

**STATE OF MICHIGAN**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the matter of the Application of )**  
**THE DETROIT EDISON COMPANY for )**  
**approval of a Demand Side Management )**  
**surcharge for 1995. )**

**Case No. U-10671**

**DIRECT TESTIMONY OF**  
**PAUL CHERNICK**  
**ON BEHALF OF**  
**THE MICHIGAN UNITED CONSERVATION CLUBS**

**Resource Insight, Inc.**

**January 10, 1995**

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1    **I.    Identification and Qualifications**

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

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

5    **Q:**    Summarize your professional education and experience.

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

12           I was a Utility Analyst for the Massachusetts Attorney General for more  
13          than three years, and was involved in numerous aspects of utility rate design,  
14          costing, load forecasting, and the evaluation of power supply options. Since  
15          1981, I have been a consultant in utility regulation and planning: first as a  
16          Research Associate at Analysis and Inference, after 1986 as President of  
17          PLC, Inc., and since August 1990 in my current position at Resource Insight.  
18          In those capacities, I have advised a variety of clients on utility matters,  
19          including, among other things, the need for, cost of, and cost-effectiveness of  
20          prospective new generation plants and transmission lines; retrospective  
21          review of generation planning decisions; ratemaking for plant under  
22          construction; ratemaking for excess and/or uneconomical plant entering  
23          service; conservation program design; cost recovery for utility efficiency

1 programs; and the valuation of environmental externalities from energy  
2 production and use. My resume is attached as Exhibit I-\_\_\_\_ (PLC-1).

3 **Q: Have you testified previously in utility proceedings?**

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

16 **Q: Have you testified previously before this Commission?**

17 A: Yes. I testified before the Michigan PSC in Cases Nos. U-7775 and U-7785,  
18 on power plant performance standards. I also testified before the Commission  
19 in Case No. U-10102 on Detroit Edison's demand-management program, in  
20 Case No. U-10335 and Case No. U-10554, on Consumers Power's demand-  
21 management planning, non-residential program design, screening, avoided-  
22 cost calculations, and cost-recovery proposals, and in Case No. U-10702, on  
23 Detroit Edison's proposed PSCR plan for 1995.

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

1 A: Yes. I have been involved in utility planning issues since 1978, including  
2 load forecasting, the economic evaluation of proposed and existing power  
3 plants, and the establishment of rate for qualifying facilities. Most recently, I  
4 have been a consultant to various energy conservation design collaboratives  
5 in New England, New York, and Maryland; to the Conservation Law  
6 Foundation's conservation design project in Jamaica; to CLF interventions in  
7 a number of New England rulemaking and adjudicatory proceedings; to the  
8 Boston Gas Company on avoided costs and conservation program design; to  
9 the City of Chicago in reviewing the Least Cost Plan of Commonwealth  
10 Edison; to the South Carolina Consumer Advocate on least-cost planning; to  
11 environmental groups in North Carolina, Florida, Ohio and Michigan on  
12 DSM planning; and to several parties on incorporating externalities in utility  
13 planning and resource acquisition. I also assisted the DC PSC in drafting  
14 order 8974 in Formal Case 834 Phase II, which established least-cost  
15 planning requirements for the electric and gas utilities serving the District.

## 16 **II. Introduction and Summary**

17 **Q: On whose behalf are you testifying?**

18 A: I am testifying on behalf of the Michigan United Conservation Clubs.

19 **Q: What is the purpose of your testimony?**

20 A: The purpose of my testimony is to assess the Detroit Edison Company's  
21 proposal to overhaul its DSM acquisition strategy as presented in the direct  
22 testimonies of Joseph Welch and Thomas Wrenbeck.

