STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter, on the Commission's own motion to implement the provisions of Section 6t of 2016 PA 341	))))	Case No. U-18461

At the October 11, 2017 meeting of the Michigan Public Service Commission in Lansing, Michigan.

PRESENT: Hon. Sally A. Talberg, Chairman
Hon. Norman J. Saari, Commissioner
Hon. Rachael A. Eubanks, Commissioner

ORDER AND OPPORTUNITY TO COMMENT

On December 21, 2016, Public Act 341 of 2016 (Act 341), an amendment to Public Act 3 of 1939 and Public Act 286 of 2008, was signed into law and became effective on April 20, 2017. Section 6t(3) of Act 341, MCL 460.6t(3), requires each electric utility whose rates are regulated by the Commission to file an integrated resource plan (IRP) within 2 years from the effective date of the Act. Section 6t(3) further requires the Commission to "issue an order establishing filing requirements, including application forms and instructions, and filing deadlines for an integrated resource plan filed by an electric utility whose rates are regulated by the [C]ommission."

The Commission Staff (Staff) worked with various stakeholders to prepare a draft of the IRP filing requirements. The proposed IRP filing requirements are attached as Exhibit A to this order. The Staff also worked with various stakeholders to prepare filing requirements for alternative proposals consistent with Section 6t(6) of Act 341. Section 6t(6) provides, in part, that:

> An existing supplier of electric generation capacity currently producing at least 200 megawatts of firm electric generation capacity resources located in the independent system operator's zone in which the utility's load is served that seeks to provide electric generation capacity resources to the utility may submit a written proposal directly to the commission as an alternative to any supply-side generation capacity resource included in the electric utility's integrated resource plan submitted under this section….

MCL 460.6t(6). The filing requirements for alternative proposals are attached as Exhibit B to this order.

The Commission now seeks input from all interested persons on: (1) the proposed IRP filing requirements; and (2) the proposed filing requirements for alternative proposals. All comments and recommendations should be consistent with Section 6t of Act 341. Any person may submit written or electronic comments regarding either attachment. Comments must be filed with the Commission and must be received no later than 5:00 p.m. on October 27, 2017, with reply comments due no later than 5:00 p.m. November 9, 2017. Written comments should be sent to: Executive Secretary, Michigan Public Service Commission, P.O. Box 30221, Lansing, MI 48909. Electronic comments may be e-mailed to mpscdockets@michigan.gov. All comments should reference Case No. U-18461. All information submitted to the Commission in this matter will become public information available on the Commission's website and subject to disclosure. Comments should not include information commenters wish to remain private.

THEREFORE, IT IS ORDERED that interested parties may file written or electronic comments on the integrated resource planning filing requirements and or the alternative proposal filing requirements to be adopted pursuant to Section 6t of 2016 PA 341. The comments must be received no later than 5:00 p.m. on October 27, 2017, with reply comments due no later than 5:00 p.m. on November 9, 2017.

The Commission reserves jurisdiction and may issue further orders as necessary.

MICHIGAN PUBLIC SERVICE COMMISSION

Sally A. Talberg, Chairman

Norman J. Saari, Commissioner

Rachael A. Eubanks, Commissioner

By its action of October 11, 2017.

Kavita Kale, Executive Secretary

Integrated Resource Plan (IRP) Filing Requirements

October 11, 2017

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Application Instructions for Integrated Resource Plan Filings

These application instructions apply to a standard electric utility application for Michigan Public Service Commission (MPSC or Commission) approval of an Integrated Resource Plan (IRP) under the provisions of MCL 460.6t.[1] The application shall be consistent with these instructions, with each item labeled as set forth below.[2] Any additional information considered relevant by the utility may also be included in the application.

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Schedule

A utility shall coordinate with the Commission Staff (Staff) in advance of filing its application to avoid resource challenges with IRP applications being filed at the same time as IRP applications filed by other utilities. A utility may be requested to delay its IRP application to preserve a 21-day spacing between IRP applications.

MCL 460.6t(3) specifies that the initial IRP applications be filed within two years of the effective date of the act and also requires the Commission to issue an order establishing filing deadlines. The proposed initial IRP application filing deadlines are:

1. Consumers Energy Company: June 15, 2018 (or earlier date if requested and spaced at least 21 days apart from other IRP cases)
2. Upper Peninsula Power Company: October 1, 2018 (or earlier as requested)
3. Indiana Michigan Power Company: within forty-five (45) days of submission in its Indiana jurisdiction to align with the Indiana filing schedule (Indiana jurisdiction filing is due November 1, 2018)
4. Wisconsin Electric Power Company: January 25, 2019

[1]Variations from the standard instructions may occur as allowed by MCL 460.6t(4) for multistate utilities and those serving fewer than 1 million Michigan customers.

[2] Indiana Michigan Power Company (I&M) plans to file a single, total company IRP covering all of its customers in Indiana and Michigan with both the IURC and MPSC. Consistent with MCL 460.6t (4) for purposes in Michigan, I&M will prepare its 2018 IRP and subsequent IRPs in accordance with the requirements of the Indiana IRP Rules.

5. Northern States Power Company Wisconsin (Xcel): February 15, 2019 (or to align with Minnesota)
6. Alpena Power Company: March 8, 2019
7. Upper Michigan Energy Resources Corporation: March 29, 2019
8. DTE Electric Company: April 19, 2019

Following the initial IRP applications, the utilities shall comply with all future filing deadlines directed by the Commission and shall continue to coordinate with Staff to schedule future IRP application filing dates.

