companies and agencies to facilitate communications during emergencies. In addition, an on-going review of DEQ’s own preparation for cyber security has been instituted to ensure a cyber attack on Montana doesn’t totally negate the state’s ability to respond to energy emergencies.

At present, the Division of Criminal Investigations within the Montana Department of Justice houses the Montana All Threat Intelligence Center (MATIC) and handles much of the cyber and communication threat responsibilities. Critical sites and cyber issues are identified within this sector, by both MATIC and the federal Pipeline and Hazardous Materials Safety Administration (PHMSA). While under its general powers the Montana Public Service Commission (PSC) could assume oversight of the utilities’ cyber security efforts, to date it has not issued any orders or taken any actions regarding regulation over those efforts. Both these agencies have some familiarity with cyber issues; however, no state agency has a deep understanding of SCADA (supervisory control and data acquisition) systems, which are critical to functioning of the energy sector.

The arrival of Smart Grid technologies will increase the potential for cyber attacks and emergencies. At the time of this plan’s preparation, Montana has only two small demonstration projects to test smart grid technologies. NorthWestern Energy (NWE) and Flathead Electric Cooperative, supported by matching American Recovery and Reinvestment Act (ARRA) funding through the Department of Energy, have joined the Pacific Northwest Smart Grid Demonstration Project. The Montana demonstration projects will occur in residences and government offices in Helena and near Philipsburg (NWE) and Libby, Marion, and Kila areas (Flathead Electric) to test and demonstrate smart grid potential in urban and rural communities in Montana. Both the utility and consumer sides of the project will entail hardware and software installations that may offer testing opportunities for cyber and communications threats. These projects are part of a Pacific Northwest regional project (http://www.pnwsmartgrid.org/).

To the extent these Smart Grid projects touch the transmission system, they will fall under industry security regulations. The North American Electric Reliability Corporation (NERC) Standards CIP-002 through CIP-009 (the Critical Cyber Asset Identification portion of the Critical Infrastructure Protection standards) provide a cyber security

framework for the identification and protection of Critical Cyber Assets to support reliable operation of the Bulk Electric System. These standards apply to all transmission operators, which in the case of the Smart Grid pilot projects are NorthWestern Energy and the Bonneville Power Administration (BPA).

The issue of energy cyber security extends to state government itself and its ability to keep an energy emergency response function operating in the event of a cyber attack. The Security and Continuity Services Office, State Information Technology Services Division, Department of Administration will assist DEQ, as it does other departments, in maintaining and improving cyber security for its energy emergency responsibilities. In addition to the security provided by the Department of Administration, DEQ can take low-tech steps to ensure its materials will be available during a cyber attack. For example, DEQ should have a laptop computer on hand that is not connected to the state system, and maintain hard copies of important Energy Assurance documents in the appropriate and secure storage location.

The Department of Administration participates in the Multi-State Information Sharing and Analysis Center (MS-ISAC) which gives it a wider view of possible cyber security threats to state and local governments. ISACs are trusted entities established by Critical Infrastructure Key Resource (CI/KR) owners and operators to provide comprehensive sector analysis, which is shared within the sector, with other sectors, and with government. ISACs take an all-hazards approach; services provided include risk mitigation, incident response, alert, and information sharing. Formation of ISACs (http://www.isaccouncil.org/) in various sectors of the economy was encouraged by the federal government after the events of September 11, 2001. The number of centers as of April 2011 was up to sixteen. The electric sector (ES-ISAC) is the only utility sector that has its own ISAC and that appears to be in the development stage.

The Advanced Security Acceleration Project for the Smart Grid (ASAP-SG) is a utility-driven, public-private collaborative among the Department of Energy, the Electric Power Research Institute, and a large group of leading North American utilities. ASAP-SG is developing system-level security requirements for smart grid applications, such as advanced metering, third party access for customer usage data, distribution automation, home area networks, and synchrophasors.

The U.S. Department of Homeland Security houses the Industrial Control Systems – Computer Emergency Response Team (ICS-CERT). Based out of the Idaho National Laboratories at Idaho Falls, representatives can arrive at the scene of a cyber attack to help diagnose the nature of the attack and help to reestablish continuity. (http://www.us-cert.gov/control_systems/ics-cert/). ICS-CERT representatives can analyze control systems related incidents, such as supervisory control and data acquisition (SCADAs) systems, and conduct vulnerability analysis. ICS-CERT also shares and coordinates vulnerability information and threat analysis through information products and alerts.

