STATE OF MICHIGAN

BEFORE THE PUBLIC SERVICE COMMISSION

In the matter of the Application of	)	
THE DETROIT EDISON COMPANY for	)	
authority to implement a Power Supply Cost	)	**Case No. U-10702**
Recovery Plan in its rate schedules for 1995	)	
metered jurisdictional sales of electricity.	)	

DIRECT TESTIMONY OF

PAUL CHERNICK

ON BEHALF OF

THE RESIDENTIAL RATEPAYER CONSORTIUM

Resource Insight, Inc.

December 19, 1994

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I. Identification and Qualifications

Q: Mr. Chernick, please state your name, occupation, and business address.

A: I am Paul L. Chernick. I am president of Resource Insight, Inc., 18 Tremont Street, Suite 1000, Boston, Massachusetts.

Q: Summarize your professional education and experience.

A: I received a SB degree from the Massachusetts Institute of Technology in June 1974 from the Civil Engineering Department, and a SM degree from the Massachusetts Institute of Technology in February 1978 in Technology and Policy. I have been elected to membership in the civil engineering honorary society Chi Epsilon, and the engineering honor society Tau Beta Pi, and to associate membership in the research honorary society Sigma Xi.

I was a Utility Analyst for the Massachusetts Attorney General for more than three years, and was involved in numerous aspects of utility rate design, costing, load forecasting, and the evaluation of power supply options. Since 1981, I have been a consultant in utility regulation and planning: first as a Research Associate at Analysis and Inference, after 1986 as President of PLC, Inc., and since August 1990 in my current position at Resource Insight. In those capacities, I have advised a variety of clients on utility matters, including, among other things, the need for, cost of, and cost-effectiveness of prospective new generation plants and transmission lines; retrospective review of generation planning decisions; ratemaking for plant under construction; ratemaking for excess and/or uneconomical plant entering service; conservation program design; cost recovery for utility efficiency programs; and

the valuation of environmental externalities from energy production and use. My resume is attached as Exhibit I-____ (PLC-1).

Q: Have you testified previously in utility proceedings?

A: Yes. I have testified over one hundred times on utility issues before various regulatory, legislative, and judicial bodies, including the Massachusetts Department of Public Utilities, the Massachusetts Energy Facilities Siting Council, the Vermont Public Service Board, the Texas Public Utilities Commission, the New Mexico Public Service Commission, the District of Columbia Public Service Commission, the New Hampshire Public Utilities Commission, the Connecticut Department of Public Utility Control, the Maine Public Utilities Commission, the Minnesota Public Utilities Commission, the South Carolina Public Service Commission, the Federal Energy Regulatory Commission, and the Atomic Safety and Licensing Board of the U.S. Nuclear Regulatory Commission. A detailed list of my previous testimony is contained in my resume.

Q: Have you testified previously before this Commission?

A: Yes. I testified before the Michigan PSC in Cases Nos. U-7775 and U-7785, on power plant performance standards. I also testified before the Commission in Case No. U-10102 on Detroit Edison's demand-management program, and in Case No. U-10335 and Case No. U-10554, on Consumers Power's demand-management planning, non-residential program design, screening, avoided-cost calculations, and cost-recovery proposals.

Q: Have you been involved in least-cost utility resource planning?

A: Yes. I have been involved in utility planning issues since 1978, including load forecasting, the economic evaluation of proposed and existing power plants,

and the establishment of rate for qualifying facilities. Most recently, I have been a consultant to various energy conservation design collaboratives in New England, New York, and Maryland; to the Conservation Law Foundation's conservation design project in Jamaica; to CLF interventions in a number of New England rulemaking and adjudicatory proceedings; to the Boston Gas Company on avoided costs and conservation program design; to the City of Chicago in reviewing the Least Cost Plan of Commonwealth Edison; to the South Carolina Consumer Advocate on least-cost planning; to environmental groups in North Carolina, Florida, Ohio and Michigan on DSM planning; and to several parties on incorporating externalities in utility planning and resource acquisition. I also assisted the DC PSC in drafting order 8974 in Formal Case 834 Phase II, which established least-cost planning requirements for the electric and gas utilities serving the District.

II. Introduction

Q: On whose behalf are you testifying?

A: I am testifying on behalf of the Residential Ratepayer Consortium.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to respond to the Detroit Edison Company's PSCR filing. I first discuss how the Company's 1995 energy costs do not reflect the Company's actual DSM spending plans as proposed in Michigan PSC Case No. U-10671 and U-10102. In these latter cases, the Company proposes to reduce significantly its 1995 DSM spending compared to levels assumed for the calculation of the 1995 energy costs in this proceeding. Second, I discuss how the five-year plan would fail to acquire all the cost-

effective DSM savings identified by the Company in its 1994 Integrated Resource Plan.

Q: How do the Company's DSM plans pertain to its energy costs?

A: The Company's projected energy costs are based, in part, on plans to acquire cost-effective demand-side-management savings. Specifically, the Company has based its energy costs for 1995, and its proposed five-year plan, on its 1994 Integrated Resource Plan. However,

- Edison has proposed in Case No. U-10671 and U-10102 to abandon its IRP and scale back its DSM efforts; if it does so, its costs, including energy costs, will increase over those submitted in the instant proceeding.
- Edison's IRP plan restricts the acquisition of cost-effective DSM savings after 1996. Consequently, its five-year plan reflects greater energy costs after 1996 than if Edison comprehensively acquired all cost-effective demand-side resources identified in the IRP.

Q: Please summarize the Company's latest DSM plans.

A: Detroit Edison, citing "marketplace changes in the electric utility industry" (Welch Direct in U-10671 at 6), proposes to abandon cost-effective DSM spending plans generated through its least-cost-planning process and described in its 1994 Integrated Resource Plan. Instead, the Company (Wrenbeck Direct in U-10671 at 5, 9, 10 and Exhibit THW-2) would fund only the following:

- Demand-side management that passes the Rate Impact Measure Test,
- Thirty-three measures that fail the RIM Test but that the Company has determined "add value for our customers,"
- unspecified "energy audits, education, [and] information."

The Company also intends to provide

- a residential low-income DSM program to satisfy the MPSC Order in Case No. U-10297,
- various unspecified DSM projects for select customers under special manufacturing contracts.[1]

Q: How did Detroit Edison select the non-RIM-passing DSM it included in its latest proposal?

A: The Company relied on customer "focus groups, surveys, and roundtable discussions" to establish the *need for* utility-sponsored DSM beyond those measures that pass the RIM Test. However, the Company does not reveal on what basis it decided that its 33 non-RIM-passing DSM measures satisfy this need (Wrenbeck at 9).

