PUBLIC SERVICE COMMISSION OF NEVADA

Application of Nevada Power Company
for approval of its 2000 Resource Plan for the
20-year period of 2000 through 2019.

Docket No. 01-7016

Direct Testimony of
Timothy Woolf
Synapse Energy Economics, Inc.

On Behalf of
The Bureau of Consumer Protection

Regarding the Nevada Power Company's
Demand-Side Management Plan

September 26, 2001

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1. INTRODUCTION AND QUALIFICATIONS

Q. What is your name, position and business address?

A. My name is Timothy Woolf. I am the Vice-President of Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

Q. Please describe Synapse Energy Economics.

A. Synapse Energy Economics is a research and consulting firm specializing in electricity industry regulation, planning and analysis. Synapse works for a variety of clients, with an emphasis on consumer advocates, regulatory commissions, and environmental advocates. Additional information regarding Synapse Energy Economics can be obtained at www.synapse-energy.com.

Q. Please describe your experience in the area of electric utility regulation, planning and analysis.

A. My experience is summarized in my resume, which is attached as Exhibit TW-1. Electric power system planning and regulation have been a focus of my professional activities for the past nineteen years. In my current position at Synapse, I investigate a variety of issues related to the restructuring of the electric industry; with an emphasis on energy efficiency, renewable resources, air quality, environmental policies, performance-based ratemaking, market structure, customer aggregation and many aspects of consumer protection.

Q. Please describe your professional experience before beginning your current position at Synapse Energy Economics.

A. Before joining Synapse Energy Economics, I was the Manager of the Electricity Program at Tellus Institute, a consulting firm in Boston, Massachusetts. In that capacity I managed a staff that provided research, testimony, reports and regulatory support to state energy offices, regulatory commissions, consumer advocates and environmental organizations in the US. Prior to working for Tellus Institute, I was employed as the Research Director of the Association for the Conservation of Energy in London, England. I have also worked as a Staff Economist at the Massachusetts Department of Public Utilities (now the Department of Telecommunications and Energy), and as a Policy Analyst at the

Massachusetts Executive Office of Energy Resources (now the Division of Energy Resources). I hold a Masters in Business Administration from Boston University, a Diploma in Economics from the London School of Economics, a BS in Mechanical Engineering and a BA in English from Tufts University.

Q. Please describe your experience that is directly related to energy efficiency and demand-side management.

A. I have addressed many aspects of energy efficiency programs and policies since 1986. While I was at the Executive Office of Energy Resources I represented the office in one of the first DSM collaborative processes in the country. While I worked for the Department of Public Utilities I reviewed and critiqued the DSM programs of the state's electric utilities, and I helped draft the state's integrated resources planning regulations. While at the Association for the Conservation of Energy I advocated for energy efficiency programs in the context of the newly restructured electricity industry in England and Wales. While at Tellus Institute I reviewed and critiqued the DSM programs and integrated resource plans of several US utilities. For the past three and a half years I have worked on behalf of the Cape Light Compact – the first municipal aggregator in the US – in designing and helping to implement their innovative efficiency programs. I have recently completed a study of the potential for energy efficiency and renewable resources over the next twenty years in ten Midwestern states, and I am currently conducting a similar study for six states in the Southeast.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of the Bureau of Consumer Protection (BCP).

Q. Have you testified previously in this docket?

A. No, I have not.

Q. What is the purpose of your testimony.

A. The purpose of my testimony is to review and critique the Demand-Side Management (DSM) Plan of the Nevada Power Company (the Company), filed as part of its Refiled 2000 Resource Plan.

Q. How is your testimony organized?

A. My testimony is organized as follows:

1. Introduction and Qualifications.
2. Summary of Conclusions and Recommendations.
3. Fundamental Principles of Energy Efficiency Programs.
4. Summary Review of the Company's DSM Plan.
5. A Collaborative Process for Designing DSM Programs.
6. Policies to Support Efficiency Over the Long-Term.

2. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Q. Please summarize your primary conclusions.

A. My primary conclusions are as follows:

1. In designing and implementing successful DSM plans, it is important to adhere to several fundamental principles regarding DSM program consistency, funding levels, cost-effectiveness, equity, market barriers, and institutional incentives.

2. The Company's DSM Plan – as it currently stands – does not adhere to these fundamental principles, nor does it comply with much of the Nevada Resource Plan Regulations (NAC 704.9005 – 704.9525). Consequently, the Company's current DSM plan is unlikely to provide substantial benefits to customers, will miss important resource opportunities, and will not result in the lowest cost Electric Resource Plan.