23 **Q: Please describe the Company's DSM proposal**

1 A: Detroit Edison, citing "marketplace changes in the electric utility industry"  
2 (Welch Direct at 6), proposes to abandon cost-effective DSM spending plans  
3 for 1995 generated through its least-cost-planning process and described in  
4 its 1994 Integrated Resource Plan.<sup>1</sup> Instead, the Company (Wrenbeck Direct  
5 at 5, 9, 10, and Exhibit THW-2) would fund only the following in its main  
6 DSM budget:

- 7 • Demand-side management that passes the Rate Impact Measure (RIM)  
8 Test,
- 9 • Thirty-three measures that the Company has determined "add value for  
10 our customers" even though they fail the RIM Test, and
- 11 • unspecified "energy audits, education, [and] information."

12 The Company also intends to provide the following in 1995:

- 13 • a residential low-income DSM program to satisfy the MPSC Order in  
14 Case No. U-10297,
- 15 • various unspecified DSM projects for select customers under special  
16 manufacturing contracts (Welch at 9).<sup>2</sup>

17 In addition, the Company proposes to eliminate the cost-recovery and  
18 shareholder-incentive mechanisms from its DSM programs, and would prefer  
19 to allocate all DSM costs by customer class.

20 **Q: Please summarize your evaluation of the Company's proposal.**

21 A: The Company's DSM funding proposal is without merit.

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<sup>1</sup> The Company does not specify its plans for years after 1995.

<sup>2</sup> The Company has proposed these contracts in Case No. U-10646.

- 1       • In response to some ill-defined threat of retail competition, and without  
2       any analytical basis, Edison proposes wholesale abandonment of its  
3       obligation to provide least-cost energy services to its customers. The  
4       Company has apparently concluded that the only feasible response to  
5       competition is to forego DSM efforts that can provide cost,  
6       environmental, risk-reduction, and employment benefits to all  
7       ratepayers.
- 8       • The Company's proposal to eliminate or severely scale back its DSM  
9       efforts is ill-advised, given strong evidence of significant potential for  
10      additional cost-effective savings.
- 11      • If implemented, the plan would entail unnecessary customer costs,  
12      including energy costs; harm Michigan's economy; and impair the  
13      Company's competitiveness.
- 14      • The Company both exaggerates and misapprehends the competitive  
15      threat that may lie in its future. Detroit Edison's strongest response to  
16      competition would be to offer its customers the lowest energy *costs*, and  
17      its ability to do so will be hampered by its unjustifiable fixation on  
18      offering lowest energy *rates*.
- 19      • The Company is correct that DSM "adds value" to the services it  
20      provides, and thus has the potential to improve the Company's compe-  
21      titive position. Edison undermines its competitiveness when it substi-  
22      tutes its own arbitrary judgment for least-cost planning principles in the  
23      selection of "value"-adding DSM options in 1995. Edison's reliance on  
24      arbitrary judgment leads to the rejection of cost-effective DSM options  
25      that could further enhance its competitiveness.

- 1       • The correct yardstick of cost-effectiveness on both the demand and  
2       supply sides is that of least cost, not least rates.

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

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

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

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

15       Indeed, the only evidence that the Company offers in support of its  
16       DSM proposal—"numerous focus groups, surveys, and roundtable  
17       discussions conducted with...customers"—strongly support the opposite  
18       conclusion: that continued acquisition of cost-effective DSM will provide  
19       value to Edison's customers and consequently enhance Edison's  
20       competitiveness. According to Company Witness Wrenbeck (at 9),

21       [C]ustomers want Detroit Edison's assistance in controlling their electric  
22       usage. Methods to assist customers in controlling their electric usage  
23       include:

- 24       • Energy education and credible information on ways to reduce  
25       energy usage;
- 26       • Energy audits to identify and recommend energy efficiency  
27       improvements;



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

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

11                  The Company could learn a valuable lesson from its customer focus  
12                  groups and its negotiations with the Big Three: customers recognize that  
13                  viability depends in part on minimizing the cost of the energy-service input to  
14                  its production process, not necessarily the price of the electricity purchased.  
15                  In short, competitiveness depends on bills (or bills per unit of output), not  
16                  rates (or bills per kWh of input). Customer bills, in turn, depend on both rates  
17                  and the efficiency with which electricity is converted to provide energy  
18                  services.

