Workplan Draft
Natural Gas Workgroup

Background: In a letter to the Commission dated February 4, 2019, the Governor requested the Michigan Public Service Commission conduct a statewide energy assessment which reviews the supply and deliverability of natural gas, electricity, propane, and contingency planning for all three energy sectors. The letter is in response to the cold weather events of January 29-31, 2019, combined with the fire at Consumers Energy Company's Ray Compressor Station, which tightened the supply of natural gas to heat homes, at the same time MISO had declared all electric generation to run at maximum capacity (including gas-fired electric generation). The resulting temporary shortage required a statewide appeal to conserve natural gas.

Team Lead: Kevin Spence (Energy Operations Division)

Sponsor: Patricia Poli (Energy Operations Division Director)

Team Members: David Chislea, Nathan Miller, Jim LaPan

Issue / Goal / Objective	Proposed Activities	Deliverables / Key Milestones

Create team and develop a workplan and approach to completing Natural Gas sections of outline.	• Schedule team meeting
	  o February 21, 2019
	• Prepare draft workplan outline with team
	• Identify vital information needed and/or questions to ask utilities
	  o See Attachment 1
		February 19-25, 2019

Finalization of team and workplan.	• Meet with other workgroup leads and team members to discuss cohesive approach to completing assessment	February 25, 2019
Meeting with internal Staff: Commissioners/advisors/MAE director to inform of final outline, introduce team, discuss workplan.	• Workgroup chair report to Commissioners	March 1, 2019

Issue / Goal / Objective	Proposed Activities	Deliverables / Key Milestones

Visit each gas utility and review natural gas system planning models.
Develop contingency scenarios to assess robustness of contingency planning.
	• Schedule meeting(s) with each gas utility
	  o Consumers Energy – March 15
	  o DTE Gas – March 7
	  o SEMCO – March 22
	  o Michigan Gas Utilities - Pending
	• Develop an agenda and key topics of discussion for meeting(s) with utilities
	  o See Attachment 2 for an example
	• Capture/Summarize findings and compile a list of necessary materials to request
		March 1-30, 2019

Report drafting – except Gaps section Assign report sections to team members to draft.	• Assigned report sections for team members to draft: • **Regulatory Oversight of Energy Planning and Infrastructure** – Kevin Spence, support by Cindy Creisher, Nyrhe Royal, and Nora Quilico • **Risk Assessment** – Nathan Miller, support by Cindy Creisher • **Vulnerabilities** – Dave Chislea/Jim LaPan, support by Tim Wolf and Alex Morese • **Contingency Planning Methodologies and Assumptions** – Dave Chislea/Jim LaPan • **Operational Practices of Energy Systems** – Kevin Spence for Technical Standards and Nathan Miller for Safety Standards and Storage	April
Identify Gaps (Section VIII) in Existing Planning, Operations, and Emergency Response.	• Pull together all of the recommendations made by individuals and/or subgroups for presentation to the larger group	Early May, 2019
Compile report sections.	• Meet with teams to compile draft report as workgroup sections are completed	Mid May, 2019

Issue / Goal / Objective	Proposed Activities	Deliverables / Key Milestones
Final draft report compiled and provided to Commission.	• Commission to provide workgroups editing/revisions/approval of recommendations	June 1, 2019
Commission provides Energy Assessment report to Governor.		July 1, 2019
Commission issues Order related to findings from Energy Assessment report.	• Commission Order adopting in part, or in full, the recommendations in the Energy Assessment report and issues Orders accordingly	July-August, 2019