3. The "Programs for Future Consideration" in the Company's DSM plan hold the most potential for providing substantial benefits to customers, and therefore should be the focus of this proceeding. The most effective way to maximize the benefits from these future programs is for the Company to design them in collaboration with intervenors and relevant stakeholders.

4. The uncertainties regarding the structure of the electricity industry in Nevada in recent years has created new challenges for DSM planning. These uncertainties and challenges should be explicitly addressed by the Commission, in order to ensure that cost-effective energy efficiency initiatives are provided effectively and efficiently over the long-term future.

Q. Please summarize your primary recommendations.

A. My primary recommendations are summarized as follows:

1. The Commission should require the Company to establish a collaborative process for designing its future DSM programs, with the goal of completing program design within six months of commencement of the Collaborative.

2. The Commission should approve the Company's current DSM Plan, and allow the Company to implement the programs in the Plan during the next six months while the Collaborative is in process.

3. The Commission should open a new docket to address the uncertainties and challenges to DSM caused by the questions regarding electricity industry restructuring in Nevada and neighboring states. In that docket, the Commission should consider establishing a system-benefits charge to ensure that a consistent amount of funding will be provided for energy efficiency initiatives in both the short- and long-term. In that docket, the Commission should also consider establishing an Energy Efficiency Utility to take over the role of designing and implementing energy efficiency programs in Nevada. While it may be appropriate for the Nevada Legislature to play a role in establishing the system benefits charge and the Energy Efficiency Utility, an investigation by the Commission would be an important first step in identifying opportunities and developing proposals.

3. FUNDAMENTAL PRINCIPLES OF ENERGY EFFICIENCY PROGRAMS

Q. Are there certain principles that can be used to guide the design and implementation of energy efficiency programs?

A. Yes. Over the past ten years or more, utilities and efficiency experts have learned many lessons regarding the key elements and principles of successful energy efficiency programs. It is important to take advantage of these lessons in developing any energy efficiency plan, in order to obtain the maximum benefits of efficiency programs, and to avoid missing out on low-cost electric resource opportunities.

Q. Please summarize these key principles and guidelines.

A. While there are many important concepts and standards that are used in designing and implementing energy efficiency programs, I have condensed them down to seven key principles.

1. Energy efficiency initiatives should be considered an integral component of the electricity resource mix regardless of the extent to which the electricity industry is restructured. Efficiency programs should be supported at consistent levels over time, and should pursue both short-term and long-term efficiency opportunities.

2. A sufficient amount of funds should be dedicated to energy efficiency initiatives in order to adequately capture their potential benefits. These funds should be obtained consistently from all electricity customers that use the distribution system, regardless of whether the local utility is vertically integrated or is a distribution-only utility.

3. Energy efficiency programs should be designed to be cost-effective, and only cost-effective energy efficiency programs should be implemented. A program should be considered cost-effective if it passes the Total Resource Cost (TRC) standard, which requires that the present worth of total costs of implementing the program is less than the present worth of total benefits of the program. In selecting and prioritizing energy efficiency programs, consideration should

also be given to societal costs, which include the environmental impacts of electricity resources.

4. Energy efficiency programs should be designed in such a way as to overcome the many market barriers that hinder customer adoption of energy efficiency measures. Experience has demonstrated that education and information programs are generally not sufficient to overcome these market barriers.

5. Energy efficiency programs should be designed to address a broad range of customer classes and types. Particular emphasis should be paid to low-income customers, residential customers, and small commercial customers, due to the particular barriers that they face.

6. Energy efficiency programs should be designed and implemented in such a way as to avoid lost opportunities and minimize cream-skimming.

7. The entity charged with designing and implementing the energy efficiency programs – whether it be the local electric utility or another entity – should have the appropriate financial incentives and organizational priorities to ensure that the programs are designed and implemented as effectively and efficiently as possible.

Q. Why do you consider these principles and guidelines to be so important?

A. Designing and implementing energy efficiency programs can be a complex and challenging task requiring the coordination of many activities and the involvement of many actors. It is important that the various actors have clear directions, have consistent financial support, and have the appropriate motivation and guidance to ensure success. In addition, efficiency programs impose various costs and provide significant benefits, so it is important that the programs be designed and implemented in a way that is equitable and provides the greatest benefits to all concerned. The principles and guidelines outlined above are intended to achieve these objectives, and to therefore achieve the primary goal of reducing the total cost of electricity services.

