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**BEFORE THE PUBLIC UTILITY COMMISSION**

**OF OREGON**

LC 29

In the Matter of the Investigation into	)	
Least-Cost Planning for Resource Acquisition by	)	ORDER
NORTHWEST NATURAL GAS COMPANY.	)	

**DISPOSITION: PLAN ACKNOWLEDGED WITH MODIFICATIONS**

On July 28, 2000, Northwest Natural Gas Company, dba NW Natural (NW Natural, NWN or the company) filed its integrated resource plan (IRP or Plan) in accordance with Public Utility Commission of Oregon (Commission) Order No. 89-507. NWN held three public hearings and four technical conferences prior to filing its plan. A summary of those activities is contained in Appendix A.

A prehearing conference was held on August 25, 2000, at which a schedule for the proceeding was adopted. The schedule established dates for initial comments on the draft resource plan and comments on the draft proposed order. NWN briefed the Commission on its integrated resource plan at a public meeting on August 8, 2000. Staff circulated a draft proposed order on September 22, 2000, recommending that the Commission acknowledge NWN's plan. Staff's final proposed order was distributed October 23, 2000. At a special public meeting on November 7, 2000, the Commission considered and adopted Staff's proposed order.

**PROVISIONS OF THE PLAN AND COMMENTS**

**NWN'S Least-Cost Plan**

NWN's least-cost plan (LCP, IRP or the Plan) for Oregon is titled, *2000 Integrated Resource Plan*. The entire document was submitted to both Oregon and Washington commissions. Included in the document is a summary of the company's planning process, its conclusions, and a multi-year action plan. Technical appendices, located in a separate volume, provide detailed supporting documentation.

NWN's IRP describes the basic components of the company's planning process: a forecast of its future market demand, assessments of demand-side and supply-side resource options, analysis and selection of resource options for meeting future needs, and identification of actions required in the next two-year period to carry out the company's resource strategy.

· *Forecast.* NWN's load forecast is based on projected economic trends for its service territory, anticipated gas prices, expected population growth patterns and estimated usage patterns of large industrial and commercial customers. These factors were integrated into the forecast using a variety of econometric and computer-based modeling tools. The company used Northwest Power Planning Council economic and demographic forecasts to produce the low, medium-low, medium, medium-high, high, and high-high gas consumption scenarios. The company believes the medium-high forecast scenario is most likely to occur. Under this scenario, firm residential customers are anticipated to grow by 2.78% per year between 2000 and 2019 while the firm commercial class is expected to grow by 1.71% per year over this period. NWN expects that the firm industrial class will experience a growth of about 1% per year in the planning period.

· *Demand-Side Resources.* NWN's IRP presents an extensive evaluation of demand-side management (DSM) options. Various studies and analyses discussed in previous IRPs have led the company to promote a number of DSM programs. However, with its emphasis on DSM programs that produce cost-effective savings, only the high-efficiency furnace program remains in the portfolio. The company will work over the next several years to improve the performance of existing and potential energy efficiency activities. To accomplish this task, NW Natural will participate with other energy efficiency agencies and begin discussions with the OPUC and Office of Energy Staff regarding accelerating the adoption of energy efficient technologies in the commercial and industrial sectors. The company's LP model identified five potential measures to explore.

· *Impact on Small Businesses.* The company's IRP also discusses how its DSM measures and programs will be provided through the private sector. The LCP states, "overall, the company's participation in DSM activities will have a positive impact on small businesses engaged in the design, sale, supply, installation, or servicing of energy conservation, energy efficiency, or other DSM measures." This appears to address the concern expressed in Section 303 of the Energy Policy Act of 1992 of the potential impact that utility integrated resource planning and DSM activities could have on small businesses.

· *Supply-Side Resources.* Traditional supply-side options available to gas utilities include storage, flowing gas supplies through interstate pipelines, and peak load shaving facilities. NWN contracts with Northwest Pipeline Corporation or NPC (a company of the Williams Companies, Inc.) for interstate pipeline transportation into the NWN service area. NWN has also negotiated transportation contracts in conjunction with commitments for firm Alberta supplies to be delivered via PG&E Gas Transmission – Northwest (PG&E GT-NW) firm transportation. NWN has long term recallable capacity arrangements with Portland General Electric (PGE), Georgia-Pacific Corporation

and Weyerhaeuser. NWN's LCP discusses the company's mix of supply resources and the linear programming (LP) model the company used to choose the optimum (least-cost) resource mix to meet its customers' needs over the planning horizon. NWN's LCP concludes its supply resources are in balance with firm demand under design day peak conditions. As a consequence of this supply and demand balance, new resources must be added each year to serve firm load growth. The LCP examines a variety of resource alternatives ranging from new interstate pipeline capacity and underground storage development with accompanying distribution system enhancements to satellite LNG and propane air systems. The LCP also identifies a list of long- and near-term distribution system improvements. Based on the Stoner network modeling results, these distribution system improvements would provide increased public safety and system reliability.

