**MEMORANDUM**

TO: Commissioners, Kate, Eric, Bob D., Justin, Jason

FROM: Rate Design Team (Will, Neil, Mike)

DATE: January 31, 2014

RE: Docket D2013.12.85, Section 69-8-421 adequacy determination

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## Purpose

On December 20, 2013, NorthWestern filed an *Application for Approval to Purchase and Operate PPL Montana's Hydroelectric Facilities* (Application). Section 69-8-421(2), MCA requires the Commission to determine, within 45 days, "whether or not the application is adequate and in compliance with the Commission's minimum filing requirements. If the Commission determines that the application is inadequate, it shall explain the deficiencies." This memorandum provides Rate Design Bureau staff's recommendation regarding the adequacy of NorthWestern's Application with respect to portfolio modeling.

## Background

Montana's preapproval process relies heavily on a utility's resource planning process. Section 69-8-419, MCA requires a Commission decision preapproving NorthWestern's proposed hydro purchase to find that the purchase is consistent with statutory resource planning objectives, which, in turn, requires finding that NorthWestern's planning process evaluated the full range of cost-effective supply options.[1] In addition, the Commission's minimum filing requirements require NorthWestern's Application to include testimony and supporting work papers demonstrating that the hydro purchase is consistent with § 69-8-419, MCA and the Company's most recent resource plan.[2]

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[1] 69-8-419(2)(b), MCA.
[2] ARM 38.5.8228(2)(c).

NorthWestern's most recent resource plan, the 2011 plan, identified six preferred resource portfolios consisting of a mix of natural gas-fired combined cycle and simple cycle turbines and additional renewable generation, including wind. The 2011 plan concluded that NWE needed to perform substantial analysis before deciding which type of gas-fired generation technology to acquire and when to acquire it.[3] NWE reinforced that conclusion during the 2013 planning process when it informed its advisory committee in June and August, 2013 that it intended to evaluate five different gas-fired generation technologies through PowerSimm portfolio modeling in order to determine which technology or mix of technologies would be best.[4] In contrast to its stated intent, however, NorthWestern's Application and 2013 resource plan focus solely on a combined cycle gas turbine with a 2018 online date as the best gas resource alternative to compare to the cost of purchasing the PPL hydro facilities.

On January 2, 2014, the Commission sent a number of data requests to NorthWestern regarding the Application. Data request PSC-047 asked NorthWestern to provide PowerSimm model results for several additional resource portfolios that relied on alternative gas-fired generation technologies, which NorthWestern had planned to model in the Summer of 2013.

On January 6, 2014, NorthWestern filed a *Motion for and Brief in Support of Reconsideration of Paragraph 7 of the Notice of Application and Intervention Deadline and Initial Procedural Schedule, or, in the Alternative, Motion for Extension of Time*. In pertinent part, NorthWestern contended that data request PSC-047 asked for 40 additional scenarios in the PowerSimm model and that responding would cost between $40,000 and $50,000. Commission staff subsequently offered to work with NorthWestern to reach an agreement regarding the additional PowerSimm modeling requested in data request PSC-047.

On January 8, 2014, the Commission contracted with Evergreen Economics to, among other things, assess the adequacy of NorthWestern's Application in terms of its use of the PowerSimm model to analyze long-term supply costs for an adequate set of alternative portfolio strategies. The purpose of Evergreen Economics' adequacy assessment is to assist the Commission in making the adequacy determination required in § 69-8-421, MCA.[5]

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[3] 2011 Electricity Supply Resource Procurement Plan, Vol. 1, pp. 185.
[4] 2013 Electricity Supply Resource Procurement Plan, Vol. 2, Chapter 1, pp. 181, 201, 270, 293-4
[5] Contract No. PSC14-2746V.

On January 24, 2014, Evergreen Economics provided a memorandum to the Commission containing its assessment of the adequacy of NorthWestern's application with respect to PowerSimm modeling. In addition, NorthWestern filed a response to data request PSC-047 objecting to the request, but also stating that it is working with staff to reach an agreement on the proper scope of additional PowerSimm modeling.

On January 29, 2014, NorthWestern filed a *Motion for Leave to Respond to Evergreen Economics' Memorandum* (Motion). Attached to its Motion, NorthWestern provided additional information addressing the issues raised in Evergreen Economics's memorandum and summarizing an agreement with staff to model three additional portfolios in PowerSimm and provide the results no later than February 14, 2014.

**Discussion and recommendation on adequacy regarding portfolio modeling**

Evergreen Economics' adequacy assessment determined that NorthWestern's Application falls short of providing the Commission with all of the information necessary to evaluate the Application, including information required by Commission rules. Evergreen determined that NorthWestern should: 1) better explain the basis for its carbon pricing assumption and weighted average cost of capital used to discount future costs, 2) provide the source(s) of its generating plant cost estimates, and 3) analyze a small number of additional alternative portfolios with PowerSimm or describe in detail why considering such additional portfolios need not be considered. Based on its review of the 2011 resource plan, Evergreen determined that NorthWestern should address the following generating plant types: Simple cycle combustion turbine, supercritical coal, integrated gasification combined cycle, wind, and woody biomass.