The measures selected by the Company for this purpose all cost less than the supply they would replace (that is, they pass the Total Resource Cost Test), but the Company rejected other similarly cost-effective measures that it identified in the IRP (Wrenbeck at Exhibits THW-2, THW-3).

Q: How do the Company's latest plans differ from its 1994 IRP Recommended Plan?

A: The principal difference is the abandonment of cost-effective DSM. For 1995, the IRP proposes spending the full $14.9 million authorized by the Commission in its Order in Case No. U-10102 (at 153).[2] For 1996, the IRP includes the full ordered $19 million. After 1996 the IRP Recommended Plan would only spend (1) to maintain savings levels achieved by 1996 (as short-

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[1]The Company has proposed these contracts in Case No. U-10646.

[2]The IRP also proposes spending additional funds on a residential low-income DSM Program to satisfy the MPSC Order in Case No. U-10297.

lived measures wear out and must be replaced), and (2) DSM measures that pass the RIM Test.

In contrast, the Company's latest plan would spend $4.94 million in 1995.[3] After 1995, the Company is silent about how much, if anything, it will propose to spend to acquire cost-effective DSM.

Q: Would the 1994 IRP Recommended Plan acquire all cost-effective DSM resources?

A: No. The Company's IRP (Table 4.1-2, at 27) itself indicates that by 2008 the Recommended Plan would save 522 GWh (at a cost of $167 million), far short of the 2,970 GWh that could be saved (at a cost of $546 million) by acquiring *all* DSM that costs less than the supply it would avoid. After 1996, under the IRP Recommended Plan, Edison would stop acquiring all cost-effective DSM savings and would limit itself to RIM-passing measures plus periodic expenditures to maintain savings acquired in the period 1994–1996. As a result the IRP Recommended Plan would forego cost-effective savings of 35.3 GWh in 1997 and 2,448 GWh by 2008 (IRP Table D-1 at D1, Table D-3 at D2, Table 4.1-2 at 27).

Q: How does the failure to acquire cost-effective savings after 1996 affect the Company's PSCR Filing?

The five-year plan that the Company is proposing in this docket is based on the IRP Recommended Plan and consequently falls short of acquiring all

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[3]As in the IRP, the Company also proposes spending $8.496 million "on a Residential Low Income DSM Program pursuant to the MPSC Order in Case No. U-10297." Edison's latest proposal also includes $2.038 million for unspecified DSM for special manufacturing contracts submitted to the Commission in Case No. U-10646.

cost-effective DSM resources identified in the IRP. Thus, the five-year plan overstates energy requirements and costs compared to those under a least-cost scenario.

Q: What reasons does Detroit Edison give for abandoning the DSM it had proposed in its IRP Recommended Plan?

A: The Company says that it faces growing competition and therefore must keep customer rates, not costs, as low as possible.

> The Company has adopted its new and more rigorous policy with respect to DSM because of the accelerating trend toward increased competition in the electric utility industry and in recognition of the fact that the Company's rates, particularly for large industrial customers, have been high in comparison with the rates charged by other utilities to similarly situated customers and in comparison with the cost of alternative sources of energy available to such customers. (Detroit Edison Company Application for Modification of Opinion and Order in Case U-10102 [August 15 1994] at 5).

Q: Has the Company analyzed the cost or rate implications of its proposal?

A: No. Edison apparently has not estimated either total system cost or rate effects of its latest proposed DSM plan. In particular, the Company has not performed an integrated-resource-planning analysis of its proposal.

The Company's failure to undertake an integrated planning analysis contravenes explicit Commission directives, as reaffirmed in its October 12, 1994 order in Case U-10574 (at 12):

> Although the Commission may not make utility management decisions, the Commission must determine whether a utility has incurred costs pursuant to reasonable and prudent actions, a prerequisite for cost recovery. Based on that authority, the Commission has stated the expectation that each utility will ground its decisions concerning meeting additional needed capacity on the company's integrated resource plan. Because the Commission also expects a reasonable degree of continuity in utility planning processes, the companies are required to fully explain and justify any significant deviation from the most recent integrated resource plan.

Edison has not "fully explain" or "justified" the "significant deviation" it has proposed from its "most recent integrated resource plan."

Q: Has the Company presented a reasonable assessment of the likely role of DSM in a competitive market?

A: No. The Company has not presented a credible evaluation of the likelihood or nature of retail competition, or of the role of DSM in a competitive market. Edison simply asserts that competition renders its 1994 IRP obsolete. The Company does not even attempt to show that competition will be primarily on the basis of commodity price, or that DSM-related rate effects will be a major consideration in price competition.

Indeed, the only evidence that the Company offers in support of its DSM cuts—"numerous focus groups, surveys, and roundtable discussions conducted with...customers"—strongly support the opposite conclusion: that continued acquisition of cost-effective DSM will provide value to Edison's customers and consequently enhance Edison's competitiveness.

> [C]ustomers want Detroit Edison's assistance in controlling their electric usage. Methods to assist customers in controlling their electric usage include:
>
> - Energy education and credible information on ways to reduce energy usage;
> - Energy audits to identify and recommend energy efficiency improvements;

- Financing mechanisms to support installation of energy-efficient equipment; and
- Offering DSM rebates for the purchase of cost-effective energy-efficient equipment. (Wrenbeck at 9)

Similarly, Company hopes to retain the Big Three auto makers as customers by providing "on-site engineering expertise to implement better service, identify energy conservation efficiency improvement possibilities and achieve valuable energy savings for each customer." The Company justifies this expenditure on the grounds that it will "provide substantial customer value" (Detroit Edison Company Application in Case No. U-10646).

The Company could learn a valuable lesson from its customer focus groups and its negotiations with the Big Three. Instead, its implicit focus on price competition ignores that fact that a customer's viability depends in part on its ability to minimize the cost of the energy-service input to its production process, not necessarily the price of the electricity purchased. In short, competitiveness depends on bills (or bills per unit of output), not rates (or bills per kWh of input). Customer bills, in turn, depend on both rates and the efficiency with which electricity is converted to provide energy services.

Demand-side-management-related rate increases should not reduce a firm's competitive position, or the economic attractiveness of the service territory, if the DSM activities allow the firm to reap proportionately larger process-efficiency improvements. A well-designed DSM portfolio can increase the attractiveness of the Company's service territory to its current and prospective new customers.

Q: Does the Company offer any reasons in support of its decision to abandon cost-effective DSM savings that do not pass the RIM Test?