4. SUMMARY REVIEW OF THE COMPANY'S DSM PLAN

Q. What is your general observation about the Company's DSM Plan?

A. The Company's DSM Plan provides very little information or details about the proposed energy efficiency programs. Nevertheless, from the information provided it appears as though the proposed programs will not obtain the full potential benefits available from DSM, and will miss many opportunities for capturing cost-effective resources.

Q. Does the Company's DSM Plan comply with the Nevada Resource Plan Regulations?

A. No, it does not. The Plan does not comply with some of the most important provisions of NAC 704.934, such as the requirements to assess the technically feasible programs, to assess the savings available from technically feasible programs, and to assess the costs and benefits of each DSM program.

Q. Does the Company's DSM Plan adhere to the fundamental principles and guidelines that you outline above.

A. No, it does not adequately adhere to any of the principles outlined above. The reasons for this conclusion are summarized below:

1. The recent events in the regional electricity market have resulted in an increased concern about energy efficiency. (Amended Application of Nevada Power Company, Docket 00-6063, page 5.) As a result of this sudden shift in public policy with regard to energy efficiency, the Company has apparently not had sufficient time to adequately develop this DSM Plan.

2. The Company's total DSM budgets appear to be smaller than is necessary to capture the full benefits of DSM. Its budgets are significantly lower than those of other utilities offering comprehensive DSM programs, even after accounting for the different sizes of utilities.

3. The proposed DSM programs were not screened using any cost-effectiveness test. Consequently, it is not possible to determine whether these programs are in the public interest, or whether additional programs or program designs would provide additional benefits to the public.

4. The proposed DSM programs place too much emphasis on providing education and information to customers. Experience with other DSM programs over the years has demonstrated that education and information are insufficient to achieve potential efficiency savings, and that financial incentives and other measures are necessary to overcome the many market barriers that hinder customer adoption of energy efficiency measures. The Company acknowledges this important point in describing the Commercial Lighting Program, where it notes that to "ensure the effectiveness of any program, it should involve a monetary incentive to the customer." (Nevada Power Company DSM Plan, page DS-9.) Despite this acknowledgement, the majority of the Company's DSM programs do not include any financial incentive for the participating customer.

5. The proposed DSM programs offer very little for low-income and residential customers. There are many electricity end-use measures that might not be addressed through the Residential Insulation and Weatherization program, such as water heaters , refrigeration, and air conditioners. In addition, for these types of customers it is especially important to offer financial incentives, yet the current programs offer none. (Nevada Power Response to Request BCP 5-11.)

6. The proposed DSM programs do not address new construction activity in either the residential, commercial or industrial sectors. Efficiency programs targeted to new construction markets are one of the best ways to avoid lost opportunities, especially during periods of high economic development and high load growth. The programs do not appear to include any point-of-purchase programs, which are another effective means of avoiding lost opportunities.

7. The Company does not have the proper financial incentives and corporate priorities to aggressively and successfully pursue the full potential for cost-effective energy efficiency opportunities. This is especially true during

periods when there is uncertainty regarding retail competition in the electricity industry. This point is addressed in more detail in Section 6 below.

Q. What part of the Company's DSM Plan do you find most encouraging?

A. I am encouraged by the final section of the DSM Plan, labeled Programs for Future Consideration. While there is almost no information about the content of these programs, their titles indicate that they will be much more likely to achieve significant efficiency savings than the current programs in the DSM Plan. There are several programs that appear to offer financial incentives to both residential and commercial customers. One program appears to be targeted specifically to low-income customers. The New Home Energy Efficiency program appears to be targeted to new construction in the residential sector, and the Appliance Rebates program appears to be targeted to point-of-purchase incentives for residential appliances – two important programs for avoiding lost opportunities. With these programs as a starting point, and with a little more time for program design and assessment, the Company has the opportunity to tap into a much greater portion of the energy efficiency potential within its service territory. The Company notes that it will develop program design recommendations in early October, with the goal of implementing the revised programs by January 1, 2002. (Nevada Power Response to Request BCP 5-14.)

5. A COLLABORATIVE PROCESS FOR DESIGNING DSM PROGRAMS

Q. How do you recommend that the Company proceed with its DSM Plan?

A. I recommend that the Company work collaboratively with interested parties to design the energy efficiency programs to be implemented in 2002. Rather than working in isolation on the Programs for Future Consideration – without the opportunity for intervenor or Commission input or review – the Company should work together with key stakeholders to design new programs.