Resources

21 Steps to Improve Cyber Security of SCADA Networks – March 2006
http://www.oe.netl.doe.gov/docs/prepare/21stepsbooklet.pdf

National Institute of Standards and Technology Computer Security Resource Center "Introduction to NISTIR 7628 Guidelines for Smart Grid Cyber Security" September 2010. Useful overview of the report and of the issues facing cyber security.
http://csrc.nist.gov/publications/nistir/ir7628/introduction-to-nistir-7628.pdf

A summary of Federal Cyber Security Resources can be found in the EAP library and at NASEO
(http://www.naseo.org/eaguidelines/State_Energy_Assurance_Guidelines_Version_3.1.pdf#page=26, December 2009; electronic copy in EAP files).

American Petroleum Institute. Security Guidelines for the Petroleum Industry Chapter 7 gives a high-level overview of a cyber security program for a petroleum company.
http://www.api.org/policy/otherissues/upload/security.pdf

Chapter 11. State Plans for Enhancing Resiliency

Montana does not have a separate plan for the protection of critical energy infrastructure. The Montana Department of Justice, through the Critical Infrastructure Protection Program, is the lead agency for all critical infrastructure and therefore covers energy infrastructure (see Chapter 4). The Disaster and Emergency Services Division tests scenarios on critical infrastructure. The energy industry has its own plans and coordinates with federal authorities either directly or through industry associations.

Critical state energy infrastructure and key assets already are described and prioritized in plans prepared by these agencies. This Energy Assurance Plan does not duplicate that work. The Department of Environmental Quality (DEQ) does note that these plans take a finer-grained and more Montana-centered look at energy infrastructure than does federal planning, which identifies only one piece of critical energy infrastructure in the state. These plans, and the programs that implement them, assess risk, vulnerabilities, criticality and the nature of possible threats to the energy infrastructure. More detailed assessments of the individual facilities, and identification of protective measures, are done by the entities owning the facilities.

Montana does have various programs aimed at enhancing the resiliency of energy systems, but these are driven by concerns other than emergency planning. Enhanced reliability and resiliency are standing goals for the entire energy sector. Montana's Energy Assurance Plan relies on existing efforts to meet these goals. It does not call for any additional efforts to meet these goals. Montana has been hard pressed to identify any technology or program, with the possible exception of the Strategic Petroleum Reserve, which has been deployed primarily to prepare for a potential emergency. Instead, advances in the energy sector seem to be driven more by efforts to cut costs or reduce environmental impact. Montana law and practice already encourage consideration of contingencies, including potential emergency situations, and Montana already is blessed with a diverse range of energy resources.

One area this Energy Assurance Plan does recommend for further investigation is improved cyber-security. Whether a state like Montana can or should take the lead in promoting cyber-security is a reasonable question. The resources needed to monitor and improve cyber-security are more readily available in energy companies and at the national level than in Montana. However, with both the national and state economy inextricably bound up in electronic information flows, some enhancement of Montana's cyber-capabilities seems warranted.

The state does already take efforts to protect the data it holds on critical infrastructure. The data believed to be most sensitive are protected by special authority given the Montana Department of Justice and the Montana National Guard. However, one of the most frustrating aspects of protecting sensitive data is determining what data would be useful to actors bent on disrupting the energy system and what data needs to be more widely available to keep the system working well. Withholding data from the public can have its own negative consequences. For instance, the protection given pipeline data

may have increased the likelihood and impact of the natural gas pipeline breaks in Michigan and California in 2011.

It appears to be easy for those charged with protecting energy infrastructure to fall victim to the “fighting the last war” syndrome, preparing for the last emergency instead of for the next emergency. Data that once had to be protected to thwart missile attacks during the Cold War may be less critical to protect against modern day efforts to disrupt the energy system. In such cases, security efforts at best are misguided and worst of no value at all. Organizations and individuals both can fail to appreciate just how deep the information is on the Internet. One agency or unit of a utility can be seeking to protect certain information at the same time another agency or unit is releasing it publicly.