19                  Even if DSM leads to higher rates, such rates should not impair the  
20                  competitive positions of industrial customers, or the economic attractiveness  
21                  of the service territory, if the DSM activities allow customers to reap  
22                  proportionately larger process-efficiency improvements. A well-designed  
23                  DSM portfolio can increase the attractiveness of the Company’s service  
24                  territory to its current and prospective new customers.<sup>3</sup>

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<sup>3</sup> Demand-side-management measures can also improve quality of service, product quality, and worker productivity.

1    **Q: Does the Company offer any rationale for its decision to abandon cost-**  
2       **effective DSM savings that do not pass the RIM Test?**

3    **A: According to the Company,**

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

9           Moreover, the Company asserts,

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

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

19   **A: No.** A wide range of utility actions have rate implications. Were this same  
20       principle applied to rate design, no rate would ever be decreased, because a  
21       rate change creates benefits for some customers but net costs to others.<sup>4</sup>  
22       Neither rate design nor cost allocation are generally reviewed with the RIM  
23       Test.<sup>5</sup> The RIM Test, for example, would indicate that utilities could reduce

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<sup>4</sup> Unlike DSM, rate design and cost allocation shift costs between customers without directly reducing total costs.

<sup>5</sup> 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.

1 rates by requiring customers to purchase their own services and meters, and,  
2 for larger customers, transformers and secondary lines. This change in policy  
3 would pass the RIM Test, but probably increase total energy service costs;  
4 utilities recognize that such a change would be counter-productive, since  
5 customers ultimately care about energy-service costs, not rates.

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

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

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

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

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

1 A: No. Selecting DSM options in this fashion will lead to the rejection of DSM  
2 options that cost less than their respective supply alternatives, whenever the  
3 DSM would increase rates over those associated with their supply options.  
4 The Company would apply this rule regardless of the magnitude or timing of  
5 the rate increase. The Company is thus proposing to abandon its fundamental  
6 obligation (and competitive opportunity) to minimize customer costs.

7 **Q: Is it true that Edison's plans to screen DSM with the RIM Test is consis-**  
8 **tent with the National Energy Policy Act?**

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

12 The term "integrated resource planning" means, in the case of an electric  
13 utility, a planning and selection process for new energy resources that  
14 evaluates the full range of alternative, including new generating capacity,  
15 power purchases, energy conservation and efficiency, cogeneration and  
16 district heating and cooling applications, and renewable energy resources,  
17 in order to provide adequate and reliable service to its electric customers  
18 at the *lowest system cost*. (Energy Policy Act of 1992 at 22; emphasis  
19 added<sup>6</sup>)

20 **Q: Will screening with the RIM lead to significant losses of cost-effective**  
21 **savings?**

22 A: Yes. For example, for 1995, Edison's 1994 IRP identifies 180 GWh of cost-  
23 effective DSM savings that the Company could acquire (under its "Reference

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<sup>6</sup> 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.

1 DSM Plus Maximum TRC" scenario).<sup>7</sup> By contrast, the IRP finds only 22  
2 GWh of savings under the "RIM Only" scenario.

3 By the end of the year 2008, according to the IRP, acquiring all TRC-  
4 passing DSM would save a total of 2,970 GWh—fifteen times the 194 GWh  
5 saved in the RIM-only scenario (Detroit Edison Company 1994 IRP Table  
6 4.1-2 at 27, Table D-1 at D1, Table D-3 at D2).

7 **Q: Have you estimated the revenue requirement and rate effects of the**  
8 **Company's proposal to cease further spending on DSM?**


9 **A:** No. Such estimates are beyond the scope of my testimony.

10 **Q: Please summarize your recommendations.**

11 **A:** The Commission should reject the Company's proposal to cut back DSM  
12 spending from levels authorized by the Commission in Case No. U-10102.  
13 The Company's proposal constitutes an unwarranted abandonment of its  
14 obligation to minimize ratepayers' costs.