· *Least Cost Integration Strategies.* NWN's integrated resource portfolio, developed using the company's LP optimization model, indicates that development of the South Mist Pipeline Extension and its associated underground storage facilities is the least cost resource. The Mist storage development and the South Mist Pipeline Extension resource were tested in eighteen sensitivities, including scenarios positing a zero summer/winter price differential and an extremely high easement cost. The LP model also indicates there is less cost-effective residential conservation potential identified in the plan in comparison to previous plans. In addition, DSM options offer a small countervailing weight in a predominantly supply-oriented resource portfolio. The company's resource strategy implements the DSM measures it has previously proposed and budgeted. The company also participates in the open market for capacity releases of firm transportation. The company's peak day and annual forecasts include estimates of some DSM impact over the planning period. Although the company tested a healthy sample of achievable conservation potential in the LP model, the model continues to view storage resources as more cost-effective than DSM. NWN will continue to examine these modeling results, and remains committed to pursuing all cost-effective DSM.

· *Multi-Year Action Plan.* NWN's Multi-Year Action Plan describes the actions the company will take over the next several years to implement its least cost resource strategy while maintaining reliable service. NWN will focus on four primary areas to further its objective of conforming the company's operations to its integrated resource planning process: demand forecasting, supply-side resources, optimization model refinement and demand-side activities. Demand forecasting tasks include evaluating a new design heating season criterion to replace the 1978-79 heating season used in prior IRPs, improving forecasts of gas requirements for district and sub-district demand nodes, and evaluating customer price elasticity equations using the 2000-01 heating season's expected retail price increases. Supply-side activities will focus on Mist Phase IV and V development and developing storage facility options for meeting future load growth. In the area of optimization model refinement, NWN will continue development of an LP based dispatch model for the evaluation of short term gas procurement and develop a spatially-diversified nodal LP model for capacity planning. Demand-side objectives consist of collaborating with energy efficiency agencies to improve the performance of current and future energy efficiency projects, promoting energy efficient technologies in the commercial and industrial markets and re-evaluating the High-Efficiency Furnace Program.

## Comments of the Parties

**Commission Staff.** The Commission Staff developed comments on the company's draft integrated resource plan submitted in April 2000. As a result of Staff/company discussion, resolution of most of the substantive issues was reflected in the final integrated resource plan submitted in August 2000. On October 23, 2000, Staff distributed its final recommendation that the Commission acknowledge NWN's LCP if the company makes the modification discussed below:

*Commercial/Industrial DSM Programming.* NW Natural's plan includes a multi-year action plan item that addresses its goal of pursuing more cost-effective commercial and industrial DSM. Staff believes that this action plan item is inadequate without modification. Staff proposes that the action plan item include a specific timeframe for analyzing the cost-effectiveness of commercial/industrial DSM measures and evaluating with Staff whether or not these programs should be offered. This is partially due to the fact that the LP model chooses five commercial/industrial measures as resources in the first year of the company's Plan. It is also due to the fact that Staff and the company have not met regularly over the last two years to discuss DSM activities. It is not clear whether these programs would be timely initiated without the added boost of specific deadlines. After thoroughly analyzing the potential programs in the commercial/industrial sector, Staff and the company might agree that delivery of these programs is not cost-effective, and therefore not appropriate to present to the Commission for approval. Staff recommends that NW Natural submit, within 30 days of the date of the Order in this Docket, a specific plan and timeframe for analyzing and evaluating the addition of cost-effective commercial/industrial DSM programs to its resource portfolio.