Filing Announcement

To facilitate the scheduling and preparation of IRP proceedings, any utility intending to file an IRP other than its scheduled IRP filing date, shall file a filing announcement, in a new docket, at least 30 calendar days prior to the proposed filing. The filing announcement, along with a proof of service, shall be served on all parties granted intervention in the utility's last IRP case, and the utility's last electric rate case. If the IRP described in the filing announcement is not filed within 120 days after filing of the announcement, the filing announcement will be considered withdrawn. If a certificate of necessity (CON) is also being filed, the same filing announcement would serve as the filing announcement required for the CON.

The filing announcement shall include:

a) Statement of intent to file an IRP;
b) Estimated date of filing;
c) Information related to any stakeholder engagement meetings that have already taken place or are scheduled to take place; and
d) Information related to any CON application that would be filed with the utility's IRP.

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The Commission may, if necessary, order a delay in filing an application to establish a 21-day spacing between filings. The filing announcement is submitted at least 30 calendar days prior to the IRP application, thus providing the Commission with sufficient time to issue an order regarding the 21-day spacing if it so chooses.

Pre-Filing Request for Proposals

Each electric utility whose rates are regulated by the Commission shall issue a request for proposals (RFP) to provide any new supply-side capacity resources needed to serve the utility's reasonably projected electric load, applicable planning reserve margin, and local clearing requirement for its customers in this state, as well as customers located in other states but served by the utility, during the initial three-year planning period to be considered in each IRP to be filed, as outlined in MCL 460.6t. The following will apply:

a) Documentation supporting the RFP process that took place shall be included with the IRP application;
b) The RFP process undertaken by the utility is subject to audit by the Staff;
c) The filing shall include evidence that the pre-filing RFP process was conducted in a manner consistent with the MPSC code of conduct, and applicable state, federal, and MPSC rules; and
d) The RFP shall allow for proposals to provide new supply-side capacity resources to partially meet the requirement, pursuant to MCL 460.6t(6).

Public Outreach Process

Participant engagement early in the development of the IRP is encouraged, to (1) educate potential participants on utility plans; (2) utilize a transparent decision making process for resource planning; (3) create opportunity to provide feedback to the utility,

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including senior executives, on its resource plan; (4) encourage robust and informed dialogue on resource decisions; and (5) reduce utility regulatory risk by building understanding and support for utility resource decisions. The utility may choose to incorporate some, or all, of the participant input in its analysis and decision-making for the IRP filing.

In the 365 days prior to the IRP filing, each electric utility shall consider hosting update workshops with interested participants. The purpose of the pre-filing workshop(s) is to ensure that participants have the opportunity to provide input and stay informed regarding 1) the assumptions, scenarios, and sensitivities, 2) the progress of the utility's IRP process, and 3) plans for the implementation of the proposed IRP. Documentation demonstrating the public outreach process undertaken by the utility shall be included with the IRP filing. Documentation may include:

a) Workshop dates and times, including times outside of the workday.
b) Evidence that notice of the workshops was provided to the public.
c) Meeting minutes.
d) Meeting or workshop attendance lists
e) Participant comments on the last approved IRP and/or inputs into the proposed IRP application.
f) Discussion indicating if or how the public outreach process influenced the IRP.

If the utility chooses to hold pre-filing workshops, the utility shall prepare a public outreach report to document the outcomes of any pre-filing workshops, and shall file the report with the IRP filing.

Risk Assessment Methodology

Each utility`s IRP filing shall include a thorough risk analysis of the preferred plan and the alternatives considered in the IRP. The IRP shall include a discussion of the methodology used for risk analysis including the utility's justification for the chosen methodology over other alternatives. Acceptable forms of risk analysis include, but are

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not limited to the following: Scenario analysis, Global sensitivity analysis, Stochastic optimization, Generating near-optimal solutions, Agent-based Stochastic optimization, Mean-variance portfolio analysis, and Monte Carlo simulation.

Confidential Information

Transparency and the use of data that can be shared with the Commission, Staff, and intervenors is encouraged. Proprietary, confidential, and other nonpublic materials used in the development of the forecasts, scenarios, or other aspects of the IRP shall be presented in such a way that the proprietary and confidential nature of the materials is preserved. The use of publicly available data and materials is encouraged in lieu of proprietary and confidential materials, and claims that information is proprietary or confidential should be justified by the utility.

Inclusion of specific materials in the IRP filing may be contingent upon appropriate confidentiality agreements and protective orders. Proprietary, confidential, and other nonpublic materials filed as part of the IRP shall be clearly designated by the utility as confidential.