A: According to the Company,

> In a competitive marketplace with rate-conscious customers, the short-term impact on rates is of concern. Implementing DSM options which pass the RIM Test results in short-term rate neutrality or rate reductions. Implementing DSM options which pass the TRC Test but fail the Rim Test results in short-term rate increases. (Wrenbeck at 8)

Moreover, the Company asserts,

> Selecting DSM options that pass the RIM Test is directly analogous to the way supply-side options are selected. Therefore, rates can be expected to either decrease or at least stay the same with RIM-passing DSM options as compared to a supply-side alternative. This is also consistent with the National Energy Policy Act of 1992, which seeks to put demand-side resources on a "level playing field" with supply-side resources. (Welch at 8)

Q: Will screening with the RIM ensure short-term rate neutrality or reductions?

A: No. The RIM Test measures the rate effect of DSM over time on a present-value basis, and thus provides little information on the timing of the rate effect. Implementation of a RIM-passing DSM option could lead to a short-term rate increase, followed by an offsetting rate reduction.

Similarly, supply-side investments that reduce average rates over time may still result in significant rate increases in the short term due to front-loaded cost recovery.

Q: Is rate minimization a prudent basis for choosing between demand and supply?

A: No. Selecting DSM options in this fashion will lead to the rejection of DSM options that cost less than their respective supply alternatives, whenever the DSM would increase rates over those associated with their supply options. The Company would apply this rule regardless of the magnitude or timing of the

rate increase. The Company is thus proposing to sacrifice its fundamental obligation to minimize costs

Q: Is it true that Edison's plans to screen DSM with the RIM Test is consistent with the National Energy Policy Act?

A: Not at all. The Energy Policy Act explicitly defines integrated resource planning as a process for leveling the playing field on the basis of total system cost, not rates.

> The term "integrated resource planning" means, in the case of an electric utility, a planning and selection process for new energy resources that evaluates the full range of alternative, including new generating capacity, power purchases, energy conservation and efficiency, cogeneration and district heating and cooling applications, and renewable energy resources, in order to provide adequate and reliable service to its electric customers at the *lowest system cost.* (Energy Policy Act of 1992 at 22; emphasis added)[4]

Q: Please summarize your assessment of the Company's latest DSM plan and its supporting arguments.

A: The plan and the logic that supports it are fundamentally defective.

- If implemented, the plan would entail unnecessary customer costs, including energy costs; harm Michigan's economy; and impair the Company's competitiveness.
- The Company both exaggerates and misapprehends the competitive threat that may lie in its future. Detroit Edision's strongest response to competition will be to offer its customers the lowest energy *costs,* and its

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[4]House of Representatives. 1992. Energy Policy Act of 1992 Conference Report to Accompany HR 776. The Act added its definition of integrated resource planning to the Public Utility Regulatory Policies Act of 1978 (PL 95-617; 92 Stat. 3117; 16 USC 2601 et seq.) as Paragraph 19 of Section 3.

ability to do so will be hampered by its unjustifiable fixation on offering lowest energy *rates.*

- The Company is correct that DSM "adds value" to the services it provides, and thus has the potential to improve the Company's competitive position. Edison undermines its competitiveness when it substitutes its own arbitrary judgment for least-cost planning principles in the selection of "value"-adding DSM options in 1995. Edison's reliance on arbitrary judgment leads to the rejection of cost-effective DSM options that could further enhance its competitiveness.
- The correct yardstick for the Company to measure cost-effectiveness on both the demand and supply sides is that of least cost, not least rates.
- The Company's proposal is not based on an integrated planning process and thus defies the Commission's directives.

Q: To what extent would energy costs increase if the Company were to abandon its IRP Recommended Plan in 1995?

A: The Company does not provide this information, and making reasonable estimates would be beyond the scope of my testimony.

Q: Please summarize your recommendations.

A: The Commission should remind the Company of its obligation to minimize ratepayer costs though integrated least-cost planning:

> The Commission Staff and Michigan utilities should continue to use integrated resource planning principles to prevent current and future planning decision from burdening future customers with unwarranted costs or unreliable energy systems. (MPSC Order in Case U-10574 at 21)

> The January 21, 1994, order approved Detroit Edison's request to initiate an ongoing system of demand-side management (DSM) intended, among other things, to...lower its customers' bills, at least in the long run. (MPSC Order in Rehearing in Case No. 10102 at 4)

Accordingly, the Commission should warn the Company that the Commission is prepared to deny in reconciliation proceeding any excess energy costs that result from the Company's failure to acquire the DSM savings identified in its IRP Recommended Plan for 1995.[5] In doing so, the Commission should expressly reject the Company's proposed use of the RIM Test and take this opportunity to remind the Company that use of the RIM to screen DSM is not consistent with least-cost-planning principles.

Similarly, the Commission should reject the Company's proposed five-year plan because it would fail to acquire all cost-effective DSM savings identified in the IRP as a result of its plan to rely on the RIM to screen DSM options after 1996.

III. Market Competition and Least-Cost Planning

Q: What is the Company's rationale for proposing to discard its IRP-recommended DSM spending plans?

A: The Company sees the utility environment as ever more competitive and price-sensitive, with large customers and municipals able to turn to alternative energy suppliers, self-generation, or cogeneration. In this more-competitive market, the Company recommends the minimization of rates, not bills, as the appropriate objective of DSM program planning.

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[5]The issue here is whether the total power-supply costs being charged to ratepayers is excessive, not whether the PSCR rate is higher or lower. Thus, any excess costs due to the Company's imprudent failure to implement DSM should be denied, but no adjustment should be made to actual sales levels.

Q: Has the Company reasonably characterized emerging competitive pressures and its effect on market structures and services?

A: No. The Company describes, in general terms, the factors that it contends are leading to competition, such as certain provisions of the National Energy Policy Act and Michigan's retail-wheeling experiment. Edison describes competition as a trend: it is "inexorable" and "rapidly emerging" (Welch at 6); its "pace...has quickened" (10); it "has been recognized by the financial rating agencies" (15); it is a "growing threat" (18). However, the Company does not describe how it believes competition will be structured.[6]

Despite Edison's complete failure to describe the structure of the coming competitive market, the Company concludes that its appropriate response to competition involves screening DSM with the RIM test. Although this conclusion is consistent with a belief that competition will be primarily on the basis of rates, the company does not expressly state that view, let alone offer any justification for it.

Q: Has Edison offered any justification to support the notion that DSM cutbacks and reliance on the RIM Test are appropriate responses to competition?