Appendix A. Acronyms

ACAMS: Automated Critical Assets Management System
AECO: A natural gas trading hub in Alberta
aMW: Average Megawatt
BA: Balancing Authority
BCF: Billion Cubic Feet
BPA: Bonneville Power Administration
CIG: Colorado Interstate Gas (line)
DEQ: Department of Environmental Quality
DES: Disaster and Emergency Services
DFWP: Department of Fish, Wildlife and Parks
DMA: (Montana) Department of Military Affairs
DNRC: Department of Natural Resources and Conservation
DoA: Department of Administration
DOE: Department of Energy (federal)
DOJ: (Montana) Department of Justice
DOT: Department of Transportation (federal)
DPHHS: (Montana) Department of Public Health and Human Services
EAP: Energy Assurance Plan
EEAC: Energy Emergency Assurance Coordinators
EIA: Energy Information Administration
EOC: Emergency Operations Center (DOE)
EPA: Environmental Protection Agency
EPP: Energy and Pollution Prevention (Bureau of DEQ)
ESF: Emergency Support Function
FEMA: Federal Energy Management Agency
FERC: Federal Energy Regulatory Commission
FMCSA: Federal Motor Carrier Safety Administration
GMAC: Governor's Multi-Agency Coordination Group
HCA: High Consequence Areas
ICS: Incident Command System
ICS-CERT: Industrial Control Systems – Computer Emergency Response Team
ISAC: Information Sharing and Analysis Center
kV: Kilovolt
LDC: Local Distribution Company
LDRPS: Living Disaster Recovery Planning System (L-10)
LIEAP: Low Income Energy Assurance Program
LNG: Liquefied Natural Gas
LPG: Liquefied Petroleum Gas
MATIC: Montana All Threat Intelligence Center (DOJ)
MCA: Montana Code Annotated
MDot: Montana Department of Transportation
MDU: Montana-Dakota Utilities
MERF: Montana Emergency Response Framework
MISO: Midwest Independent Transmission System Operator MIPA: Montana Infrastructure Protection Alliance

MMcf: Million Cubic Feet
MRO: Midwest Reliability Organization
MS-ISAC: Multi-State Information Sharing and Analysis Center
MWH – Megawatt hour
NASEO: National Association of State Energy Offices
NERC: North American Electric Reliability Corporation
NOAA: National Oceanic and Atmospheric Administration
NWE: NorthWestern Energy
PHMSA: Pipeline & Hazardous Materials Safety Administration
PPAD: Planning, Prevention and Assistance Division (DEQ)
PSC: Public Service Commission
PV: Photovoltaic
SCADA: Supervisory Control and Data Acquisition
SEAP: State Energy Assurance Planners
SECC: State Emergency Coordination Center
SEO: State Energy Office
SERC: State Emergency Response Commission
UCC: Uniform Commercial Code
WAPA: Western Area Power Administration
WBI: Williston Basin Interstate
WECC: Western Electricity Coordinating Council

Appendix B. ENERGY EMERGENCY ROLODEX (redacted)

Appendix C. HISTORICAL REVIEW OF ENERGY INCIDENTS

Though Montana has been an energy producing and exporting state for more than a century, it has experienced a relatively small number of energy emergencies. Nonetheless, isolated incidents of acute severity have occurred. Likely sources in Montana of energy emergencies are forest and rangeland fires, floods and dam failures, earthquakes, storms, droughts, and human-caused events. Outside of Montana, earthquakes, hurricanes and human-caused events such as petroleum embargoes have had or could have significant impact on the Montana energy system.

Fire

Wildland fires occur in all parts of the state, but tend to be more prolonged in the forested mountainous parts of the state. In a historical context, forest fires have had minimal impact on energy supplies and distribution systems only because the infrastructure was relatively undeveloped at the time of major events. Should the scale of certain past fire events repeat, the energy component of the disaster would almost certainly be of a major scale. For example, the “Big Burn,” a forest fire in late summer of 1910, is believed to have been the largest in the recorded history of this country. Over the course of two days, 3 million acres of forest burned as hurricane-force winds integrated numerous fires and drove flames eastward from the Idaho panhandle into

Montana. Most of the affected acreage was in the sparsely populated panhandle of Idaho and western Montana. Nonetheless, as many as 100 deaths were attributed to the fires. Today, of course, the same area is home to a great many more people and contains a diverse energy infrastructure, including Montana's largest electrical transmission line and numerous liquid fuel and natural gas pipelines. A forest fire of the magnitude of the 1910 incident could negatively affect energy distribution in the western part of the state and in eastern Washington, Idaho, and Oregon.

The year 2000 was a major fire season in Montana. The Boulder Complex forest fires that summer consolidated and Interstate 15 about 20 miles south of Helena was closed due to limited visibility. The fire burned under a section of the twin 500-KV transmission line near Boulder Hill. The fire path was anticipated, however, and the incident passed without major service loss to the out-of-state markets. The Bucksnort Fire in the Spokane Hills area east of Helena for a time threatened a critical communication facility known as Beacon Hill, which is used by the nearby Canyon Ferry hydroelectric facility on the Missouri River. Incident managers at Disaster and Emergency Services (DES) had initially assumed Beacon Hill was a general communications facility. Personnel in DES were informed about the important status of the communications equipment and more fire fighting resources were diverted to protect the structures.

Other fires before and since 2000 have temporarily shut down high voltage lines in Montana resulting in electricity re-routes. The I-90 complex of fires west of Missoula in 2005 resulted in a five-day outage of the Garrison-Taft 500 kV line. The length of outage reflected the time required for the crew to reach all towers in the affected area and inspect for damage before re-energizing the line. In August 2006, the Rattlesnake-Garrison 230 kV line near Bearmouth was taken out of service for three days while the crew rebuilt some structures.