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Approval of Costs

For the Commission to specify the costs to be approved for the construction of or significant investment in supply or demand-side facilities, or contractual agreements, excluding short-term market capacity purchases to meet State Reliability Mechanism capacity requirements, in accordance with MCL 460.6t(11)-(12), the following information, data, and documents shall be provided:

l) For specific supply-side resources (inclusive of storage technologies such as battery storage) of less than 225 MW (this threshold shall be applied to the nameplate capacity of a project, not individual generators, storage facilities, etc.), that are planned to go into service within three years following the

approval of the IRP, the following evidence (covering the lifespan of the project) shall be provided:

a) A description of the plant size, type, and summary engineering/design specifications. The description shall also include the following:
    i. Description of fuel use, both primary and back-up, and provisions for transporting and storing fuel;
    ii. Projected annual costs, in accordance with the breakdown specified in the Federal Energy Regulatory Commission Uniform System of Accounts; and
    iii. Annual depreciation on the capital investment.
b) Projected annual return and income taxes on capital investment;
c) The operation and maintenance (O&M) costs over the life of the facility described as costs which are variable, in current dollars per kWh, with expenses for fuel and non-fuel items indicated separately; and costs which are fixed, in current dollars per kW;
d) Projected property taxes;
e) The rates of escalation of cost, including:
    a) Capital costs;
    b) O&M costs which are variable and related to fuel;
    c) O&M costs which are variable and unrelated to fuel; and
    d) O&M costs which are fixed.
f) The total annual average cost per kWh at projected loads in current dollars for each year of the plan for the proposed facility;
g) Equivalent availability factors, including both scheduled and forced outage rates;
h) Capacity factors for each year in the planning period;
i) Operation cycle (i.e., baseload, intermediate, or peaking), identifying expected hours per year of operation, number of starts per year, and cycling conditions for each year in the planning period;
j) Heat rates (efficiency) for various levels of operation;

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k) Unit lifetime, both for accounting book purposes and engineering design purposes, with explanations of differences;
l) Lead time, separately identifying the estimated time required for engineering, permitting and licensing, design, construction and pre-commercial operation date testing;
m) Potential socioeconomic impacts, such as employment, for the local region of the proposed supply-side resource, construction of or significant investment in an electric generation facility, or the purchase of an existing electric generation facility;

II) Renewable Resources: Revenue requirement and incremental costs of compliance shall be calculated to include the following:
a) Capital, operating and maintenance costs for renewable energy systems (including property taxes and insurance for renewable energy systems);
b) Financing costs;
c) Costs that are not otherwise recoverable in base rates including interconnection and substation costs;
d) Ancillary service costs;
e) Cost of purchased renewable energy credits (RECs) other than those purchased for non-compliance;
f) Cost of contracts;
g) Expenses incurred as a result of governmental action including changes in tax or other laws;
h) Subtract revenues (i.e., transfer price, environmental attributes, interest on regulatory liability, etc.) through 2029;
i) Recovery to include the authorized rate of return on equity, which will remain fixed at the rate of return and debt to equity ratio that was in effect in base rates when the renewable plan was approved (only through 2029).

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j) Provide the following information in relation to renewable resource cost recovery:

i. Forecast through the end of the renewable plan period of the non-volumetric surcharge; and

Forecast through the end of the renewable plan period of the regulatory liability balance.

III) Demand Response and Energy Waste Reduction: The utility shall provide the following information in relation to demand response programs, energy waste reduction programs, and distributed generation programs cost approval and recovery. For each individual program or group of programs, provide:

a) Total annual cost including:

i. Annual O&M cost for each individual portfolio of energy waste reduction, demand response, and distributed generation programs;

ii. Annual capital cost for each individual portfolio of energy waste reduction, demand response, and distributed generation programs; and

iii. Expected cost-sharing or financial incentive granted to the utility by the Commission.

b) Total demand reduction potential (MW), including hourly shape of load reduction (MWh) by program if applicable;

c) Maximum single event demand reduction;

d) Total resource capacity (MW) and type (load modifying resource, emergency demand response, etc.) reported to the applicable RTO/ISO;

e) Total energy reduction achieved (MWh);

f) Description of program, including customer enrollment, technology used, and marketing plan.

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Waivers and Process for Smaller and Multistate Utilities

Electric utilities with fewer than 1,000,000 customers in this state may request a waiver to any portion of these IRP filing requirements with its IRP application. Any request for a waiver shall include a discussion and justification outlining why the waiver is warranted and in the best interest of its customers. Discussion and justification for the requested waiver shall include a description of the utility's current and forecasted energy and capacity needs, and its plan for meeting those needs over the upcoming ten years.

Electric utilities with fewer than 1,000,000 customers in this state may request approval from the Commission to file an IRP jointly with other smaller utilities. Commission approval is required prior to filing a joint IRP.

A non-multistate Michigan electric utility serving fewer than 1,000,000 customers may elect to file an IRP based on its specific circumstances, that deviates from these requirements, subject to Staff's ability to request supplemental information. The filing shall include an explanation of why the deviations are reasonable under its circumstances. The Commission shall review any such filings under the traditional "just and reasonable" standard.

Staff notes that Northern States Power-Wisconsin and Indiana Michigan Power Company are utilities located in Michigan that already file multistate IRPs in other jurisdictions. Due to the provisions in MCL 460.6t(4) regarding multistate IRPs, either Northern States Power-Wisconsin or Indiana Michigan Power Company may utilize the IRP filing requirements of another state in accordance with those provisions.

IRP Report and Documentation

The utility's IRP filings shall demonstrate compliance with MCL 460.6t and include the following items:

a) Letter of transmittal expressing commitment to the approved preferred resource plan and resource acquisition strategy and signed by an officer of

the utility having the authority to commit the utility to the resource acquisition strategy, acknowledging that the utility reserves the right to make changes to its resource acquisition strategies as appropriate due to changing circumstances;

b) Technical volume(s) that fully describe and document the utility's analysis and decisions in selecting its preferred resource plan and resource acquisition strategy;
c) The data and information requested in the MPSC's IRP Filing Requirements included herein; and
d) Any other information deemed relevant by the utility.