Attachment 1
Vital Natural Gas Information & Questions to Ask Utilities

I. Regulatory Oversight of Energy Planning and Infrastructure

a. Natural Gas System Planning
- **Determine number of end-users by customer class**
  - **Average volume usage by customer class**
- **Review of Annual Report (P-522) data similar or related data the Utilities maintain**

i. Storage
- **Long-term plans for each storage field for next ten years**
  - **Development, abandonment, replacement of vertical wells with horizontals, etc.**
- **Overview of system and outage planning**
- **Referencing Feb. 22, 2019 IPU Michigan Forum on Economic and Regulatory Policy**
  - **Acquire daily system demand and reserve capacity of top storage reservoirs and combined all other supply for 2014 polar vortex Peak Day, Jan. 30-31, 2019, and average Jan. 2019 day (see example of data requested at end)**
  - **Acquire hourly system demand and reserve capacity of top storage reservoirs and combined all other supply for 2014 polar vortex Peak Day and hourly from Jan. 30, 2019 Peak to Jan. 31, 2019 Peak (see example of data requested at end)**

ii. Compression
- **Long-term plans for each compressor station for next ten years**
  - **Development, abandonment, installing/replacing gas conditioning equipment, etc.**
- **Overview of system and outage planning**

iii. Transmission
- **Long-term plans for each transmission line for next ten years**
  - **Installations, abandonment, interconnections with other operators, existing/new contracts to draw gas from each interconnection if necessary, etc.**
- **Overview of system and outage planning**

iv. Distribution
- **Major distribution work planned for next ten years that hasn't been approved by the Commission**

- **Spread of deliverability pressures and plans for consolidation**
- **Potential customers refused due to lack of supply**
- **Overview of system and outage planning**
- **Case studies for outage and system expansion**

b. Infrastructure and operations and maintenance (O&M) expense prudence reviews through rate proceedings

c. Review of fuel arrangements to meet customer demand in Gas Cost Recovery proceedings

II. Risk Assessment

a. Infrastructure

i. Asset conditions and performance

- **Determine:**
  - **Use of static or dynamic risk model**
    - **Plans to change in the future**
  - **Process/factors involved in facility risk-ranking**
  - **Standards followed for risk-ranking**
  - **Plans to change risk-ranking process**
  - **Projects for system enhancements that have been identified**
  - **Projects for system enhancement that have been completed**
  - **Risk ranking methodology**
    - **Risk model manuals**

ii. Interconnection limitations or constraints

- **Determine inclusion of the following in risk assessment:**
  - **Interconnections**
  - **Supply constraints**
  - **Single source markets**
  - **Number of potential outages and restoration times**
- **Determine mutual-aid agreements in place and status**

iii. Visibility and controls (e.g., Supervisory and Control Data Acquisition (SCADA))

- **Long-term plans for enhancing SCADA to include more points of data or additional control points (flow control or valves)**
- **Determine number of regulator stations which have active SCADA monitoring**
  - **Plans for increasing that number**
- **Determine the number of main line valves out of total that are equipped with controls**

- **Plans to add more**

b. Investment trends and projections
    i. Capital investments (Historical and Projected by type)
        - **Determine overall investment by year and investment related to system reliability for the last five years**

    ii. O&M
        - **Determine overall spend by year and spend related to system reliability for the last five years**

    iii. Clean energy requirements and drivers; emerging energy technologies
    iv. Potential impacts of investments on reliability, operations, and energy supply and delivery risks

c. Adequacy of MPSC rules and best practices related to customer safety, reliability, and resiliency; customer notifications

III. Vulnerabilities

a. System limitations
    - **Determine:**
        - **Low points in system on a peak day, assuming zero failures**
            - **Peak day design factors**
        - **Existing system bottlenecks**
        - **Seasonal restrictions**
        - **Required outages for maintenance that impact deliverability**
        - **List of worst case scenarios/consequences on peak summer and winter days**
            - **Including any additional scenarios Staff requests**
        - **Hazardous analyses that have been completed**

b. Infrastructure failures
    - **Determine the most critical point to remain in service on a peak day**
        - **Failure for the last five years**
        - **Number of unintentional compressor station shutdowns**
        - **Number of over-pressure situations**
        - **Availability of units when required**
            - **Storage and compression**

c. Interconnections
    - **Determine the most critical interconnections for remaining in service on a peak day**

d. System redundancy

- **Determine markets that are served by a single pipeline or upstream source**

e. Single source supplies
   - **Determine markets that are served by a single pipeline or upstream source**