In addition, the Commission should acknowledge the need for a development of Phases IV and V of the South Mist Pipeline Extension from Bacona Station to Molalla and the associated underground storage. NW Natural would still have the burden of proof to show that such resource investments were prudently incurred before the company can recover such costs through rates. The company's plan indicates that a phased development of underground storage in the Mist area is the least-cost strategy for meeting future load requirements. Moderately sized underground storage projects would be brought on line about every two years to keep pace with peak day firm load growth. NWN's analysis shows Mist area storage to be a lower cost option than reserving transmission capacity from the gas producing basins in Canada. Phased development will accommodate market area and industry uncertainty because future storage resources can be postponed if peak day firm load growth slows down or if unexpected market or industry changes occur. Staff recommends that NWN agree that accounting treatment for Mist underground storage development and associated infrastructure should follow guidelines set forth in OPUC Order 96-100, dated April 12, 1996 in Docket UI 149, and in the supporting OPUC Staff memo dated March 27, 1996.

**Oregon Office of Energy.** On September 5, 2000, the Oregon Office of Energy (OOE) filed comments on NWN's IRP. Briefly, OOE believes that the assumption of 30 consecutive years of design weather is unlikely. Furthermore, the use of design weather could overstate the net benefit from Phases IV and V and the whole South Mist Pipeline Extension and associated storage. As a consequence, OOE poses two separate questions: one, could this affect whether the Mist storage and the South Mist Pipeline Extension resource alternative remain least cost, and two, under what conditions might it change the least cost resource? In addition, the Office of Energy would like to know if NWN could estimate total revenue requirements based on weather that more closely resembles the actual weather history for the South Mist Pipeline Extension resource alternative and the next best resource alternative. Finally, OOE queries how the use of actual weather history might affect revenue requirements. NW Natural responded to these questions to the satisfaction of OOE, but Staff agrees with OOE that these questions should be addressed more thoroughly in the next least-cost plan. The analysis in this Plan demonstrated that the use of normal weather did not change the conclusion that the SMPE is the least-cost resource. Comments of the Oregon Office of Energy are included in Appendix B.

**Comments of Donald W. and Kay L. Carson.** On September 7, 2000, the Carsons filed comments on NWN's IRP. Briefly, the Carsons contend the South Mist Pipeline Extension is the wrong choice of resource to acquire. The Carsons argue that the range of demand forecasts is inadequate because NWN has not examined a persuasive range of demand forecasts. They also argue that NWN has not made a persuasive showing that NWN examined all feasible resource alternatives that can meet the forecasted demand. The Carsons also advise that new, safer feasibility studies will be required by the federal government thus requiring a delay in granting an Energy Facility Siting Council (EFSC) site certificate. Also, the Carsons believe that OAR 345-023-0040 embodies the appropriate standards to use for this IRP. Finally, the Carsons raise issues pertaining to EFSC's certification and decision-making process. Comments of Donald W. and Kay L. Carson are included in Appendix C.

**Northwest Natural Gas.** On October 4, 2000, NWN filed comments on Staff's draft recommendations that were incorporated into the final recommendations and draft proposed order. In its letter dated October 3, 2000, the company accepted the recommendations of the Commission Staff, as set forth above, saying that "Staff's recommendations identify areas of effort and solidify a common understanding of expectations for the company's next Integrated Resource Plan." In responding to the OOE's concerns, NW Natural discussed the use of design weather vs. normal weather in developing its IRP. The company understands OOE's concerns and suggested modifying its Multi-Year Action Plan to add a Task 4.4 that will revise the LP model output to include the objective value differences for the 1<sup>st</sup> and 2<sup>nd</sup> best solutions associated with using normal weather. NW Natural also responded to the initial comments of Donald and Kay Carson. The company rebutted all of the Carson's comments, claiming most to be "irrelevant to the IRP process." NWN's letter of acceptance and comments are included in Appendix D.

## **Reply Comments of the Parties**

**Reply Comments of Donald W. and Kay L. Carson.** On October 6, 2000, the Carsons filed additional comments on NWN's IRP. After raising several arguments pertaining to EFSC procedure and matters related to EFSC jurisdiction, the Carsons attest that a pipeline of 24 inches is too large, too dangerous and that designing a supply facility to meet projected public needs to the year 2030 is excessive. Comments of Donald W. and Kay L. Carson are included in Appendix E.

## OPINION

### Jurisdiction

NWN is a public utility in Oregon, as defined by ORS 757.005, which provides natural gas service to or for the public.

On April 20, 1989, pursuant to its authority under ORS 756.515, the Commission issued Order No. 89-507 in Docket UM 180 adopting least-cost planning for all energy utilities in Oregon.