A: No. Edison has not conducted any studies regarding the effect of DSM costs on customers' ability to compete, or on the likelihood that customers will seek out alternative suppliers. Moreover, the Company has not performed any analyses to support the notion that reliance on the TRC tests will lead to

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[6]For instance, the Company does not say if it believes that it will continue to provide monopoly distribution utility services under competition.

customers leaving the system. In fact, Edison's own customers have expressed a demand for cost-effective DSM programs.

Q: Will reliance on the TRC Test in the selection of DSM resources hurt the competitive position of the utility?

A: No. Bills are more important to customers than are rates. Bills, not rates, determine whether an industrial plant is competitive with others in its industry. Therefore, bills determine the competitive position of the utility.

Q: Do Edison's concerns about competition justify making minimization of rates its major planning objective?

A: No. The Company's outlook is clearly inconsistent with the interests of all customer classes and contrary to the economic interests of the region. Failure to acquire cost-effective DSM savings will needlessly raise total energy-service costs for both small, less-price-responsive customers and for large industrial customers alike. Reliance on the RIM Test to screen individual programs would have similarly detrimental effects by eliminating many efficiency measures that reduce total energy-service costs.

Edison proposes to repudiate not just its DSM spending plans, but its fundamental obligation to provide energy services at least cost. Least-cost planning dictates that the Company select DSM resources whenever they are less expensive than the supply alternatives for meeting customer demand. In contrast, a rate-minimization strategy would reject the low-cost DSM resource in favor of the more-expensive supply, if DSM raised rates more than supply.

Q: How can economical DSM raise rates more than the supply alternative?

A: Utility expenditures, whether on DSM or supply resource, directly increase revenue requirements and rates. However, unlike supply, many DSM measures

reduce sales.[7] This reduction in sales further increases rates because the sunk costs of the existing system are spread over a smaller sales base; reduced revenues from program participants translates into higher rates for all customers. This revenue loss is not an economic cost—total revenue requirements are unaffected—but a redistribution of the burden of sunk costs.

The effect of DSM lost revenues is illustrated in Exhibit I-____ (PLC-2). If DSM costs 3¢/kWh and supply costs 4¢/kWh (Columns A and B), the increase in revenue requirements to serve additional load are 25% lower with DSM than with supply. In contrast, rates with DSM increase 0.4%, while rates with supply *decrease* only 0.4%.[8]

Exhibit I-____ (PLC-2) also illustrates how seriously the RIM Test and Edison's pursuit of rate minimization would frustrate least-cost planning objectives. Assuming the same level of DSM savings at no cost to the utility, revenue requirements will be 0.6% lower when selecting DSM over the more-expensive supply. However, since rates with DSM exceed rates with supply, the RIM Test would reject the no-cost DSM, in favor of supply.

Q: Who might gain from the Company's strategy?

A: Benefits would primarily accrue to large industrial customers who are unwilling or unable to reduce energy-service costs through DSM program participation. These are the only customers who (1) have the capability to seek

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[7] This is the direct effect. By increasing discretionary income and reducing the costs of doing business, energy efficiency may result in increased economic activity, industrial production, and electricity sales in Edison's service territory.

[8] In addition to generating supply, DSM avoids investments in reserves and load-related upgrades to the transmission and distribution system. In this example, "supply cost" can be considered to include costs for all avoided components.

out lower-priced alternatives to Edison's electricity and (2) might find it advantageous to do so.

In essence, the Company would impose real economic losses on captive ratepayers, and on the vast majority of large customers who could benefit from higher energy efficiency, for the sake of avoiding any DSM costs for the subset of large industrials who might not participate in DSM programs. These hypothetical non-participating industrials could see their rates and bills decrease, as long as the reduction in lost revenues from the discarded DSM exceeds the increase in costs from replacing DSM with more expensive supply. In this case, a small cost reduction for a few industrials' gain would create real economic loss for other industrials and for the system as a whole.

Q: Would captive customers face higher rates and bills if industrial load is lost, for any reason?

A: Probably. The rate effect will depend on how stranded investment costs are shared between ratepayers and shareholders, the extent to which revenue losses from departing industrial load are offset by revenue gains from load growth on the system, and the costs of the avoided supply resources. As long as prices exceed the marginal cost of serving new load, load growth will moderate the rate effects from loss of industrial load.

Q: Must the Company choose either higher bills through abandonment of DSM or higher bills through loss of industrial load?

A: No. As discussed in detail in Section IV (pp. 20–29) below, there are a number of strategies that can be employed to minimize costs, retain existing load, and attract new load without sacrificing the economic benefits of DSM. In fact, these options include the use of DSM for reducing the cost of doing business in the Company's service territory.

Q: Besides cost savings, are other benefits sacrificed under least-rates planning?

A: Yes. In addition to reducing direct costs to ratepayers, DSM can also reduce cost uncertainty, reduce environmental impacts, and create jobs. Although not explicitly reflected in revenue requirements, these are tangible benefits that improve the welfare of Edison's customers, including large industrials, and the attractiveness of the service territory.

DSM's risk-mitigating, environmental, and employment benefits have been extensively documented.[9]

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[9]For a survey of analyses of the risk-mitigating benefits of DSM, see Chernick, Paul. 1993. "Risk and Other Nonprice Factors in Valuing DM," *From Here to Efficiency: Securing Demand-Management Resources* 5:99–138. Harrisburg, Penn.: Pennsylvania Energy Office. In addition, see Xenergy, Inc. 1994. "Exploration of Diversity and DSM Flexibility in Integrated Resource Planning" ORNL/41X-03373V. Oak Ridge, Tenn.: Oak Ridge national Laboratory. For a detailed discussion of the environmental benefits of DSM, see (1) Ottinger, Richard, et al. 1990. *Environmental Costs of Electricity*. Dobbs Ferry, New York: Oceana. (2) Vine, Edward, Drury Crawley, and Paul Centolella (Eds.). 1991. *Energy Efficiency and the Environment: Forging the Link*. Washington: American Council for an Energy Efficient Economy. There have been numerous analyses of the job-creation benefits of DSM. These include (1) Laitner, Skip, John DeCicco, Neal Elliot, Howard Geller, and Marshall Goldberg. 1994. "Energy Efficiency as an Investment in Ohio's Economic Future." Columbus, Ohio: Campaign for an Energy-Efficient Ohio. (2) Jaccard, Mark, and David Sims. 1991. "Employment Effects of Electricity Conservation: The Case of British Columbia" *Energy Studies Review* 3(1):35–44. (3) Geller, Howard, John DeCicco, and Skip Laitner. 1992. "Energy Efficiency and Job Creation: The Employment and Income benefits from Investing in Energy-Conserving Technologies." Washington: American Council for an Energy Efficient Economy. (4). Tennis, Michael, Ian Goodman, and Matthew Clark. "Employment Impacts of New York State Energy Options." Boston: The Goodman Group. A study of the employment impacts of DSM in Michigan is forthcoming from ACEEE.