Q. Why do you believe that a collaborative approach should be used to design the new energy efficiency programs?

A. Because of the limited time available for this proceeding, and the limited amount of information provided in the DSM Plan, it is very difficult to provide meaningful comments on, and input to, the Company's DSM program. As described above, the most meaningful portion of the proposed DSM Plan is the portion that has yet to be designed. Consequently, the most effective way for the BCP and other intervenors to have input to the DSM Plan would be to work cooperatively with the Company in their design. This approach significantly limits the amount of contested matters, and leads to greater understanding of the complex issues by all parties involved. It also requires significantly less regulatory intervention and litigation, as the parties work out most, if not all, of their differences outside of the regulatory proceeding. Experience in other states has shown that a collaborative DSM process can be very effective in developing successful, cost-effective programs and avoiding the pitfalls of highly-contentious, drawn-out litigation over DSM program design questions.

Q. How would the collaborative process work?

A. The details of the collaborative process should be worked out among the key stakeholders that participate. One of the first tasks of the Collaborative would be to establish the overall goals and objectives of the process. The next important task would be to establish the principles that would be used to guide the program design process. The principles outlined in Section 3 above would be a good starting point for this discussion. These principles should also be guided by the requirements of the Nevada Resource Plan Regulations.

Q. How long would the collaborative process take?

A. I recommend that the Company be given six months to develop new DSM program designs collaboratively with interested stakeholders. This would allow sufficient time for meaningful input from the stakeholders, and would allow the Company to begin implementing programs in the spring of 2002, before the peak season next summer. At the end of this six-month period, the Company would file a new DSM plan for Commission review and approval. If there are any DSM

issues that have not been agreed to by all parties of the Collaborative, any party would have the right to bring any such issue to the attention of the Commission at that time.

Q. What should the Company do with the DSM Plan during the six-month collaborative process?

A. During the six-month collaborative process the Company should be allowed to implement the DSM Plan as filed with the Commission. The Company should also be allowed to recover any costs associated with prudently incurred DSM expenses during that period. While I have significant concerns regarding the programs in the DSM Plan, as summarized in Section 4 above, the BCP would agree to not contest the DSM Plan and the associated expenses for the next six months, as long as the Company maintained a good-faith effort to conduct a successful collaborative process during that time.

6. POLICIES TO SUPPORT EFFICIENCY OVER THE LONG-TERM

Q. Does the debate over electricity industry restructuring have any implications regarding the long-term future of DSM programs and plans?

A. Yes – some very important implications. Over the past five or six years the advent of retail competition has had a very chilling effect on utility-driven energy efficiency programs in the US. Between 1995 and 1999, the total amount of utility funding of DSM programs has been reduced from $2.4 billion to $1.4 billion, primarily as a result of the introduction of retail competition. (US Energy Information Administration, Electric Utility Demand-Side Management 1999.) Even in those states that have not introduced retail competition, DSM efforts were cut back with the *expectation* of competition being introduced in the near- to mid-term future.

However, the rationale for DSM is just as compelling in a restructured industry as it was in the past. Cost-effective energy efficiency will lower total electricity costs, reduce the environmental impacts of electricity production, and provide a host of benefits to customers and society in general – regardless of the particular structure of the electricity industry. The only things that might need to be

changed in a restructured industry are the policies, mechanisms and institutions that support energy efficiency initiatives.

Q. How should the Commission address DSM issues at this time, given the uncertainties regarding retail competition and the structure of the electricity industry in Nevada?

A. The energy efficiency programs in Nevada could easily end up in a state of limbo. While the Company is currently required by the Nevada Resource Plan Regulations to implement DSM programs under the assumption that Nevada will not introduce retail competition, it must naturally be concerned about how the industry will change in the future. Political sentiment in Nevada could swing back in favor of retail competition, or Federal legislation may eventually require retail competition in Nevada. Under these conditions one would expect the Company management to be hesitant to fully embrace DSM programs as part of a medium- or long-term strategy.

I recommend that the Commission open a separate docket to investigate energy efficiency policies and mechanisms that provide greater certainty about the future of energy efficiency. These policies should be designed in a way that supports energy efficiency initiatives and captures the many benefits of energy efficiency – regardless of the particular structure of the electricity industry. This is the best way to ensure that energy efficiency initiatives are supported consistently from one year to the next, and are considered an integral part of the electricity resource mix over the short- medium- and long-term future.