Evergreen's conclusion that NorthWestern should consider analyzing a small number of additional alternative portfolios with PowerSimm confirms staff's initial assessment that NorthWestern's Application falls short of including comparative cost information for the resource alternatives it considered, as required in ARM 38.5.8228(2)(d), and is not consistent with its most recent resource plan and the planning objectives in § 69-8-419, MCA, as required in ARM 38.5.8228(2)(c). Staff's initial assessment prompted data request PSC-047, which was submitted to NorthWestern pursuant to the Commission's December 23, 2013 *Notice of*

*Application and Intervention Deadline and Initial Procedural Schedule* in an effort to obtain sufficient additional information to avert a Commission finding of inadequacy. Data request PSC-047 sought to obtain additional PowerSimm modeling for portfolios that rely on other gas-fired generation technologies NorthWestern planned to model in its 2013 plan.

As described above, and in NorthWestern's Motion, staff worked with NorthWestern to revise the scope of data request PSC-047 with the goal of obtaining an adequate set of PowerSimm portfolio analyses without imposing unnecessary burden or expense on NorthWestern. On January 24, 2014, staff reached an agreement with NorthWestern regarding data request PSC-047. Staff agreed to withdraw its request in subpart (b), which requested modeling for various alternative carbon price assumptions. Staff determined that spreadsheet models in the prefiled testimonies of Mr. Meyer and Mr. Stimatz provide adequate tools for evaluating alternative carbon price scenarios. NorthWestern agreed to model the following three additional resource portfolios in PowerSimm and to provide the results by February 14, 2014:

1) Current resources plus a 110 MW aeroderivative simple cycle gas turbine in 2018;
2) Current resources plus a 270 MW combined cycle gas turbine in 2025 and 100 MW of new wind generation in 2025;
3) Current resources plus a 110 MW aeroderivative simple cycle gas turbine in 2025 and 100 MW of new wind generation in 2025.

These additional resource portfolios are designed to provide a set of resource portfolios that is more reflective of the set NorthWestern originally intended to analyze in the 2013 plan, based on conclusions from the 2011 plan. The additional portfolios may reveal economic trade-offs associated with acquiring higher capital cost, lower variable cost technologies, like combined cycle plants, versus lower capital cost, higher variable cost technologies, like simple cycle plants, and how the timing of new resources affects portfolio costs. According to the schedule in Procedural Order 7323b, if NorthWestern files the results of the additional PowerSimm modeling by February 14, the Commission and parties will have one week to review the results and submit discovery.

Staff believes the additional information NorthWestern filed with its Motion adequately addresses the shortcomings Evergreen Economics identified, with the exception of the additional PowerSimm modeling, which NorthWestern has committed to provide. Once PowerSimm

modeling results for the additional portfolios are provided, and so long as the PowerSimm output information NorthWestern provides for the additional portfolios is at least as comprehensive as what it provided for the portfolios it already modeled, NorthWestern will have substantially complied with the minimum filing requirements in ARM 38.5.8228(2)(c-d).[6]

During the process leading up to its agreement to purchase PPL's hydro facilities NorthWestern considered another resource that it did not explicitly evaluate in the 2011 resource plan – a purchase of PPL's coal-fired facilities, either as a stand-alone acquisition or packaged with the hydro facilities.[7] NorthWestern's Application provided various reasons for why it did not want to acquire the coal-fired facilities, but did not include testimony and supporting work papers comparing the cost of the hydro facilities to the cost of the coal-fired facilities, as required in ARM 38.5.8228(2)(d). Although such a comparison is complicated by the fact that a purchase price for the coal-fired facilities is unknown, the Application should have included whatever analysis NorthWestern prepared in connection with those facilities. However, staff does not recommend finding the Application inadequate in this regard because NorthWestern's response to data request PSC-066 provided a spreadsheet model of future cash flows for the PPL coal-fired facilities, similar to the cash flow model for the hydro facilities included in Mr. Stimatz's testimony. Staff believes the spreadsheet model provides an acceptable cost comparison to the hydro purchase and cures the deficiency in the Application. The model is relatively transparent and allows analysts to modify input assumptions and calculate alternative results. Staff is unsure whether a PowerSimm portfolio based on acquiring the PPL coal-fired facilities would provide significantly better information compared to the spreadsheet model and therefore does not recommend finding NorthWestern's Application inadequate due to the absence of PowerSimm modeling for a hypothetical purchase of PPL's coal facilities.

Technically, to comply with its adequacy determination obligations in § 69-8-421, MCA, the Commission should determine that NorthWestern's Application is not adequate. The Commission should explain that the Application is deficient because it does not include testimony and supporting work papers that: 1) adequately show that the proposed hydro facilities are consistent with NorthWestern's most recent resource plan and the planning objectives in §

[6] The scope of this memo is limited to NorthWestern's compliance with the minimum filing requirements as they pertain to portfolio modeling.
[7] Prefiled direct testimony of Brian B. Bird, pp. 6-10, John D. Hines p. 5.

69-8-419, MCA, (see ARM 38.5.8228(2)(c)) and 2) adequately demonstrate NorthWestern's estimates of the cost of the hydro facilities compared to the cost of each alternative resource it considered (see ARM 38.5.8228(2)(d)). Receipt of the additional PowerSimm portfolio analyses specified above will cure the deficiency.