Q: How have commissions in other states responded to proposed DSM cutbacks due to competitiveness concerns?

A: Several utilities have proposed cutbacks explicitly due to *rate* concerns, without necessarily specifying what the underlying concerns are. It is thus difficult to determine whether competitiveness is a motivating factor.

In many of these cases, like Edison's, the utilities have faced surplus capacity, low avoided costs, and depressed regional economies. Most of those utilities with substantial DSM budgets that have recently reduced DSM spending have nonetheless maintained spending levels much higher than the budget that Edison is proposing to eliminate.

Commissions in New York and Oregon have reaffirmed their commitment to DSM and broader least-cost planning goals in the face of proposed cutbacks. The New York Public Service Commission rejected DSM cutbacks proposed by the Long Island Lighting Company, which expressed competitiveness concerns. The Commission based its decision on its staff's finding that "substantial value will be lost to customers, in terms of bill savings and net resource savings, if all of the proposed program reductions are carried out" (New York PSC Case 93-E-1045, Staff Memorandum at 16). The staff of the Oregon Public Utilities Commission recommended in a draft decision denial of PacifiCorp's proposal to restrict DSM rate impacts, citing the utility's continuing obligation to minimize total resource costs.

> [T]he Commission has not wavered in the least-cost planning principles adopted by Order No. 89-507 and restated in Order No. 93-206: Minimizing total resource cost is the key standard by which to assess alternative resource acquisitions. Minimizing rates is a secondary consideration. (Oregon PUC Staff Proposed Order Regarding PacifiCorp's Third Resource and Market Planning Program [October 18 1994] at 17)

In addition, the Connecticut Department of Public Utility Control has reaffirmed its commitment to DSM in a generic inquiry on retail wheeling. The DPUC asserted that its "commitment to cost effective conservation will not wane" (Connecticut DPUC, Draft Decision in Docket No. 93-09-29, at 52). The Department also noted the load-retention and load-building attributes of DSM:

> In a narrow sense, conservation lowers load but the primary purpose of much of the current conservation expenditures are to retain load and attract new business.... UI has recognized the importance of customer service and has aggressively pursued conservation despite or perhaps because of its high retail rates. Such emphasis on customer service should increase with competition. (Connecticut DPUC at 53)

IV. Competitive DSM Strategies

Q: Has the Company presented a credible characterization of emerging competitive forces at the retail level?

A: No. The Company's discussion of emerging competitive forces is limited to a recital of legislative and regulatory actions that are changing the landscape of wholesale competition; glancing reference to Michigan's retail-wheeling experiment and California's recently approved guidelines; and a discussion of recent municipalization developments in its service territory and anecdotes about cogeneration in Consumers Power's territory.

Contrary to the Company's vague assertions, competition is nothing new. Utilities routinely compete in wholesale markets for off-system sales and purchases, against both other utilities and independent power producers. Utilities have also faced competitive pressure at the retail level for many years, with the ever-present threat of self-generation or relocation by their large

customers. Utilities also actively compete for retail load by offering economic development rates and other incentives for industrial facility construction or expansion.[10]

In addition, the Company's concerns about changes in retail competition in Michigan may be premature and unwarranted. The Commission has made it clear that its decision to experiment with retail wheeling does not pre-ordain its permanence in this state:

> The Commission emphasizes that the purpose of conducting a limited experiment is to gather and evaluate information that would inform future deliberations concerning whether retail wheeling is ultimately in the public interest and whether it should be included as an element of retail competition on a permanent basis. Today's decision does not find, or attempt to foreshadow a finding, that a large-scale, permanent program of retail wheeling will be in the public interest. (Michigan PUC Order in Case U-10143 and U-10176 at 29)

More critically, the Commission has repeatedly reaffirmed its commitment to least-cost planning and DSM in light of emerging competitive forces in its Order in Case U-10574.

Finally, the Company's argument for a least-rates, not least-cost, strategy fails to consider that competition may be on the basis of more than just commodity price.[11] Instead, customers may be looking for a bundle of services

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[10]What has changed in the nature of competitive pressures is an apparently renewed vigor on the part of large industrials to wield the threat of leaving the system to extract price concessions.

[11]Indeed, a New Hampshire company is planning to compete for Public Service Company of New Hampshire's industrial load by offering a bundle of power-supply and efficiency services, and believes that PSNH's lack of DSM makes PSNH more vulnerable to competition. Northeast Power Report. 1994. "N.H. Lawyer Wants to Become a Utility Underselling PSNH," *Northeast Power Report* (September 2, 1994):1–2.

that provide reliable power at minimum costs with minimum cost uncertainty. These services could include

- enhanced or guaranteed reliability levels;
- power-quality services for increased power factor and reduced harmonic distortion;
- detailed end-use load data for load management and real-time pricing;
- increased energy-service efficiency, including DSM, end-use renewables, cogeneration services, and backup power;
- contract pricing that minimizes price volatility.[12]

Competition should spur increased attention to development of services that increase customer value, not necessarily price:

> Increased competition holds the potential for breeding numerous innovations in consumer services, products, and packaging. Competition for customers may spur the development of value-added bundling of services and product features that are tailored more closely to the needs of particular consumer segments. (Connecticut DPUC Draft Decision in Docket No. 93-09-29 at 42)

Q: Does the Company recognize that a least-rates strategy would not be competitive?

A: Edison has misgivings about competing solely on the basis of rates, based on what Edison's own customers said in "focus groups, surveys, and roundtable

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[12]Pennsylvania Electric Company has taken this concept one step forward by offering a full array of technical services to help firms modernize and expand. In addition to assistance with efficiency upgrades, these services include plant operations reviews, assistance with environmental compliance, product testing of manufacturing methods, and accounting and marketing assistance. Tremel, Charles. 1993. "Customer Partnerships: The Magic of Succesful Industrial DSM," *Proceedings: Sixth Annual Demand-Side Management Conference: Making a Difference* 165–173. Palo Alto, Cal.: Electric Power Research Institute.

discussions" (Wrenbeck at 9). Consequently, Edison proposes to exempt 33 DSM measures from the least-rates RIM screening test specifically to "provide value" to Edison's services. Ultimately, however, the Company does not reject the least-rates criterion; Edison merely asks for the freedom to ignore that criterion when it chooses. The Company would still use the RIM to exclude those cost-effective DSM measures that it doesn't like.

Q: How does the Company propose to select those DSM measures that would be exempt from the RIM test?