IV. Contingency Planning Methodologies and Assumptions

a. Transmission
   i. Distribution interconnections
      - **Determine:**
         - **Any distribution companies attached to transmission system and where they are located**
         - **Plans in place should that interconnection become unavailable**
         - **Firm/interruptible service contracts for those companies**
         - **How vital these supply points are to end users**
         - **The accessibility by both companies for emergency activities**
         - **Number of customer outages, >100 customers, in the last five years and the total number of customers impacted in each event**

   ii. Intrastate interconnections
      - **Determine:**
         - **Any intrastate transmission companies attached to transmission system and where they are located**
         - **Plans in place should that interconnection become unavailable**
         - **Firm/interruptible service contracts for those companies**
         - **How vital these supply points are**
         - **The accessibility by both companies for emergency activities**
         - **Plans for additional connections**

   iii. Interstate interconnections
      - **Determine:**
         - **Any interstate transmission companies attached to transmission system and where they are located**
         - **Plans in place should that interconnection become unavailable**

- **Firm/interruptible service contracts for those companies**
- **How vital these supply points are**
- **The accessibility by both companies for emergency activities**
- **Plans for additional connections**

iv. Peak design day
- **Determine peak design day; model being utilized**
- **Identify, on a peak day, the 1st, 2nd, and 3rd (by volume) source of gas supply. Identify based on major pipeline, supplier, storage facility, or city gate**
- **Determine a way to quantify source of supply reliability.**
  - **When the last time was that the source of supply was utilized**
  - **Studies that have been performed that determine where the Company purchases gas from, and what factors have led to that determination**
- **When the design day was last experienced**
- **Any anticipated changes to design day**

v. Contingency considerations
- **Analyze system model**
- **Ask for contingency plans if vital points are no longer in service (transmission, compression, and storage)**
- **As referenced in your tariff, provide, by priority classification, all customers and their associated monthly contracted volumes, excluding residentials**

vi. Effectiveness of modeling
- **Changes since 2013-14 polar vortex to "true-up" the model with actual measurements**
  - **Highlight any such changes made to the peak-day/Colder-than-normal scenarios in the GCR plan as a result of 13/14 and more recent Polar Vortex experiences**
- **Determine if "point-to-point" verification of flow model during design day conditions are being performed to verify that it is accurate**

b. Distribution

i. Planning and modeling
- **Review of distribution model**

ii. Contingency considerations

- **Analyze system model**
- **Ask for contingency plans if vital points are no longer in service (transmission, compression, and storage)**

iii. Effectiveness of modeling
- **Changes in recent years to "true-up" the model with actual measurements**
- **Determine if "point-to-point" verification of flow model during design day conditions are being performed to verify that it is accurate**

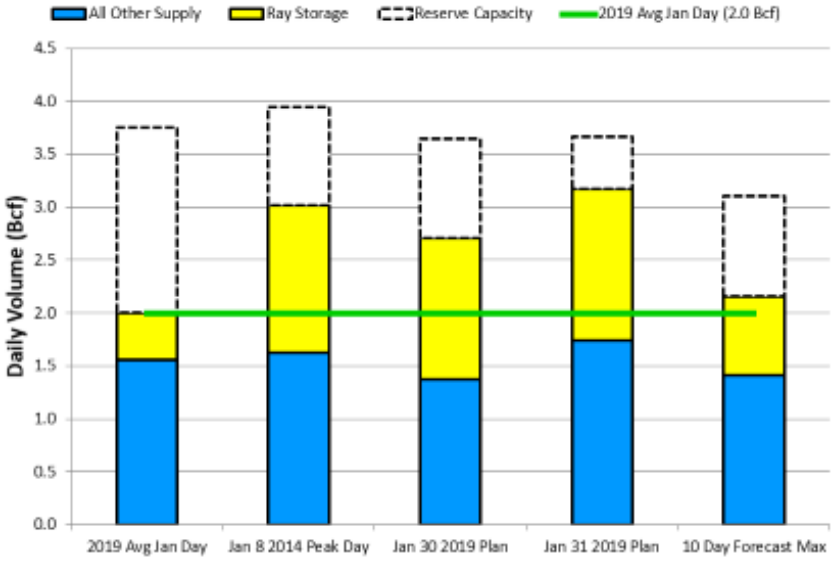
c. Load forecasting methodologies and risks
i. Evaluation of energy efficiency programs on consumption and peak demand
- **Determine the need for gas demand response**