To the extent that wildfires increase in frequency in Montana, these occurrences could also increase. However, the high voltage transmission system in the U.S. is designed with built-in redundancy to withstand the loss of the largest transmission line in a given balancing area. Further, according to emergency personnel at NorthWestern Energy, most forest and wild fires can be allowed to burn under the twin 500 kV lines with little damage or loss of service. When service is lost, the reason could be smoke causing current to arc to ground or de-energizing the lines to protect the safety of fire crews, as well as loss of towers and poles.

Water

Three types of water events occur in Montana that could trigger an energy emergency: river floods, flash floods, and dam failures. All have historically occurred in the state (see State of Montana Natural Hazards Mitigation Plan – 2007 Update). Flash flooding tends to be isolated and historically has not caused major energy problems. Dam failures have also remained largely facility-specific. The original Hauser Dam on the Missouri River – an early hydroelectric facility in the state – collapsed in April 1908, about a year after it was commissioned. The cause of the failure is linked to poor engineering, although that spring was considered a major flood event. The dam

generated electricity for mining and industrial load in the Butte-Anaconda area. And while the failure and later spring flooding caused much of the industry to shut down, this isolated incident is not believed to have caused any type of an emergency.

A portion of a dam wall collapsed during construction of Fort Peck Dam along the Missouri River in September, 1938. The hydroelectric units had not yet been commissioned and the dam had not yet filled, although eight workers were killed. Once again, the event was linked to an engineering problem rather than to abnormally high water.

Flooding is initiated by high levels of rainfall, sudden snowmelt and dam failures, and all three have occurred in cascading series. June of 1908 was a major flood year for both the upper Columbia and Missouri River Basins. The June 6, 1908 Butte Miner reported major communication breakdowns with the copper mines and smelter closed and numerous washouts along the area's railways. A great deal of mine tailings and heavy metals from the Butte mining district were washed into the Clark Fork of the Columbia River as numerous settling pond dams failed during the flood event. The brand new Clark's Dam (later named Bonner Dam) at the confluence of the Big Blackfoot and the Clark Fork Rivers just upstream from Missoula held, in spite of an estimated 48,000 cubic feet per second flowing over its spillway. The powerhouse was flooded, however, and remained down for most of the rest of the summer. The U.S. Geological Survey began monitoring stream flows in 1912 and peak flows have not approached that record since. Clearly, a repeat of the conditions exhibited during the flood year of 1908 could threaten energy infrastructure statewide.

A geographical band of Montana running from Kalispell in the west to Great Falls in the east experienced a 100-year flood event during the spring of 1964. Both the upper Columbia and Missouri River Basins were affected, although flooding was much less widespread than in 1908. Nonetheless, the event of 1964 ranks among the worst in recorded history, at least in terms of lives lost and property damaged. The Dearborn, Sun, Teton, and Marias Rivers were most greatly affected as 11 inches of rain fell in less than two days in early June. In the upper Columbia Basin, 15 inches of precipitation accumulated over a thirty-hour period, clearing off high elevation snowpack, and overrunning the banks of the Flathead River and its upper tributaries.

Two dams east of the Continental Divide failed during the flooding period – Swift Dam on Birch Creek and Two Medicine Dam on Two Medicine Creek, both non-hydroelectric irrigation reservoirs on the Blackfeet Indian Reservation. Thirty residents of the reservation died, though some observers believed that more lives might have been saved had communication lines not gone down. A natural gas line to the city of Kalispell installed only two years before was washed out by the flooding. However, product remaining in the line was sufficient to provide service to the town, probably because of the nominal load given the time of year and the small number of customers. President Lyndon Johnson declared the entire state a disaster area on June 9, 1964.

The flooding of 2011 caused a leak in the Silvertip crude oil pipeline owned by ExxonMobil (commonly referred to as Exxon). The leak dumped over 1000 barrels into the Yellowstone River at Laurel, making headlines across the nation and temporarily causing the Exxon Refinery in Billings to cut back production of refined products. However, this was not considered an energy emergency, because the break had no significant impact on consumers as the oil companies themselves took actions to rebalance the market.

Earthquake

Montana is among the most seismically active states in the union. The Intermountain Seismic Belt extends along much of the northern Rocky Mountains and is evident in Montana from Flathead Lake southwesterly to the border with Yellowstone National Park. A branch, known as the Centennial Tectonic Belt occurs along the southwestern border with Idaho. Earthquakes that occur on the West Coast of the U.S. will likely have little effect on the seismic zones in Montana – there is no known direct connection.