A: Edison names the 33 DSM measures that it would offer in spite of the fact that they fail the RIM; it does not explain how it selected them. The Company may have used the results of "focus groups, surveys, and roundtable discussions" to select these programs. However, even if this is so, Edison does not explain how these results influenced its decisions, by what methods it obtained these results and with what survey instruments, or specifically what customers actually said.[13]

Q: Is the Company's assessment of DSM's role in a competitive retail market reasonable?

A: The Company's speculations on the role of DSM are flawed in three respects. The least-rates criterion is based on the assumption that least-cost planning and

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[13]The focus groups and other public-relations approaches may actually identify the least appropriate DSM measures, since customers are likely to respond positively to measures with which they are most familiar. These familiar measures generally face lower market barriers than more comprehensive and less widely understood options. Hence, relying on public opinion polls would tend to lead Edison to measures that least require utility incentives, carry the highest rates of free ridership, and deliver only mediocre system power benefits.

DSM are fundamentally in conflict with competition, and therefore have no role in a future competitive market.[14] This view of least-cost planning's untimely demise is inconsistent with many of the retail competition scenarios currently under consideration throughout the industry. These scenarios assume a continued monopoly on distribution services with attendant cost-of-service regulation and least-cost planning obligations.

Since market barriers to customer adoption of DSM would persist in a competitive world, distribution utilities would continue to seek to minimize total costs by offering DSM programs tied to distribution service. Demand-side-management costs would be recovered from all customers through distribution charges, regardless of the customer's source of generation.[15] Priced in this fashion, DSM would no longer be a significant factor in retail

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[14]Interestingly, this does not seem to be the general conclusion regarding gas utilities, who have long faced as much competition (from other fuels and from transportation) as electric utilities are likely to face in the foreseeable future, and face even more competition in the wake of FERC Order 636. Many gas utilities (e.g., in Massachusetts, California, Maryland, and Wisconsin) have run extensive DSM programs for several years, and other states (e.g., New York, Connecticut, Minnesota) are moving to expand gas DSM even as competition has increased. Even Consumers Power is starting a small gas-conservation program.

[15]Alternatively, customers who do not participate would not be credited for any avoided-cost savings from DSM. The implications of such a system are explored by Frame, Rodney. 1993. "Characteristics of a 'Good' Retail Wheeling System." Paper presented to the Electric Utility Business Conference in Denver, Colorado. Washington: National Economic Research Associates, Inc.

competition; DSM costs could not be avoided simply by seeking out alternative sources of generation.[16]

Second, as noted above, the least-rates strategy does not account for the competitive value of DSM as part of a bundle of pricing, reliability, and efficiency services. As discussed below, DSM can be and has been used to assist firms in economic distress and to generally improve the attractiveness of the service territory to new business. Edison's remedy for this defect is to substitute its subjective judgment about how much "value" a particular DSM measure adds to its services in place of straightforward measurements of economic benefits.

Third, Edison has not demonstrated that DSM is a major contributor to price levels. The Company's proposal to abandon DSM and increase energy-service costs is likely to reduce rates little, if at all, compared to alternative cost-cutting measures that provide real economic gains.

Finally, the Company has not offered any evidence that its rates are uncompetitive. Edison has no basis for claiming that DSM will be a major factor in price competition.

Q: How can Edison position itself to thrive in a competitive market?

A: There are several actions the Company can take to enhance its competitiveness and improve the viability of its customers' businesses. First, the Company should revise its perspective on competition. Rather than viewing all competition as a threat to its continued survival, Edison should approach

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[16]Such a pricing regime is discussed in Hogan, William. 1994. "A Competitive Electricity Market Model." Cambridge, Mass.: John F. Kennedy School of Government Center for Business and Government.

competition as an opportunity to develop new profit centers while strengthening relationships with its customers. The former perspective leads to a defensive posture, where the Company fails to position itself to profit from changes. The latter approach could include the provision of a broad array of (profitable) services for maintaining existing customers and attracting new load.

The Company should be identifying business opportunities in each market niche and developing robust and flexible business strategies for profitably servicing these markets. In addition, Edison should be taking advantage of all opportunities to reduce short-and long-term system costs, to minimize cost uncertainty, and improve system reliability.

Q: What strategies might Edison undertake to protect shareholders and any customers who are not able to take advantage of retail competition?

A: It is difficult to be very specific about responses to competition, since Edison is vague about the nature of the competitive threat. However, I can identify several approaches that would benefit customers and help protect the Company from potential competition.

First, Edison can increase the attractiveness of its product, by reducing the amount of electricity needed to provide a particular service, increasing power quality (protecting valuable equipment), increasing the reliability of energy delivery, improving the quality of energy service (improved quality of lighting, better temperature and humidity control, etc.), and reducing discretionary spending throughout the Company. In addition, the Company should consider writing down any investment in uneconomic plant and buying out or renegotiating uneconomic purchase contracts. Edison should also

evaluate the cost-effectiveness of continued operation of aging plants in need of significant maintenance or environmental-compliance expenditures.

Second, Edison can reduce the volatility in its costs (and hence in its customers' rates and bills) and maintain the reliability of power supply. Most customers will prefer predictable, stable electric bills. The Company can pursue this goal by

- moving away from its riskier supply resources, such as nuclear and older fossil units;
- reducing environmental risks by anticipating requirements, building capability to procure DSM and renewables, and reducing utilization of polluting resources;
- reducing planning risks by investing in short lead-time renewable and distributed generation, and DSM; minimizing fluctuations in load growth with DSM, especially market-driven lost-opportunity options (which Edison has virtually ignored);
- using long-term contracts, options, and other hedges to minimize fuel-price volatility.

Third, Edison can prepare itself to react to changes in its operating environment (new environmental regulations, fuel-price spikes, loss of capacity) by creating contingency resources for cost management (which requires resources that supply significant amount of energy at prices that are not tied to the Company's other supplies), as well as reliability. Retrofit DSM, distributed generation, renewable generation, and high-efficiency cogeneration can provide fully diversified contingency resources, while options on existing and new conventional generation can provide insurance against some outcomes.

Fourth, the Company can concentrate on new resource options tied to the distribution system and recoverable through distribution charges. This category would include DSM and distributed generation.

Q: What role can DSM play in keeping Edison's large customers on its system?

A: A comprehensive industrial conservation program will reduce the cost of doing business in Edison's service territory, keeping customers viable and attracting new loads. Furthermore, Edison can leverage the DSM program to support economic development, for example, by

- Targeting early DSM treatment at vulnerable facilities, or at those that agree to expand employment;
- Tying utility-funding of DSM to a multi-year commitment by the customer to remain on system.