15 In addition, the Commission should deny the Company's request to rely  
16 on the RIM as its primary screening test. The Commission should remind the  
17 Company of its decision in its January 21, 1994, order in Case No. U-10102  
18 (at 171–172) to use the Total Resource Cost Test to evaluate potential DSM  
19 measures. This decision is consistent with the least-cost-planning imperative  
20 to minimize costs, not just rates.

21 **Q: What are your recommendations for addressing concerns regarding the**  
22 **effect of DSM on Edison's competitive position?**



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<sup>7</sup> The IRP Recommended Plan that the company is now proposing to abandon is identical to the Maximum TRC Scenario through 1996.

1 A: The Commission should require Edison to undertake a systematic evaluation  
2 of the system-cost implications of its proposal within an integrated-resource-  
3 planning context. The Company should be reminded of its least-cost planning  
4 obligation

5 to use integrated resource planning principles to prevent current and  
6 future planning decisions from burdening future customers with  
7 unwarranted costs or unreliable energy systems. (Michigan PUC Order in  
8 Case No. U-10574 at 21)

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

13 In addition, Edison should be required to estimate the rate levels or  
14 increases that trigger competitive pressures, the rate effects of the Company's  
15 current DSM spending levels, and the effects of cost allocation and program  
16 delivery strategies for moderating DSM rate effects. The Company's analyses  
17 will need to consider the manner in which DSM costs are recovered in retail  
18 wheeling rates, as determined by the Commission in Cases Nos. U-10143  
19 and U-10176. The results of these analyses, and information gained from  
20 implementation of the retail-wheeling experiment, should inform the  
21 development of a comprehensive and effective strategy for DSM resource  
22 acquisition in competitive markets.

23 Finally, both the system cost and rate-impact analyses should be based  
24 on a comprehensive assessment of available strategies for reducing costs and  
25 improving competitiveness. The Company should evaluate the effectiveness  
26 of such strategies as

27 • corporate-wide reductions in discretionary spending,

- 1 • early retirement of aging plants in need of significant repairs or
- 2 environmental upgrades,
- 3 • write-down to market value of uneconomic assets,
- 4 • buy-outs or renegotiations of uneconomic purchase contracts, and
- 5 • innovative rate designs, including interruptible, time-of-use, and special
- 6 discounted rates.

7 **Q: What do you recommend with regard to the Company's cost allocation,**  
8 **lost revenue, and incentive proposals?**

9 **A:** Unless there is some reason to believe that allocation to the participants'  
10 class will significantly affect program participation or lead to inequitable rate  
11 effects, the Company should be allowed to allocate DSM program costs to  
12 participating classes. Even if allocation by class were not purely consistent  
13 with current supply-cost allocations, the potential for reducing inter-class  
14 conflicts over cost-effective DSM spending justifies the deviation.

15 If the Commission rejects the Company's proposal to stop its DSM  
16 investment, no action is necessary on the lost revenue and incentive  
17 mechanisms.<sup>8</sup> To the extent that the Company fails to implement a program  
18 of the scope approved by the Commission, Edison's shareholders should be  
19 penalized according to the penalty mechanism adopted by the Commission in  
20 Case No. U-10102 (at 163-166).

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<sup>8</sup> If the Company wishes to further reduce customer bills, it can forego recovery of any costs allowed by the current mechanism. The same is true for other costs, whether collected through the PSCR or through base rates.

1   **III. Edison's Proposed DSM Strategy**

2   **Q: What is the Company's proposed strategy for future DSM resource**  
3   **acquisition?**

4   **A: Detroit Edison, citing "marketplace changes in the electric utility industry"**  
5   **(Welch Direct in Case No. U-10671 at 6), proposes to abandon cost-effective**  
6   **DSM spending plans for 1995 generated through its least-cost-planning**  
7   **process and described in its 1994 Integrated Resource Plan.<sup>9</sup> Instead, the**  
8   **Company (Wrenbeck Direct in Case No. U-10671 at 5, 9, 10 and Exhibit**  
9   **THW-2) would fund only the following:**

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

14   The Company also intends to provide the following in 1995:

- 15   • a residential low-income DSM program to satisfy the MPSC Order in
- 16   Case No. U-10297,
- 17   • various unspecified DSM projects for select customers under special
- 18   manufacturing contracts (Welch at 9).<sup>10</sup>

19       In addition, the Company proposes to eliminate the cost-recovery and  
20   shareholder-incentive mechanisms, and to allocate all DSM costs by  
21   customer class.