The utility's IRP filings shall include an IRP document(s) that fully describes and documents the utility's analysis and decisions in selecting its preferred resource plan and resource acquisition strategy. To facilitate a similar format for each utility's application, utilities are encouraged to align its report with this provided outline and include at least the following items:

I) Executive Summary:

An IRP shall include an executive summary, suitable for distribution to the public. The executive summary shall be an informative non-technical description of the preferred resource plan and resource acquisition strategy. The executive summary shall summarize the contents of the IRP document and shall include the following:

a) An overview of the planning period examined in the IRP analysis and application;
b) A brief introduction describing the utility, its existing facilities, existing purchase power arrangements, existing demand-side programs, existing demand-side rates, and the goal to be achieved by its proposed course of action and implementation strategy;

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II) Table of Contents:

Shall be provided.

III) Table of Figures:

Shall be provided.

IV) Introduction:

The utility shall describe resource plans to satisfy at least the objectives and priorities identified in MCL 460.6t. The utility may identify and/or describe additional planning objectives that the resource plan will be designed to meet. The utility shall describe and document its additional planning objectives and its guiding principles to design alternative resource plans that satisfy all of the planning objectives and priorities.

a) General description of the utility's existing energy system, including:
    i. Net present value of utility revenue requirements,[3] with and without any financial performance incentives for demand-side resources;
    ii. Revenue requirement of existing generation and power purchase agreements;
    iii. Summary of existing generation and power purchase agreements by fuel type;
    iv. Utility's existing capacity resource mix;
    v. Utility's service territory and breakdown of customers class composition;
    vi. Annual levelized cost of existing generation portfolio; and
    vii. Description of planning period analyzed.
b) Statement of power need;

[3] The assumed discount rate shall be included along with a justification for the assumed discount rate. Results should be presented in nominal dollars.

c) Identify and explain the basis for the forecasted price of energy, capacity, and fuels, and of peak demand and energy requirements, for each year of the analysis used in each scenario and sensitivity evaluated by the utility as part of the IRP process;
d) Market and regulatory environment influencing resource planning decisions;
    i. Regional transmission organization (RTO) market and state regulation structure if a multi-state utility;
    ii. Potential Changes to RTO Capacity Market;
    iii. Electric Customer Choice;
    iv. Transmission Expansion;
    v. Environmental;
    vi. Renewable Portfolio Standards;
    vii. Other
e) IRP planning process;
f) Stakeholder Report.

V) Analytical Approach:

a) Describe the modeling process, including the duration of the study.
b) Describe and provide a justification for the risk analysis approach adopted from the Risk Assessment Methodology section:
    i. The utility shall describe and document its quantification of the risk that affects the evaluation of the various preferred resource plan options, measured in the net present value of utility revenue requirements. The utility shall provide a tabulation of the key quantitative results of that analysis and a discussion of how those findings affected its decision on a resource plan.

c) The utility shall describe and document the identification of risk variables and/or combinations of risk variables selected; their ranges, probabilities, ranking, and/or weighting that defines the risk quantification which the various preferred resource plan options were judged. Also describing how these risk

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variables were judged to be appropriate and explain how these were determined. Describe the modeling tools and data sources employed during the capacity expansion, and other modeling processes.

VI) IRP Scenarios and Sensitivities:

a) Include a detailed description of all scenarios and sensitivities.
b) In addition to each electric utility's own scenarios and assumptions, the inclusion of the scenarios and sensitives established modeling scenarios and assumptions in accordance with Commission Order in U-18148, or subsequent Commission Orders related to IRP modeling parameters and requirements.

VII) Existing Supply-Side (Generation) Resources:

Detailed account of projected energy and capacity purchased or produced by the electric utility's owned and contracted resources, including cogeneration resources. Include data regarding the utility's current generation portfolio, including the age, capacity factor, licensing status, and remaining estimated time of operation for each facility in the portfolio.

a) Overview
b) Fossil-Fueled Generating Units
c) Nuclear Generating Units
d) Hydroelectric Generating Units
e) Renewable Generating Units
f) Energy Storage Facilities
g) Power Purchase Agreements: energy and capacity purchased or produced by the electric utility from a contracted resource, including any cogeneration resource
h) RTO Capacity Credits and Modeling of Existing Units (such as capacity factor, heat rate, outage rate, in service and retirement dates, operating costs, etc.)
i) Spot Market Purchases and Off-System Sales

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VIII) Demand-Side Resources:

Historical and projected load management and demand response programs for the electric utility in terms of megawatts and MISO Zonal Resource Credits (ZRCs) and the projected costs for those programs.

a) Provide data on projected enrolled capacity and demand response events for each program. The following items are to be included:
    i. Description of current demand response and load management programs by customer class for the previous five years, and for the IRP study horizon, including hourly shape of load reductions by each program;
    ii. In the event that energy was purchased in the market as an alternative to demand response and load management programs in the previous five years, describe the utility's method for determining whether to purchase energy rather than relying on demand response. Also supply data corresponding to demand response substituted by market purchases (such as hour of the year, MW, $/MW, program, rate class, and ZRCs);
    iii. A description of any other programs the utility is considering that could potentially expand demand response resources.