Earthquakes clearly occurred during the pioneer era, although little is known about magnitude and damages. A significant earthquake (magnitude 6.5) is on record from June 1925 – probably centered in the Gallatin Valley. The small towns of Manhattan, Logan, Lombard, and Three Forks sustained considerable property damage. In October and November, 1935 a series of earthquakes shook the capital, Helena. A great many aftershocks continued to the end of December, 1935 with loss of life and property damage estimated at 4 million Depression-era dollars. Perhaps 60 percent of the city's buildings sustained damage from the tremors and electricity distribution was affected.

The most severe earthquake ever measured in the state occurred in August, 1959 near Hebgen Lake in southwestern Montana. The 7.5 magnitude quake triggered a landslide in the Madison River Canyon that buried more than a mile of roadway and caused 28 fatalities, in spite of a geographically remote epicenter.

Western Montana is clearly more at risk for seismic activity than the eastern two-thirds of the state. Due to its proximity to the seismically active Hebgen Lake region, southwest Montana is at greater risk than the remainder of western Montana (www.iitk.ac.in/nicee/wcee/article/13_1013.pdf). A disaster mitigation plan for Butte-Silver Bow in 2004 modeled a magnitude 6.0 earthquake centered in close proximity to the townsite. The study predicted that communications would be 20 percent functional immediately following the event and 70 percent functional 24 hours following. Butte is the energy communications center for NorthWestern Energy and for PPL Montana's generation facilities.

In 2004, the Department of Natural Resources and Conservation (DNRC) commissioned the Montana Bureau of Mines and Geology's Earthquake Studies program to perform a state-wide seismic hazard study. The report contains maps that show areas of highest probability for earthquakes. The study projections show 2, 5, and 10 percent probability of exceeding a base over a long period of time.

According to the principal investigator and director of Earthquake Studies at the bureau, two types of seismic events can affect energy infrastructure, particularly those buried underground. The first (and least likely) involves seismic faults that rupture to the earth's surface during an event. These types of events occur along the trace of the fault and are usually caused by unusually strong seismic activity. These earthquakes in our region are historically in the 6.5 to 7.5 range. Cracking and uplifts can break underground utility lines, including natural gas and liquid lines.

The second (and more common) type of event is earth shaking, which occurs with earthquakes in the comparatively modest 5 to 6 range and stronger. Strong shaking can cause problems for structures not designed for seismic events. Liquefaction occurs in some soils where ground water is near the surface and most valleys in western Montana feature shallow ground water. Some pipelines "may perform poorly" as a result of these types of events, the investigator said in an interview.

Montana's main seismic faults are well studied and monitored, principally by the Bureau of Mines and Geology's Earthquake Studies Office and all detectable seismic events are measured and logged at the laboratory in Butte. The civil engineering program at Montana State University conducts seismic engineering analyses for certain essential above-ground infrastructural facilities as well.

The natural gas transmission lines that serve most of the western part of the state run through an active seismic zone. Some electrical transmission lines exporting power out of state also cross earthquake areas as do refined petroleum product lines. Clearly, the western third of Montana is at high risk for buried pipelines and above ground infrastructure. The risk appears to be the greatest near Hebgen Lake and the Centennial Mountains. Significant risk is also apparent in the valleys of western Montana, including the Flathead Valley and areas near and around Canyon Ferry Reservoir.

The document "Improving Natural Gas Safety in Earthquakes" by the California Seismic Safety Commission (2002) provides more insight on earthquakes and natural gas disasters and is found at http://www.seismic.ca.gov/pub/CSSC_2002-03_Natural%20Gas%20Safety.pdf.

Severe Weather

From an energy perspective, Montana is probably most vulnerable during extended periods of extreme cold. Historical weather data shows a 1983 cold snap in southwest Montana kept temperatures below zero from December 19 – 25, with several days pressing to minus 50 degrees Fahrenheit. Condensate in the pipeline at the Choteau city gate froze during such a cold snap, cutting off natural gas to the town.

Natural gas use peaks during extremely cold periods. Any extended failure of the natural gas delivery system during a cold snap would force many residents to turn to electricity and/or wood for space heat. Census data indicates that perhaps 12-15 percent of households in western Montana can either supplement or solely deliver

space heating with some type of wood-burning appliance or fireplace. Portable electric resistance space heaters are also common supplemental appliances. But immediate and heavy use of these alternatives during extreme and prolonged periods of cold weather presents its own set of problems and vulnerabilities.