Q. What sort of changes need to be made to support energy efficiency initiatives over the medium- and long-term future?

A. There are two fundamental changes that will help support energy efficiency initiatives regardless of the structure of the electricity industry. The first change is to remove the uncertainty regarding energy efficiency funding and cost recovery. The second change is to transfer the funding and the responsibility for energy efficiency to an independent agency with clear objectives and incentives for designing and implementing successful and effective programs.

Q. What can be done to remove the uncertainty regarding energy efficiency funding and cost recovery?

A. A system benefits charge (SBC) can be established to ensure a stable, predictable, and guaranteed level of DSM funding from all customers. The SBC would be a non-bypassable charge in ¢/kWh that is applied to all customers on the electric distribution system. In this way, energy efficiency funding would be maintained regardless of whether customers are allowed to choose alternative generation suppliers. The Company would not have to worry about customers leaving the system and not paying their portion of the efficiency costs. The funds would be raised before the efficiency costs are incurred, so the Company would not have to worry about making investments in energy efficiency that would later be considered inappropriate for cost recovery or disallowed for any reason. This approach to energy efficiency funding has been used in many states in recent years, and has proven to be effective at addressing uncertainties about retail competition.

Q. What can be done to transfer the responsibility for energy efficiency to an independent agency?

A. An independent agency can be established to design and implement energy efficiency programs instead of the Company. This agency would be a non-profit company or a public organization – an Energy Efficiency Utility – with the primary objective of designing and implementing cost-effective, successful energy efficiency programs that maximize the benefits to customers and society in general. Transferring the responsibility for energy efficiency in this way achieves two important objectives. First, it puts energy efficiency in the hands of an organization whose sole purpose and mission is to achieve efficiency savings, instead of leaving it in the hands of a utility that faces significant financial disincentives to achieve efficiency savings. Second, it puts energy efficiency in the hands of an organization that would be unaffected if the electricity industry in Nevada is eventually restructured. If energy efficiency programs were funded by an SBC and implemented by an Energy Efficiency Utility, then they would be unaffected by the political, regulatory and institutional uncertainties associated with retail competition over the short- and long-term future.

Q. Are these two measures only appropriate if Nevada were to eventually introduce retail competition in Nevada?

A. No. Both of these measures would significantly promote the development of energy efficiency in Nevada, regardless of whether retail competition is eventually introduced. They are appropriate and effective measures under today's conditions, and they would be appropriate and effective under future electricity industry conditions.

Q. Does this conclude your testimony?

A. Yes, it does.

Timothy Woolf

Vice President
Synapse Energy Economics
22 Pearl Street, Cambridge, MA 02139
(617) 661-3248 • fax: 661-0599
www.synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics Inc., Cambridge, MA. Vice President, 1997-present. Conducting research, writing reports, and presenting expert testimony pertaining to consumer, environmental, and public policy implications of electricity industry regulation. Primary focus of work includes electricity industry restructuring and competition, electric power system planning, power plant performance and economics, energy efficiency, renewable resources, performance-based ratemaking, market power, air quality, and many aspects of consumer and environmental protection.

Tellus Institute, Boston, MA. Senior Scientist, Manager of Electricity Program, 1992-1997. Responsible for managing six-person staff that provided research, testimony, reports and regulatory support to consumer advocates, environmental organizations, regulatory commissions, and state energy offices throughout the US.

Association for the Conservation of Energy, London, England. Research Director, 1991-1992. Researched and advocated legislative and regulatory policies for promoting integrated resource planning and energy efficiency in the competitive electric industries in the UK and Europe.

Massachusetts Department of Public Utilities, Boston, MA. Staff Economist, 1989-1990. Responsible for regulating and setting rates of Massachusetts electric utilities. Drafted integrated resource planning regulations. Evaluated utility energy efficiency programs.

Massachusetts Office of Energy Resources, Boston, MA. Policy Analyst, 1987-1989. Researched and advocated integrated resource planning regulations. Participated in demand-side management collaborative with electric utilities and other parties.

Energy Systems Research Group, Boston, MA. Research Associate, 1983-1987. Performed critical evaluations of electric utility planning and economics, including production cost modeling and assessment of power plant costs and performance.

Union of Concerned Scientists and Massachusetts Public Interest Research Group, Cambridge and Boston, MA. Energy Analyst, 1982-1983. Analyzed environmental and economic issues related to nuclear plants, renewable resources and energy efficiency.

EDUCATION

Masters, Business Administration. Boston University, Boston, MA, 1993.
Diploma, Economics. London School of Economics, London, England, 1991.
B.S., Mechanical Engineering. Tufts University, Medford, MA, 1982.
B.A., English. Tufts University, Medford, MA, 1982.

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