IX) Renewables and RPS Goals:

Projected energy purchased or produced by the electric utility from a renewable energy resource.

a) Describe how the electric provider will meet existing renewable energy standards. If the level of renewable energy purchased or produced is projected to drop over the planning periods, the electric utility must demonstrate why the reduction is in the best interest of ratepayers.

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b) Specify whether the number of megawatt hours of electricity used in the calculation of the renewable energy credit portfolio will be the previous twelve-month period of weather-normalized retail sales or based on the average number of megawatt hours of electricity sold by the electric provider annually during the previous three years to retail customers in this state.
c) Include the expected incremental cost of compliance with existing renewable energy standards for the required compliance period.
d) A description of how the electric provider's plan is consistent with the renewable energy goals required by the Michigan Legislature (e.g. 35% combined renewable energy and energy waste reduction goal by 2025)

e) Describe the options for customer-initiated renewable energy that will be offered by the electric provider and forecast sales of customer-initiated renewable energy.
f) Describe how the electric provider will meet the demand for customer-initiated renewable energy.

The following non-exhaustive list suggests several elements that may be included:

a) Sales forecast through 2021 for compliance with the renewable energy standard through 2025 toward meeting the 35% goal, and through the study period.
d) Detailed Resource Plan
    i. Describe the utility's planned renewable energy credit portfolio. Forecast RECs obtained via Michigan incentive RECs.
    ii. Forecast expected compliance levels by year to meet the renewable portfolio targets.
    iii. Identify key assumptions used in developing these forecasts and the proposed resource portfolio.
    viii. Identify risks which may drive performance to vary.

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X) Peak Demand and Energy Forecasts:

A long-term forecast of the electric utility's sales and peak demand under various reasonable scenarios. Include details regarding the utility's plan to eliminate energy waste, including the total amount of energy waste reduction expected to be achieved annually, and the cost of the plan.

a) A forecast of the utility's peak demand and details regarding the amount of peak demand reduction the utility expects to achieve and the actions the utility proposes to take in order to achieve that peak demand reduction.
b) Subsections:
    i. Key variables used to develop forecast
    ii. Long-term forecasting methodology
    iii. Forecasting uncertainty and risks
    iv. Historical growth in electric sales for the previous five years, including a record of its previous load forecasts (can be supplied in work papers)
    v. Business as usual deliveries and demand forecast
    vi. Alternative forecast scenarios and sensitivities in accordance with the Commission's final order in Case No. U-18418, or subsequent Commission orders relating to IRP modeling parameters and requirements.

XI) Capacity and Reliability Requirements:

The utility shall indicate how it complies, and will comply, with all applicable state, federal, ISO, RTO capacity and reliability regulations, laws, rules and requirements, (such as planning reserve margins, system reliability and ancillary service requirements) including the projected costs/revenues of complying with those regulations, laws, and rules.

a) Planning Reserve Margin Requirements
b) System Reliability Requirements
c) Ancillary Services Requirements

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The utility shall include data regarding the utility's current generation portfolio, including the age, capacity factor, licensing status, and remaining estimated time of operation for each facility in the portfolio.

XII) Transmission Analysis:

In accordance with MCL 460.6t(5)(h), the utility shall include an analysis of potential new or upgraded electric transmission options for the electric utility. The utility's analysis shall include the following information:

a) The utility shall assess the need to construct new, or modify existing transmission facilities to interconnect any new generation and shall reflect the estimated costs of those transmission facilities in the analyses of the resource options.
b) A detailed description of the utility's efforts to engage local transmission owners in the utility's IRP process in effort to inform the IRP process and assumptions, including a summary of meetings that have taken place.
c) Current transmission system import and export limits as most recently documented by the RTO and any local area constraints or congestion concerns.
d) Any information provided by the transmission owner(s) indicating the anticipated effects of fleet changes proposed in the IRP on the transmission system, including both generation retirements and new generation, subject to confidentiality provisions.
e) Any information provided by the transmission owner(s), including cost and timing, indicating potential transmission options that could impact the utility's IRP by: 1) increasing import or export capability; 2) facilitating power purchase agreements or sales of energy and capacity both within or outside the planning zone or from neighboring RTOs; 3) transmission upgrades resulting in increasing system efficiency and reducing line loss allowing for greater energy delivery and reduced capacity need; and 4) advanced

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transmission and distribution network technologies affecting supply-side resources or demand-side resources.

XIII) Fuel

The utility shall include the following:

a) Overview;
b) Natural gas price forecasts under the various scenarios;
c) Oil price forecasts under the various scenarios;
d) Coal price forecasts under the various scenarios;
e) Delivered natural gas prices to existing and new utility owned generating plants;
f) Delivered oil prices to existing and new utility owned generating plants;
g) Delivered coal prices to existing and new utility owned generating plants;
h) Projected annual fuel costs under the various scenarios; and
i) The projected long-term firm gas transportation contracts or natural gas storage the electric utility will hold to provide an adequate supply of natural gas to any new and existing generation facility.