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<sup>9</sup> The Company does not specify its plans for years after 1995.

<sup>10</sup> The Company has proposed these contracts in Case No. U-10646.



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

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

8 Edison names the 33 DSM measures that it would offer in spite of the  
9 fact that they fail the RIM; it does not explain how it selected them. The  
10 Company may have used the results of its surveys and focus groups to select  
11 these programs. However, even if this is so, Edison does not explain how  
12 these results influenced its decisions, by what methods it obtained these  
13 results and with what survey instruments, or specifically what customers  
14 actually said.<sup>11</sup>

15 The RIM-failing DSM measures selected by the Company all cost less  
16 than the supply they would replace (that is, they pass the TRC Test), but the  
17 Company rejected other similarly cost-effective measures that it identified in  
18 the IRP (Wrenbeck at Exhibits THW-2, THW-3).

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<sup>11</sup> 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.

1 **Q: What is the magnitude of cost-effective savings foregone by the**  
2 **Company's proposal?**

3 A: The Company's 1994 IRP (at 27, Table 4.1-2) identifies 2,970 GWh in cost-  
4 effective DSM savings that the Company could acquire during the period  
5 1994-2008. However, the Company's filing in this proceeding does not  
6 provide any estimate of the savings it actually proposes to acquire at any  
7 point.

8 **Q: Will this loss of savings be mitigated by implementation of RIM-passing**  
9 **programs?**

10 A: Probably not by very much. As discussed in more detail in Section VI (pages  
11 35-39), adoption of the RIM as the primary screening test will result in the  
12 rejection of cost-effective DSM. In fact, the Company has only identified two  
13 DSM measures that pass the RIM for 1995. It proposes to spend \$206,000  
14 implementing those measures, compared to the \$17.3 million of cost-  
15 effective savings identified for 1995 in the Company's IRP (Table D-3, at  
16 page D2) and to the \$14.9 million ordered in Case No. U-10102 (at 153). Winkler  
&

17 Even if it is possible to design efficiency programs that pass the RIM,  
18 the savings will likely be significantly less than achievable with a program  
19 designed to maximize total resource or utility net benefits. For example, in  
20 support of proposed DSM goals, the four largest electric utilities in Florida  
21 estimated savings for a portfolio of TRC-passing measures and a portfolio of  
22 RIM-passing measures. Aggregate energy savings for the RIM portfolios  
23 were 26% to 63% of the savings for the TRC portfolios. Since the TRC  
24 portfolios (especially for the utilities with the higher RIM-to-TRC ratios)  
25 were not designed to maximize TRC net benefits, savings from measures and MS  
↓

1 programs that would pass the RIM Test would likely be less than a quarter of  
2 the savings for an optimal TRC portfolio.

3 **Q: Will this loss of savings be mitigated by implementation of RIM-passing**  
4 **programs?**

5 A: The more cost-effective savings that Edison acquires, for whatever reason,  
6 the less savings it will lose. However, failure to acquire any cost-effective  
7 savings, for whatever reason, will entail more expensive supply and a net  
8 economic loss over what is possible.

9 In the instant proceeding, the Company proposes spending \$4.94  
10 million on its "1995 DSM Plan;" if its programs are well designed, this will  
11 acquire some savings, but not as much economic net benefit as is available.<sup>12</sup>  
12 The Company has no estimate of proposed spending levels after 1995.

13 **Q: Has Edison prepared any analyses of the cost or rate impacts of its**  
14 **proposed DSM overhaul?**

15 A: No.

16 **Q: What is the implication of Edison's failure to analyze cost and rate**  
17 **impacts?**

18 A: In the absence of such analyses, the Company appears to lack critical  
19 information on the magnitude or timing of the cost and rate effects associated  
20 with its proposed strategy. Thus, the Company has no basis for determining

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<sup>12</sup> 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" (Wrenbeck at 10). 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.