Droughts regularly affect parts or all of Montana. While the Dust Bowl days of the 1930's may be the most famous, the Pacific Northwest drought in 1977 had the greatest impact on the energy supply system. This drought episode was most severe in the western and south-central parts of the state. Water supplies were so critical by June of 1977 that officials from Montana were working with others from Idaho, Washington, and Oregon on the Northwest Utility Coordination Committee in an attempt to moderate potential hydroelectricity shortages. On June 23, then-Gov. Tom Judge issued an energy supply alert and ordered a mandatory ten percent reduction in electricity use by state and local governments.

Montana has a Drought Response Plan which is led by the Montana Department of Natural Resources and Conservation. This plan was developed in 1985 and revised in 1988 and 1995. The primary impacts addressed in this plan are certain crops and livestock, tourism, hydroelectric energy production, domestic water supplies, wildfire, and fish and wildlife. (More information on this is found at http://www.archive.org/details/montanadroughtre1995mont.)

Montana has historically been visited by tornados and at least one web site tracks the incidence of them (http://www.tornadoproject.com/alltorns/mttorn.htm). Not surprisingly most occur east of the Continental Divide. However, the western part of the state has also been visited by damaging microburst windstorms and severe hail storms.

Weather events outside of Montana can significantly affect Montana. Hurricane Katrina did not damage Montana refineries or curtail regional crude supplies, yet gasoline prices still went up as a result. Because Montana is part of a larger market, increased prices elsewhere attracted buyers to gasoline from Montana, even with the extra cost of transportation. DEQ found gasoline price increases in Montana to be in-line with price impacts in the rest of the U.S. Natural gas prices also rose dramatically in Montana after Hurricanes Katrina and Rita damaged infrastructure in the Gulf region.

Human-Caused Events

Montana's energy infrastructure has been affected by human-caused events. In early February, 1989 several runaway Montana Rail Link freight cars collided with a standing work train in Helena causing an explosion that severed main electrical lines and damaged a substation. Electricity was knocked out for many of the 37,000 area residents for about six hours. Emergency communications were disabled during the early phases of the event. The temperature at the time of the accident was minus 27 degrees Fahrenheit with strong wind chill. Damage exceeded $6 million and 2,000 people were evacuated from the immediate area for a short time. Post-incident

investigations indicated that operator decisions influenced by the severe weather were a major contributor to the accident.

According to a national safety report to Congress, third-party excavation damage is the single greatest cause of accidents among natural gas distribution pipelines. In Montana, state law requires contractors and others to use a “one-call” center before starting an excavation. Owners of underground pipelines (and other utilities) have two days to respond and to survey the site for clearance. If an excavator damages an underground facility, the facility owner is supposed to collect a penalty and turn that damage fee over to the appropriate one-call center. While the law requires incidents to be reported to one-call centers, only a handful of facility owners in Montana have historically reported incidents. Federal officials are urging states to strengthen their one-call programs, paying particular attention to natural gas and hazardous liquid pipelines. With passage of the Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006 (PIPES), the federal government was authorized to establish a process for potentially taking enforcement action in states that have laws that are lacking.

Several incidents in Montana have involved vehicles severing natural gas lines at or near city gate facilities, causing short term supply problems. One incident left a small north-central town without gas after a worker accidentally severed a line. All pilot lights had to be re-lit, which took several days to accomplish. Electrical transmission lines have been damaged by vandalism as well, although there are no recorded significant effects.

Market Emergencies

The effect of events like these pale in comparison to those associated with market emergencies. In Montana, the only emergency ever declared under the Governor’s Energy Emergency Powers Act was for a market emergency. Market emergencies may not involve damage to infrastructure in Montana or to infrastructure serving Montana. A market emergency can possibly arise without infrastructure damage anywhere. These situations entail shortages of energy products that reflect several types of incidents, including damage to infrastructure at points far removed from Montana, actual declines in the natural resource base, or market manipulations. These eventually can lead to shortages that cause critical damage to the economy and threaten health and safety, just like emergencies resulting from damage of infrastructure; however, they first appear as unacceptable increases in price.

In 2005, Gov. Brian Schweitzer invoked the Governor’s Energy Emergency Powers Act for a market emergency. In 2005, following Hurricane Katrina, the price of natural gas had skyrocketed across the country; in Montana, NorthWestern Energy (NWE) was charging $13.78/dkt. Following the failure of Congress to provide extra funding to low-income home heating assistance, the Governor used his emergency powers in December 2005 to order $2.5 million of one-time state funds to supplement the state's program.

Another major market emergency involved manipulation of electricity prices in the West. The Western U.S. Energy Crisis of 2000 and 2001 was a situation initiated by a shortage of electricity in California caused by illegal market manipulations by the Texas-based energy trading company Enron. California experienced multiple large-scale blackouts and a major utility bankruptcy. The economic fall-out of the crisis is at least partially credited with the successful recall election of Gov. Gray Davis. Drought, delays in approval of new power plants, and market manipulation decreased electricity supply. An 800 percent increase in wholesale prices was seen between April and December 2000. In addition, rolling blackouts adversely affected many businesses dependent upon a reliable supply of electricity, and inconvenienced a large number of retail consumers.