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XIV) Resource Screen:

Describe the utility's options of resources, including combinations of resources, to serve future electric load such as utilizing existing and planned generation resources, build a new facility, purchasing capacity from the market on a short-term basis, and purchasing capacity through a power purchase agreement. The following sections shall discuss each option in detail and options shall be considered in combination to serve future electric load. As described below, work papers with information on the costs of each resource option and combination of resource options shall be provided with the utility's filing.

a) Existing and Planned Generation
b) New Build

i. New generation technology and operating assumptions
ii. New generation development costs
iii. New energy integration of storage technology and operating assumptions
iv. New energy storage development costs

c) Distributed Generation
i. Solar Photovoltaic (including solar plus storage)
ii. Biogas
iii. Energy Storage
iv. Other Distributed Generation

d) Market Capacity Purchases
i. Regional Market Supply Outlook
ii. Availability of Market Capacity
iii. Market Capacity Price Assumptions

e) Long-Term Power Purchase Agreements

f) Transmission Resources
i. Overview
ii. Existing Import and Export Capability
iii. Transmission Network Upgrade Assumptions for IRP
iv. Import and Export Impact on Resource Strategy.

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XV) Modeling Results:

An analysis of the capital costs, energy production, energy production costs, fuel costs, energy served, capacity factor, emissions (levels and costs), and viability of all reasonable options available to meet projected energy and capacity needs, including, but not limited to, existing electric generation facilities in this state. The following suggest several elements that address the specific items to be included. They are not necessarily exhaustive.

a) Description of IRP portfolio design strategy (portfolio optimized for least cost, value maximization, reliability, risk minimization, environmental specification etc., or a particular combination);
b) Scenario and sensitivity results, including, revenue requirement and financial impacts (NPV), portfolio capacity including additions and retirements. Include monthly and annual energy pricing, and resource capacity and load factors;
c) Business as usual/reference case portfolios options to be selected from;
d) Analysis of IRP results;
e) Risk assessment of each scenario.

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XVI) Proposed Course Of Action:

Include a detailed description of:

a) The type of generation technology proposed for a generation facility contained in the plan and the proposed capacity of the generation facility, including projected fuel costs under various reasonable scenarios;
b) Plans for meeting current and future capacity needs with the cost estimates for all proposed construction and major investments, including any transmission or distribution infrastructure that would be required to support the proposed construction or investment, and power purchase agreements;
c) The projected long-term firm gas transportation contracts or natural gas storage the electric utility will hold to provide an adequate supply of natural gas to any new generation facility; and
d) How the filing utility will meet local, state, and federal laws, rules, and regulations under the proposed course of action.

The utility shall describe the process used to select the preferred resource plan, including the planning principles used by the utility to judge the appropriate tradeoffs between competing planning objectives and between expected performance and risk. The utility shall describe how its preferred resource plan satisfies the following:

a) Strike an appropriate balance between the various planning objectives specified;
b) Utilize renewable and demand-side resources to comply with existing laws and goals and, in the judgment of the utility, are consistent with the public interest and achieve state energy policies; and
c) In the judgment of the utility, the preferred plan, in conjunction with the deployment of demand response measures, has sufficient resources to serve load forecasted for the implementation period.

The utility shall develop an implementation plan that specifies the major tasks, schedules, and milestones necessary to implement the preferred resource plan over the implementation period. The utility shall describe and document its implementation plan, which shall contain:

a) A schedule to report the status of an approved plan in accordance with MCL 460.6t(14);
b) A schedule and description of actions to implement ongoing and planned demand-side programs and demand-side rates;
c) A schedule and description of relevant supply-side resource research, engineering, retirement, acquisition, and construction;
d) A net present value revenue requirement comparison of its proposal and reasonable alternatives over the planning period utilized in the analysis. It shall also include the calculation and comparison of the net present value revenue requirement of the utility's proposed plan and alternative resource plans including the alternative resource plans resulting from the Commission-approved modeling scenarios. In addition, the utility shall provide support for its chosen discount rate and discuss how the results of its analysis would change with different discount rate assumptions.

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XVII) Rate Impact and Financial Information:

Projected year on year impact of the proposed course of action (and other feasible options) for the periods covered by the plan, covering the following accounts:

a) Revenue requirement;
b) Rate base;
c) Plant-in-service capital accounts;
d) Non-fuel, fixed operations and maintenance accounts;
e) Non-fuel, variable operations and maintenance accounts;
f) Fuel accounts;
g) Emissions cost;
h) Effluent additive costs;
i) Non-reoccurring expedited capital expenditures;
j) Projected change in generation plant-in-service;

The utility shall describe the financial assumptions and models used in the plan. The plan shall include, at a minimum, the following financial information, together with supporting documentation and justification:

a) The general rate of inflation;
b) The AFUDC rates used in the plan;
c) The cost of capital rates used in the plan (debt, equity, and weighted) and the assumed capital structure;
d) The discount rates used in the calculations to determine present worth;
e) The tax rates used in the plan;
f) Net present value of revenue requirements for the plan;
g) Nominal revenue requirements by year;
h) Average system rates per kWh by year; and

XVIII) Environmental:

Describe how the utility's proposed IRP will comply with all applicable local, state and federal environmental regulations, laws, and rules.