V. Operational Practices of Energy Systems

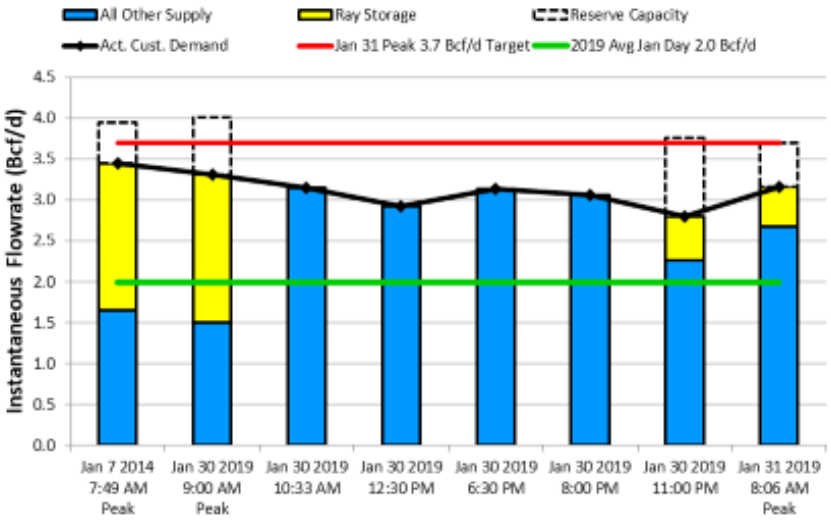
a. Gas technical and safety standards
i. Performance-based and prescriptive standards
ii. Onsite facility and operational inspections
iii. Accident investigation and compliance actions
iv. Interstate inspections

b. Storage facility operations

Daily System Demand and Reserve Capacity



Key Hourly System Demand and Reserve Capacity - Peaks & Jan 30-31



Attachment 2
Sample Agenda for Utility Meeting(s)

Mary,

This is in response to our discussions regarding a Gas Planning Meeting; thanks for reaching out to me. Here are some dates that will work for us for a meeting with you: March 6, 14, 18, 28, or 29. Our preference would be the 18, 28, or 29, but wanted to give you some options in case you have key players that cannot make that date work.

Staff attendees:

- Pat Poli
- Nathan Miller
- David Chislea
- Kevin Spence
- Jim LaPan
- Nora Quilico
- Nyrhe Royal
- Tayler Becker

Below are the agenda items that we would like to cover. You can prepare the agenda and send out an invite, so you can organize the agenda as you need to. If meeting in Coldwater works for your team, that would work well for us.

- Transmission (including Storage and Compression) System Planning overview
- Transmission (including Storage and Compression) outage planning
- Transmission (including Storage and Compression) worst case scenarios on peak summer and winter days
- Any additional transmission scenarios Staff would like to see
- Transmission hazardous analyses that have been completed
- Distribution system planning overview
- Distribution case study for an outage
- Distribution case study for system expansion
- Annual Report (P-522) data similar or related data the company maintains.

Thanks,

David J. Chislea
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