Although California had an installed generating capacity of 45 gigawatts (GW, or 1,000 megawatts), at the time of the blackouts demand was 28GW. A demand-supply gap was created by energy companies, mainly Enron, to create an artificial shortage. Energy traders were able to sell power at premium prices, sometimes up to a factor of 20 times its normal value. Because the state government had a cap on retail electricity charges, this market manipulation squeezed the industry's revenue margins, causing the bankruptcy of Pacific Gas and Electric Company (PG&E) and the near bankruptcy of Southern California Edison in early 2001. The financial crisis cost $40-$45 billion.

The California crisis likewise provided an example of how the market can mitigate an emergency. In the Pacific Northwest, aluminum plants and refineries along with corporate and small business farms chose to abandon operations of their core businesses and not exercise their options to purchase electricity at a guaranteed price. Instead, and almost overnight, they became electricity brokers, selling their positions to users willing to meet the much higher market prices. Consequently, demand was reduced and blackouts in the larger region, including Montana, were avoided due in part to market players adjusting their consumption patterns.

The classic examples of a market energy emergency are the oil embargoes of 1973 and 1979. On the international level, petroleum price increases disrupted market systems. In the United States, government price controls may have further worsened the crisis by limiting the price of oil already discovered while allowing newly discovered oil to be sold at a higher price. A result was a market perception of artificial scarcity. The government-instituted rationing even led to incidents of violence in the U.S and Montana.

The uncertainty of when Peak Oil will occur, or whether it has already occurred, may also cause energy prices to swing widely in the future and create economic disturbances. As oil markets tighten, spikes in oil price could increase in intensity and frequency. Other aspects of obtaining foreign oil could also present high and uncertain costs. Severe oil price increases would hurt the U.S. economy which is heavily based on oil. On the other hand, public perceptions and policies surrounding Peak Oil may also increase the search for alternatives to oil. There is no consensus on what may happen as a result of peak oil production. Because Montana is a part of the national and

world oil market, any effects from Peak Oil would be felt in Montana as well as elsewhere.

Appendix D. LEGAL AUTHORITIES

Legal Authorities for State Agencies

The Governor has general and wide-ranging authority for all types of emergencies [Title10, chapter 3, part 1 MCA]. In addition to this authority to take action, the Governor also has authority to make emergency appropriations from the general fund [10-3-312 MCA; http://data.opi.mt.gov/bills/mca/10/3/10-3-312.htm]. The Disaster and Emergency Services Division, Department of Military Affairs is the Coordinating Agency during an energy emergency. DES "is responsible to the Governor for carrying out the planning and program for disaster and emergency services of this state." (10-3-105 MCA)

The authority of the Governor to declare an energy emergency comes from the Energy Supply Emergency Powers Act [Title 90, chapter 4, part 3 MCA; see http://data.opi.mt.gov/bills/mca_toc/90_4_3.htm]. The key portion of those statutes reads:

> **90-4-310 (4)** In a declared state of energy emergency, the governor may:
> (a) implement programs, controls, standards, priorities, and quotas for the production, allocation, conservation, and consumption of energy, including plans for the curtailment of energy. However, in so doing, the governor may impose controls, quotas, or curtailments according to the nature of the end use to be made of the energy consistent with existing transmission and distribution systems serving the geographic area affected by the energy emergency.
> (b) suspend and modify existing pollution control standards and requirements or any other standards or requirements affecting or affected by the use of energy, including those relating to air or water quality control; and
> (c) establish and implement regional programs and agreements for the purposes of coordinating the energy programs and actions of the state with those of the federal government and of other states, localities, and other persons.

The Department of Environmental Quality (DEQ) is the Primary Agency for responding to energy emergencies. This lead authority was delegated to DEQ's predecessor agency in the Montana Energy Emergency Contingency Plan (1981). This current Energy Assurance Plan replaces that plan. Recently, DEQ has been designated by DES as the Primary Agency responsible for the state's ESF-12 annex.

Montana adopted rules to implement the Energy Emergency Contingency Plan. These existing rules deal only with petroleum product and electricity shortages. They are found under ARM 14.8.xxx [http://www.mtrules.org/gateway/ChapterHome.asp?Chapter=14%2E8]. Once the Energy Assurance Plan is complete, these rules will be revised or replaced as necessary. Several of the rules, especially those dealing with petroleum, may be retained; these deal with ordering signage and volume limits on sales at gas stations

(ARM 14.8.123, 14.8.124 and 14.8.127) and ordering cutbacks in certain uses of electricity (ARM 14.8.219). Most of the electricity regulations no longer apply now that the industry has been restructured.