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a) Include a list of all applicable environmental regulations that are applicable to the utility fleet. Identify which regulations apply to which resources.
b) Include all capital costs for compliance with new and reasonably expected environmental regulations for existing fleet assets in the utility IRP.
c) Provide an annual projection of the following emissions for the first five years of the IRP study period differentiating between existing and new resources within the proposed IRP:
    i. Tons of sulfur oxides;
    ii. Tons of oxides of nitrogen
    iii. Tons of carbon dioxide;
    iv. Tons of particulate matter;
    v. Pounds of mercury

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XIX) Exhibits and Work Papers:

The filing shall include exhibits and work papers as outlined below, subject to any license or other confidentiality restrictions that are unable to be resolved by issuance of a protective order.

a) Any work papers used in developing the application, supporting testimony, and IRP. Such work papers shall, when possible, be provided in electronic format with formulas intact.
b) Any modeling input and output files used in developing the application, supporting testimony, and IRP. Such modeling input and output files shall, when possible, be provided in electronic format with formulas intact. The utility shall also identify each modeling program used, and provide information for how interested parties can obtain access to such modeling program.
c) Cost data and estimates that were used in the resource screening process to evaluate each electric resource that was considered either individually or in

combination with other resources, including renewable alternatives, such as solar, wind, or solar plus battery storage.

d) A description, including estimated costs, of each alternative proposal received by the utility.

e) A discussion of any differences between its short term capacity price curve in the filing and the short term capacity price curve in its last Power Supply Cost Recovery proceeding.

f) A description of the impact of the utility's proposal on rates in its service territory, using the rate design most recently approved for the utility by the Commission.

g) Identification and justification of the forecasted price of energy, capacity, and fuels, and of peak demand and energy requirements used in the IRP. The utility shall identify its base case forecasts and a range of sensitivities for each such factor, and explain how those sensitivities were identified. If the base case forecast(s) differs from recent previous forecasts submitted by the utility to the Commission in other cases, the utility shall provide an explanation for such differences.

h) In developing its IRP, a utility shall present an environmental compliance strategy which demonstrates how the utility will comply with all applicable federal and state environmental regulations, laws and rules. Included with this information, the utility shall analyze the cost of compliance on its existing generation fleet going forward, including existing projects being undertaken on the utilities generation fleet, and present this information within the IRP application to the Commission.

i) Estimated annual emissions of carbon dioxide and greenhouse gases, particulates, sulfur dioxides, oxides of nitrogen, and mercury per year and over the life of the facilities included in their IRP.

j) A comparison of total projected carbon emissions under each scenario and sensitivity analyzed, including quantifying the carbon emissions projected in each sensitivity as a percentage of the carbon emissions presented in the business as usual case.

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k) The assumed retirement dates of the facilities included in the IRP, with justification provided for the assumed retirement dates
l) An analysis that contains an individualized cost estimate for electric resources that were considered, including renewable alternatives, such as solar, wind, or solar plus battery storage, and such cost estimates for all alternative proposals, solicited or unsolicited, received by the utility.
m) Electricity market forecasts utilized.
n) Other documents and data underlying the IRP analysis.

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Exhibit B
Michigan Public Service Commission 2016 PA 341

Filing Requirements and Instructions for Certificate of Necessity Alternative Proposals for Electric Generation Capacity Resources

Application Instructions for Alternative Proposals

These filing instructions apply to any supplier of electric generation capacity seeking to provide electric generation capacity resources to a utility submitting a certificate of necessity application under the provisions of MCL 460.6s. The proposal shall be consistent with these instructions, MCL 460.6s(13), and MCL 460.6t(6), with each item labeled as set forth below. Any additional information considered relevant by the applicant may also be included in the application.

Filing Announcement

A 30-day notice shall be filed in the docket which the utility filed an initial application. The alternative proposal notice shall be filed at least 30 days prior to filing a detailed alternative proposal that meets the requirements of this document. The notice shall include a description of the proposal and proof of service to all parties in the case.

Intervention Status

Any supplier of electric generation capacity that intends to file an alternate proposal must request and be granted intervention in the contested case for which the utility has filed its integrated resource plan and/or certificate of necessity application, pursuant to MCL 460.6s(13) and MCL 460.6t(6).

Filing the Alternative Proposal

Any supplier of electric generation capacity that intends to file an alternative proposal must file the proposal in the contested case and the proposal shall be sponsored by a

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witness for the applicant who will be subject to appropriate discovery and cross examination. All alternative proposals shall be filled within 90 days of the date the application was filed by the utility initiating the contested case for either a certificate of necessity, an integrated resource plan, or a contested case containing both.

Alternative Proposal Information

All proposals shall contain the following information about the supplier providing the proposal:

a) A description of the developer/supplier qualifications including a description of the developer/supplier experience in constructing or operating similar facilities.
b) A description of financial standing and credit worthiness.
c) The name, title, and business address of a person to whom correspondence should be directed.
d) An estimate of capital and operational costs associated with the alternative proposal.

Confidential Information

Proprietary, confidential, and other nonpublic materials filed as part of the application shall be clearly identified and marked accordingly and presented in such a way that the proprietary and confidential nature of the materials is preserved pending the execution of any confidentiality agreements and issuance of protective orders. Availability of specific materials in the application may be contingent upon appropriate confidentiality agreements and protective orders.

Detailed Cost Information

The entity filing the alternative proposal shall not be required to disclose detailed cost information provided in response to requests for quotes from potential project

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contractors any sooner than 120 days after the filing of the utility application and then only after appropriate protective orders and non-disclosure certificates/agreements have been executed.