### Requirements for Least-Cost Planning under Order No. 89-507

Order No. 89-507 establishes procedural and substantive requirements for least-cost planning and requires the Commission's acknowledgment of plans that meet the requirements of the order.

**Procedural requirements.** At a minimum, the least-cost planning process must involve the Commission and public prior to making resource decisions rather than after the fact. *See* Order No. 89-507 at 3.

NWN sought public input during the planning process by informing customers and potentially affected landowners about its planning process and by conducting public hearings, public meetings and technical conferences on the plan. The company's technical advisory group, consisting of representatives from other utilities, regulatory agencies and other interested parties, provided input on planning assumptions, energy resource options and future scenarios that influence both the demand and supply of energy. The company distributed a draft plan and conducted public meetings prior to developing and submitting the final plan to the Commission. In addition, the company distributed approximately 25 summaries of the plan to customers who requested summaries, 40 slide presentation summaries, and over 50 copies of the full LCP. The company conducted a series of three public meetings in its service area with one taking place in Portland and the other two in the area of the South Mist Pipeline Extension. In spite of extensive notification, attendance fell below levels experienced during the 1995 plan's development. Appendix A reflects these activities.

**Substantive requirements.** The substantive requirements were also set forth in the order as follows:

1. All resources must be evaluated on a consistent and comparable basis.
2. Uncertainty must be considered.
3. The primary goal must be least cost to the utility and its ratepayers consistent with the long-run public interest.
4. The plan must be consistent with the energy policy of the state of Oregon as expressed in ORS 469.010.

Order No. 89-507 at 7.

**Evaluation of Resources.** NWN's LCP evaluates both supply- and demand-side resources consistently over time. Over 18 scenarios examining various sensitivities were presented in the final plan. Numerous linear programming model runs were completed to support the 18 scenarios for the company's plan. Each run simulated daily gas use and resource acquisitions for periods of 30 years. All resources were evaluated under the same criteria. The characteristics of alternative resources, demand- and supply-side, were varied over realistic ranges to evaluate the effects of resource selection on the cost to meet NWN's customers' energy needs. All resources were available to supply future needs in each simulation. In addition, consistent with Order No. 94-590, the company evaluated DSM options using a fully integrated optimization model that considered a wide variety of supply- and demand-side scenarios. Non-energy benefits associated with certain DSM resources, for example storm windows, were considered. Finally, the company evaluated the impact of environmental externalities by application of the environmental cost adders specified in Order No. 93-695. NWN found that environmental costs have no appreciable impact on NWN's supply-side choices, but that they do impact the level of conservation measures NWN should acquire. We conclude that NWN complied with this requirement for purposes of this plan.

**Uncertainty.** NWN's LCP planning approach addressed both uncertainty in demand and uncertainty in resource availability. The company considered uncertainty in demand by developing a range of demand forecasts. The company's customer growth scenarios were developed from the Northwest Power Planning Council population forecast for the Pacific Northwest. Other factors considered affecting the uncertainty of the company's plan results include customer price sensitivity, weather variation, the pricing and regulation of pipeline capacity expansions, pricing of alternative fuels, the rate of conversion to natural gas from other fuels, and the effects of changing industry structures and public policy.

Gas utilities face an additional element of uncertainty in resource availability that is different from the uncertainty faced by electric utilities. A gas utility's primary source of traditional supply is a flowing gas supply that is transported using interstate pipeline capacity. The availability of adequate

pipeline capacity, however, is dependent on the actions of third party pipelines, other project sponsors, and regulatory agencies. The actions of these parties represent an element of uncertainty that is difficult to quantify for planning purposes. We are satisfied that NWN's LCP is sufficiently flexible to allow the company to respond to the uncertainties identified in the planning process.

**Primary Goal of Plan Must Be Least Cost.** The objective of least-cost planning is to plan for resources that both meet the needs of the utility's customers and minimize total system costs over the long term. NWN has set forth its integrated resource plan to provide service to its customers at the least cost consistent with an appropriate reliability standard and the long-run interests of Oregon energy consumers. The linear programming model developed by the company will aid NWN in minimizing total system cost to serve its customers' energy needs over the long run. We are satisfied that NWN has met this requirement for purposes of this integrated resource plan.