The Public Service Commission (PSC) generally does not have specific state authority to deal with an energy emergency. The PSC does oversee the functioning in general of regulated utilities, but not of rural electric cooperatives or of any aspect of the petroleum industry. While it does not require energy emergency plans from electric utilities, the PSC does investigate the condition of the transmission and distribution system. (For instance, see docket D2003.8.109, the "Liberty Study.") The PSC is delegated federal authority to oversee natural gas pipeline safety (see Appendix D). These safety responsibilities come from Title 49, Part 191 and 192 USC. The PSC follows federal regulations without modification. (See http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&tpl=/ecfrbrowse/Title49/49cfrv3_02.tpl.)

The Department of Justice operates the Critical Infrastructure Protection program, the goal of which is to prevent damage to critical infrastructure, in the energy sector and otherwise. Its authority derives from the Critical Infrastructure Information Act of 2002 (http://www.dhs.gov/xlibrary/assets/CII_Act.pdf). A general discussion of this program is found at the Department of Homeland Security's Protected Critical Infrastructure Information page (http://www.dhs.gov/files/programs/editorial_0404.shtm).

Legal Authorities for Federal Agencies

Authorities for the federal agencies with which DEQ might work during an energy emergency are located in the National Association of State Energy Offices (NASEO) State Energy Assurance Guidelines (Version 3.1, December 2009) in Appendix C (p. 85 of the file).
http://www.naseo.org/eaguidelines/State_Energy_Assurance_Guidelines_Version_3.1.pdf.

Appendix E. FEMA and the NATIONAL RESPONSE FRAMEWORK

Under the Stafford Act and Executive Orders 12148, Federal Emergency Management, and 12656, Assignment of Emergency Preparedness Responsibilities, the Federal Emergency Management Agency (FEMA) has been delegated primary responsibility for coordinating federal emergency preparedness, planning, management, and disaster assistance functions. FEMA also has been delegated responsibility for establishing federal disaster assistance policy.

FEMA has the lead in developing and maintaining the National Response Framework (NRF) (http://www.fema.gov/emergency/nrf/) which describes the structure for organizing, coordinating, and mobilizing federal resources to augment state and local efforts under the Stafford Act and its implementing regulations that appear in 44 CFR 206. The NRF also may be used in conjunction with federal agency emergency

operations plans developed under other statutory authorities as well as memorandums of understanding among various federal agencies. The NRF is implemented through regional supplements developed by FEMA, and the regional offices of other federal agencies, that describe specific actions, operating locations, and relationships to address the unique needs of the region and states. From time to time, operations supplements to the NRF may be issued to address special events that merit advanced planning, such as the Olympics or presidential inaugurations.

The NRF is comprised of three core documents: the Emergency Support Functions (ESF); Support and Incident Annexes; and the Partner Guides. It also summarizes federal planning assumptions, response and recovery actions, and responsibilities. Separate Emergency Support Function Annexes describe the mission, policies, concept of operations, and responsibilities of the primary and support agencies involved in the implementation of key response functions that supplement state and local activities. Energy is Emergency Support Function-12 (ESF-12).

Under the Stafford Act, a Governor may request that the President declare a major disaster or an emergency if an event is beyond the combined response capabilities of a state and affected local governments. Based upon the findings of a joint federal-state-local Preliminary Damage Assessment indicating the damages are sufficient to warrant assistance under the Act, the President may grant a major disaster or emergency declaration. No direct federal assistance is authorized prior to a presidential declaration. However, FEMA can use limited pre-declaration authorities to move Initial Response Resources (critical goods typically needed in the immediate aftermath of a disaster, e.g., food, water, emergency generators) and emergency teams closer to potentially affected areas. FEMA also can activate essential command and control structures to lessen or avert the effects of a disaster and to improve the timeliness of disaster operations.

Under the Stafford Act, when an incident poses a threat to life and property that cannot be effectively dealt with by state or local governments, FEMA can request that the Department of Defense (DOD) utilize its resources prior to a declaration to perform any emergency work “essential for the preservation of life and property” under the Stafford Act. Following a declaration, the President may direct any federal agency to use its authorities and resources in support of state and local assistance efforts to the extent that provision of the support does not conflict with other agency emergency missions. A state must commit to pay a share of the cost to receive certain types of federal assistance under the Stafford Act. In extraordinary cases, the President can choose to adjust the cost share or waive it for a specified time period. The presidential declaration notes any cost-share waiver, and a FEMA-State Agreement is signed that stipulates the division of costs among federal, state, and local governments and other conditions for receiving assistance.