The entity filing the alternative proposal may provide a cost update on or before 150 days from the date the utility application was filed.

Contents of the Alternative Proposal

A utility seeking to construct a new electric generation facility or to make a significant investment in an existing facility or enter into a power purchase agreement shall include the following information:

I) New or Existing Electric Generation Facility (excluding a Power Purchase Agreement):
   a) If applicable, a written description of the proposed or existing site, including identification of the municipality in which the facility will be constructed and the current use of that site;
   b) If applicable, the age of the existing facility or facilities to be purchased or modified;
   c) Expected generating technology and major systems (including major pollution control systems);
   d) Expected nameplate capacity, availability, heat rates, expected life, and other significant operational characteristics;
   e) Fuel type and sources, including the identification and justification of fuel price forecasts used over the study period;
   f) The expected annual emissions of carbon dioxide and greenhouse gases, particulates, sulfur dioxides, volatile organic compounds, oxides of nitrogen, mercury, and other hazardous air pollutants over the life of the facility or contract, and an assessment of whether some or all anticipated emissions and any anticipated health impacts could be eliminated or reduced through the use of feasible and prudent alternatives.

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g) Discussion of the rationale behind facility or investment technology, fuel, capacity, and other significant design characteristics;
h) A description of all major state, federal, and local permits required to construct and operate the proposed generation facility or the proposed facility upgrades in compliance with state and federal environmental standards, laws, and rules;
i) If applicable, the status of any transmission interconnection study and identification of any expected or required transmission system modifications;
j) If applicable, natural gas infrastructure required for plant construction and operation not located on the proposed site but required for plant construction and operation;
k) If applicable, a description of modifications to existing road, rail, or waterway transportation facilities not located on the proposed site but required for plant construction and operation;
l) If applicable, water and sewer infrastructure required for construction and operation not located on the proposed site but required for plant construction and operation;
m) A basic schedule for development and construction, which include an estimated time between the start of construction, major milestones, and commercial operation of the facility or facility upgrades;
n) An estimate of the proportion of the construction workforce that will be composed of residents of the state of Michigan;
o) For new construction and investment in an existing facility, the proposal shall include the expected typical annual costs associated with operating the facility including fuel, operations and maintenance, and environmental compliance;
p) Describe the effect of the proposed project on wholesale market competition;
q) Any work papers used in developing the proposal~~;~~ such work papers shall, whenever possible, be provided in electronic format with formulas intact;
r) Any modeling input or output files used in developing the proposal; such

modeling input and output files shall, whenever possible, be provided in electronic format with formulas intact. The applicant shall also identify each modeling program used, and provide information for how interested parties can obtain access to such modeling program;

s) Any other information that the applicant considers relevant.

II) Purchase of Existing Facility:

a) As applicable, the estimated costs associated with purchasing the existing facility assets including the price to be paid for the assets, acquisition and transition costs, financing costs, and any significant financial liabilities that will accompany the asset transfer; and

b) The expected typical annual costs associated with operating the generation facility including fuel, operations and maintenance, and environmental compliance.

III) Power Purchase Agreement:

a) If applicable, a written description of generation facilities covered by the power purchase agreement, the size of each facility, generator technology, expected nameplate capacity, availability, heat rates, expected life, fuel type, other significant operational characteristics and the location of the generation facilities, including identification of the municipalities in which the facilities are located;

b) The name and address of the power provider supplying contract products and services under the power purchase agreement;

c) The date the resources covered by the power purchase agreement will be available, the proposed term of the power purchase agreement, and a description of significant contract provisions that could result in early termination of the contract;

d) The proposed price to be paid for capacity and energy contract products and services delivered under the power purchase agreement;

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e) If the contract includes provisions which may result in an increase in cost due to the price of fuel, the fuel type and sources, including the identification and justification of fuel price forecasts used over the study period;

f) The annual expected emissions of carbon dioxide and greenhouse gases, particulates, sulfur dioxides, volatile organic compounds, oxides of nitrogen, mercury, and other hazardous air pollutants over the life of the facility or contract and a demonstration that regulated emissions from the facility will comply with applicable federal, state, and air quality regulations;

g) Any work papers used in developing the proposal. Such work papers shall, whenever possible, be provided in electronic format with formulas intact;

h) If available, any modeling input or output files used in developing the proposal. Such modeling input and output files shall, whenever possible, be provided in electronic format with formulas intact. The applicant shall also identify each modeling program used, and provide information for how interested parties can obtain access to such modeling program;

i) A copy of the proposed power purchase agreement. Including an estimate of the capacity and energy payments to be made for contract products and services pursuant to the agreement. The estimated payments shall be presented on a yearly basis in nominal dollars over the primary term of the contract.

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P R O O F O F S E R V I C E

STATE OF MICHIGAN)

Case No. U-18461

County of Ingham)

Lisa Felice being duly sworn, deposes and says that on October 11, 2017 A.D. she electronically notified the attached list of this **Commission Order via e-mail transmission**, to the persons as shown on the attached service list (Listserv Distribution List).

Lisa Felice

_____

Lisa Felice

Subscribed and sworn to before me
this 11th day of October 2017

Steven J. Cook

_____

Steven J. Cook
Notary Public, Ingham County, Michigan
As acting in Eaton County
My Commission Expires: April 30, 2018

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