Demand-side management has been used by utilities as an effective marketing tool for attracting or retaining industrial load. For example, Boston Edison Company's Energy Efficiency Partnership program saved a Sealtest ice-cream plant and 180 jobs from likely elimination. A company spokesperson credited energy savings paid for by Boston Edison with giving the plant "a major competitive edge."[17]

Northeast Utilities has had numerous successes retaining load by improving the competitiveness of its large customers. One of NU's success stories involves Fortune Plastics, a plastics manufacturing plant. Located in Connecticut and Tennessee, Fortune had been shifting production to Tennessee

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[17]Boston Globe. 1991 "At Sealtest, Sweet Smell Of Success With Energy," *Boston Globe* (October 9, 1991):39.

to lower its operating costs. By taking advantage of the DSM services offered by NU's retail subsidiary, Connecticut Light and Power, Fortune was able to decrease energy costs by 17% and to maintain, and possibly expand, operations in Connecticut. According to Fortune Plastics President John Duhlig,

> This package allows our Tennessee and Old Saybrook [Connecticut] plants to operate on a much more equal footing. While electric rates will continue to be lower in Tennessee, our Old Saybrook operations will be made so much more efficient that the energy costs of the two facilities will be roughly similar.
>
> Now, instead of transferring the manufacturing capacity of our Old Saybrook plant to Tennessee, we're considering expanding our operations here because this plant is so much more efficient.[18]

Northeast Utilities' successes in improving efficiency at its customers' facilities provide tangible benefits beyond retaining load, jobs, and the local tax base. The lighting, motor, and process upgrades installed as a result of participation in NU's industrial program reduce water consumption, improve working conditions, and mitigate environmental hazards.

V. Rate Effects and the RIM Test

Q: What is the appropriate test of the cost-effectiveness of utility DSM options?

A: Utilities are publicly regulated entities with fundamental obligations to maximize benefits to their customers and to the wider community that constitutes the public interest. The purpose of utility DSM programs, like that

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[18]Quoted in Connecticut Light and Power. Undated. "Incentives Spell Good Fortune: Fortune Plastics, Inc., Old Saybrook, Connecticut." Hartford, Conn.: Northeast Utilities.

of many other utility activities (supply acquisition, the design of distribution systems, rate design), is to maximize the net value of the energy services that the utility normally provides, or (almost equivalently) to minimize the costs of providing service. Hence, the basic test of cost effectiveness is a measure of total costs.

Q: What role should the Ratepayer Impact Measure Test have in determining the cost-effectiveness of a demand-side option?

A: It should have no role in the economic screening of demand-side programs or the technologies incorporated in such programs. Screening with the RIM will lead to the rejection of economical DSM.[19]

Q: How does use of the RIM Test lead utilities to reject cost-effective DSM?

A: Demand-side management is cost-effective if its total benefits exceed its total costs under the Total Resource Cost Test. The present-value RIM Test is not a measure of total costs; nor is it a useful measure of equity or rate impact. The RIM Test varies from the TRC Test primarily in its treatment of the participant. Rather than including the participant's costs and benefits, along with those of all other customers, the RIM treats participant impacts as if they were of no concern to the utility or the Commission. The RIM ignores

- the costs the participant incurs in participating in the program,
- the benefit to the participant from any rebate or other incentives,
- the benefit to the participant of reduced bills.

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[19]In addition, setting incentives based on the RIM Test will result in unnecessarily low participation, excessive administrative costs per installation, and the loss of cost-effective DSM.

The treatment of the latter two items is particularly inconsistent, since the RIM includes both the incentives and lost revenues as costs.

Revenue shifts involve a loss to one group of customers, but a gain to another. The RIM effectively adds the losses to the costs of DSM (subtracts them from its benefits), but does not account for the gain. Were this same principle applied to rate design, no rate would ever be decreased, because a rate change creates benefits for some customers but net costs to others.[20]

Q: Is the RIM Test a meaningful test of rate effects?

A: No. The RIM Test does not assess the rate effects of DSM among and within classes. The RIM looks at rate effects on a measure-by-measure or program-by-program basis, and estimates only the average system rate effect of a particular utility DSM program or measure. Estimating rate impacts of any one program is not meaningful, unless considered in the context of the number of participants in that program, the number of participants in other DSM programs, and the pattern of cost recovery between classes and over time.

The RIM Test may screen out programs and measures vital for the economic health of the state. A measure that fails the RIM might be the one that saves an industry in Edison's service territory. For example, an industrial-process design program may be the only program in which many industrial customers can participate.

The RIM Test also does not properly determine the pattern of rates and bills over time. A program failing the RIM Test may increase rates in the near term but reduce them in the long run, while a program passing the RIM may

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[20]Unlike DSM, rate design and cost allocation shift costs between customers without directly reducing total costs.

well raise rates in the near term. The RIM Test is typically calculated using estimates of avoided costs as a measure of the reduction in revenue requirements from DSM. Avoided costs are usually estimated on the deferral basis, which states avoided capacity costs as the change in the present value of costs due to a year's delay in construction. Avoided costs computed in this way will start low and rise with inflation. Revenue requirements and rate effects will actually be determined by the Commission's ratemaking procedures, which allow recovery of a return (and associated income taxes) on the unamortized investment. Ratemaking costs start at a high level, and decline over time, as the initial investment is depreciated. Thus, avoided costs will usually understate DSM's effect on reducing revenue requirements in the early years, when rate effects are most likely to be most pronounced.

Q: Do utilities apply the equivalent of the RIM Test to decisions other than DSM?

A: No. A wide range of utility actions have rate implications. As noted above, rate design and cost allocation would be impossible if utilities refused to increase bills to some customers. Neither rate design nor cost allocation are generally reviewed with the RIM Test.[21] The RIM Test, for example, would indicate that utilities could reduce rates by requiring customers to purchase their own services and meters, and, for larger customers, transformers and secondary lines. This change in policy would pass the RIM Test, but probably increase total energy service costs; utilities recognize that such a change would be

[21]Applying the RIM Test to rate design would result in incentives to increase usage (such as declining block rates, requiring master-metering, providing rebates for wasteful energy usage) so long as marginal costs were less than average rates (including customer charges), even if marginal costs were greater than marginal rates.

counter-productive, since customers ultimately care about energy-service costs, not rates.

Any supply-acquisition decision will affect the pattern of rates and bills over time and the allocation of costs to rate classes. Edison, like other utilities, does not simply stop building power plants because they make some customers better off, and others worse off, than they would have been otherwise. Rate impacts and equity considerations are not usually considered in selecting supply resources; where these factors are considered at all, they are secondary concerns, and do not dominate resource selection. The utility should design a resource plan that minimizes total costs, *then* decide how to allocate costs and benefits between and among customer classes: this principle should apply to DSM and supply alike.