**Consistency with Oregon's Energy Policy.** The Legislature mandated certain energy-related goals in ORS 469.010. These goals relate primarily to the development of sustainable energy resources. NWN's plan is consistent with these goals. The company has evaluated DSM programs for all customer classes and has included conservation resources in its resource acquisition strategy for the entire 30-year planning horizon.

### **Commission Decisions on Parties' Comments**

Staff's final comments contained two specific recommendations related to NWN's future planning process. First, Staff recommends modifying the action item addressing commercial/industrial DSM programming to include a specific timeline for reviewing, analyzing and evaluating commercial/industrial DSM measures to determine whether or not the company should offer programs to these customer classes. Second, Staff recommends that the Commission acknowledge multi-year action plan items 2.1 and 2.2 related to the development of Phase IV and V of Mist storage. NWN has agreed to the recommendations in Staff's memo. The Commission believes that the recommendations and compliance dates proposed by Staff, and agreed to by the company are reasonable. We adopt the recommendations. The Commission reviewed parties' comments and believes the comments of Don and Kay Carson reflect arguments more appropriately raised in the EFSC site certificate process. We believe that NW Natural has studied the question of appropriate pipeline size extensively and that the results of those studies correctly conclude that the proposed 24-inch pipeline is adequate, and not oversized, for the thirty-year planning period. The Commission also finds the comments of the Oregon Office of Energy and the reply comments of NWN concerning the effects of normal weather on costs and savings to be useful as an additional item to incorporate into NWN's Multi-Year Action Plan.

### **Conclusion**

Based on review of NWN's planning efforts and the company's October 3, 2000 agreement to the recommended modifications included in this order, NWN's 2000 Integrated Resource Plan is acknowledged. NWN's LCP meets the minimum substantive and procedural requirements of Order No. 89-507. Achievement of the objectives in the company's 2000 Multi-Year Action Plan will enhance the company's efforts in the development of future integrated resource plans and assist the company in minimizing its total system costs over the thirty-year planning horizon.

### **EFFECT OF THE PLAN ON FUTURE RATE-MAKING ACTIONS**

Order No. 89-507 sets forth the Commission's role in reviewing and acknowledging a utility's LCP or least-cost plan, as follows:

The establishment of least-cost planning in Oregon is not intended to alter the basic roles of the Commission and the utility in the regulatory process. The Commission does not intend to usurp the role of utility decision-maker. Utility management will retain full responsibility for making decisions and for accepting the consequences of the decisions. Thus, the utilities will retain their autonomy while having the benefit of the information and opinion contributed by the public and the Commission.

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Plans submitted by utilities will be reviewed by the Commission for adherence to the principles enunciated in this order and any supplemental orders. If further work on a plan is needed, the Commission will return it to the utility with comments. This process should eventually lead to acknowledgment of the plan.

Acknowledgment of a plan means only that the plan seems reasonable to the Commission at the time the acknowledgment is given. As is noted elsewhere in this order, favorable rate-making treatment is not guaranteed by acknowledgment of a plan.

Order No. 89-507 at 6 and 11.

This order does not constitute a determination on the rate-making treatment of any resource acquisitions or other expenditures undertaken pursuant to NWN's 2000 LCP. As a legal matter, the Commission must reserve judgment on all rate-making issues. Notwithstanding these legal requirements, we consider the integrated resource planning process to complement the rate-making process. In rate-making proceedings in which the reasonableness of resource acquisitions is considered, the Commission will give considerable weight to utility actions that are consistent with acknowledged integrated resource plans. Utilities will also be expected to pursue unanticipated least-cost opportunities beneficial to ratepayers which arise after Commission acknowledgement or, alternatively, explain why such opportunities were not pursued.

**CONCLUSIONS**

1. NWN is a public utility subject to the jurisdiction of the Commission.
2. NWN's 2000 Integrated Resource Plan, with the modifications adopted herein, reasonably adheres to the principles for least-cost planning set forth in Order No. 89-507. The plan will assist in insuring that NWN's customers receive adequate service at fair and reasonable rates and is otherwise in the public interest.

**ORDER**

**IT IS ORDERED** that the 2000 Integrated Resource Plan filed by Northwest Natural Gas, dated July 28, 2000, as modified herein, is acknowledged in accordance with the terms of this order and Order No. 89-507.

Made, entered, and effective \_\_\_\_\_.

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**Ron Eachus**  
Chairman

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**Roger Hamilton**  
Commissioner

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**Joan H. Smith**  
Commissioner