Q: Does primary reliance on the TRC Test for screening DSM options mean that the ratepayer impacts should be ignored?

A: Not at all. The effects of the DSM and supply options on rates and bills should be determined for each customer class annually, but only after an initial DSM portfolio is constructed.

Q: How should the utility determine whether rate or bill effects are excessive?

A: There is no simple answer to this question. Acceptable levels of rate increases due to DSM depend on

- the starting level of rates,
- base-case rate increases without DSM,
- the distribution of DSM offerings (what percentage of customers can participate),
- the distribution of DSM savings (such as the percentage of customers with declining bills),

- provisions to aid vulnerable customers (at-risk businesses, low-income),
- the average level of customer bills.

Q: If DSM results in rates higher than they might be otherwise, does this imply that the rates are excessive, or that they endanger the state or regional economy or the competitive position of the utility?

A: No. The economic attractiveness of the state for business, and the disposable income of households, depends on bills, not rates. As long as DSM is cost-effective, it will decrease the costs of energy services, and bolster the local economy.[22] Whether a difference in rates between the base case and an aggressive DSM plan is a matter for concern depends on how much average bills are reduced, how widely the benefits of DSM are distributed, how rates would otherwise be moving, and how much risk is reduced, as well as the magnitude of the rate difference.

Q: If the portfolio as a whole fails the RIM Test, should the DSM plan be rejected?

A: No. The fact that the portfolio fails the RIM Test does not imply that rate effects are distributed unfairly, or that rate increases are too large compared to bill reductions. Equity problems should be addressed by changing cost-recovery patterns, altering the allocation of expenditures among and within rate classes, increasing the penetration of programs to groups that would otherwise face higher bills, and changing the timing of particular programs. A DSM plan should not be rejected because it fails the RIM Test.

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[22]This general relationship is in addition to the positive direct employment effects of DSM.

VI. Conclusions and Recommendations

Q: Please summarize your conclusions.

A: The Company's estimated energy costs for 1995 are appropriately based on the DSM-acquisition plan that Edison recommended in its 1994 IRP. However, the Company, in Case No. U-10671, has signaled its intent to abandon its IRP, incurring unnecessary costs avoidable by cost-effective DSM that Edison has identified. If the Company implements its proposed revisions in 1995, actual energy costs will be needlessly increased over levels estimated in the instant proceeding.

The Company's five-year plan is based on its IRP Recommended Plan, not on its latest DSM proposal. After 1996, however, the Recommended Plan also abandons least-cost principles: Edison, in its IRP, identifies 2,448 GWh in cost-effective DSM savings that the Company would *not* acquire during the period 1997–2008. These are savings that would cost the Company and its customer less than the avoided supply. Since the Company's five-year plan is based on its IRP, years 1997–1999 of the five-year plan entail forgoing cost-effective DSM, wasting consumers' money.

Edison has failed to provide reasonable justification for abandoning cost-effective DSM. The Company's implied arguments regarding the connection of DSM to rate effects and competition are neither completely stated nor adequately supported. Where the Company's concerns may have some merit, it has not examined other alternatives for addressing them. The Company has simply prescribed termination of cost-effective DSM as the panacea for all its potential future ills, real or imagined.

Competition is nothing new to electric utilities. The existence of competition does not excuse utilities from pursuing least-cost-planning objectives.

The TRC Test remains the appropriate test for screening DSM; the Company's proposal to adopt the RIM Test as its primary screening test will lead to significant loss of cost-effective savings without materially improving (and perhaps impairing) its competitive position. The results of screening DSM with the RIM are of course improved by the Company's willingness to make arbitrary exceptions and include some cost-effective—but RIM-failing—DSM. However, such an ad-hoc DSM regime is still vastly inferior to, and not an acceptable substitute for, true integrated resource planning.

Q: What are your recommendations regarding the issues before the Commission in this docket?

A: In approving the Company's PSCR factors for 1995, the Commission should expressly note that those factors are based on the DSM spending levels set forth in the Company's 1994 IRP. The Commission should remind the Company that energy costs incurred as a consequence of not following the IRP will not be allowed at reconciliation. At that time, the Commission will be able to determine whether the Company has incurred such excess costs, and their size, by calculating the energy savings and attendant power-supply costs that the Company could have achieved by following its IRP and comparing the results with the Company's reconciled energy savings and power-supply costs.

The Commission should furthermore reject the Company's proposed five-year plan. The Commission should remind Edison that the reason why the Commission did not order specific levels of DSM spending after 1996 was to allow lessons learned from the 1994–96 DSM programs to inform program design, goals, and budgets after that time (Order in Case No. U-10102 at 153). Until Edison has the benefit of such experience, it should submit truly least-cost five-year plans based on current assumptions regarding DSM cost and

performance. The Commission should require the Company to submit a new five-year plan on that basis.

Finally, the Commission should take this opportunity again to reject the RIM Test for DSM screening. The Commission should similarly reject the Company's plan to second-guess the TRC's measurement of economic net benefits with its own subjective, ad-hoc screening process.

Q: Does this conclude your testimony?

A: Yes.

Exhibit I-____ (PLC-2)
Case No. 10702
Illustration of Rate Impacts and Revenue Requirements of Demand and Supply

	New Resource Options		
	Additional Supply at 4¢/kWh	Additional DSM at 3¢/kWh	Additional zero-cost DSM
Initial Sales (GWh) [A]	30,000	30,000	30,000
New Resource Requirement (GWh) [B]	300	300	300
New DSM (GWh) [C]		300	300
Final Sales (GWh) [D]	30,300	30,000	30,000
Initial Revenue Requirement (M$) [E]	2,000	2,000	2,000
New Resource Revenue Requirements (M$) [F]	12	9	0
Final Revenue Requirement (M$) [G]	2,012	2,009	2,000
Rates (¢/kWh) [H]	6.64	6.70	6.67

Row Notes:

[A]: Sales prior to load growth are the same under all options.

[B]: Without additional DSM, load would grow 1% in Year 2.

[C]: Additional DSM is assumed to cover all new load growth.

[D]: Equal to [A] + [B] - [C].

[E]: Revenue requirements prior to load growth and new resource selection are the same under all options.

[F]: Based on the new resource requirement (300 GWh) and on a cost of 4¢/kWh for Additional Supply and Additional DSM; Zero-Cost DSM is free.

[G]: Equal to [E] × [F].

[H]: Equal to [G] ÷ [D] × 100.