1       whether its proposed strategy would have the desired effect on rates to retain  
2       or attract industrial and municipal load, or for estimating the cost  
3       implications of this particular load-retention strategy.

4       **IV. Market Competition and Least-Cost Planning**

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

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

9               The Company has adopted its new and more rigorous policy with respect  
10              to DSM because of the accelerating trend toward increased competition  
11              in the electric utility industry and in recognition of the fact that the  
12              Company's rates, particularly for large industrial customers, have been  
13              high in comparison with the rates charged by other utilities to similarly  
14              situated customers and in comparison with the cost of alternative sources  
15              of energy available to such customers. (Detroit Edison Company  
16              Application for Modification of Opinion and Order in Case No. U-10102  
17              [August 15 1994] at 5).

18       **Q: Has the Company reasonably characterized emerging competitive pres-**  
19       **ures and its effect on market structures and services?**

20       **A:** No. The Company describes, in general terms, the factors that it contends are  
21       leading to competition, such as certain provisions of the National Energy  
22       Policy Act and Michigan's retail-wheeling experiment. Edison describes  
23       competition as a trend: it is "inexorable" and "rapidly emerging" (Welch at  
24       6); its "pace...has quickened" (10); it "has been recognized by the financial

1 rating agencies" (15); it is a "growing threat" (18). However, the Company  
2 does not describe how it believes competition will be structured.<sup>13</sup>

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

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

12 **A:** No. Edison has not conducted any studies regarding the effect of DSM costs  
13 on customers' ability to compete, or on the likelihood that customers will  
14 seek out alternative suppliers. Moreover, the Company has not performed any  
15 analyses to support the notion that reliance on the TRC tests will lead to  
16 customers leaving the system. In fact, Edison's own customers have  
17 expressed a demand for cost-effective DSM programs.

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

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<sup>13</sup> For instance, the Company does not say if it believes that it will continue to provide monopoly distribution utility services under competition; whether generation, transmission, and distribution will be spun off to separate companies; or whether stranded investment will be recovered through wheeling rates.

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

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

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

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

20 **Q: How can economical DSM raise rates compared to the supply**  
21 **alternative?**

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

1 measures reduce sales.<sup>14</sup> This reduction in sales further increases rates  
2 because the sunk costs of the existing system are spread over a smaller sales  
3 base; reduced revenues from program participants translates into higher rates  
4 for all customers. This revenue loss is not an economic cost—total revenue  
5 requirements are unaffected—but a redistribution of the burden of sunk costs.

6 The effect of DSM lost revenues is illustrated in Exhibit I-\_\_\_\_ (PLC-  
7 2). If DSM costs 3¢/kWh and supply costs 4¢/kWh (Columns A and B), the  
8 increase in revenue requirements to serve additional load are 25% lower with  
9 DSM than with supply. In contrast, rates with DSM increase 0.4%, while  
10 rates with supply *decrease* only 0.4%.<sup>15</sup>

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

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

18 A: Benefits would primarily accrue to customers who are unwilling or unable to  
19 reduce energy-service costs through DSM program participation. These are

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<sup>14</sup> 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.

<sup>15</sup> 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.

1 the only customers who are likely to be better off without effective DSM  
2 programs.

3 In essence, the Company would impose real economic losses on the vast  
4 majority of large and small customers who could benefit from higher energy  
5 efficiency, for the sake of avoiding any DSM costs for a small group that  
6 might not participate in DSM programs.

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

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

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

18 A: No. As discussed in detail in Section V (pp. 25–35) below, there are a  
19 number of strategies that can be employed to minimize costs, retain existing  
20 load, and attract new load without sacrificing the economic benefits of DSM.  
21 In fact, these options include the use of DSM for reducing the cost of doing  
22 business in the Company's service territory.

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



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

7 DSM's risk-mitigating, environmental, and employment benefits have  
8 been extensively documented.<sup>16</sup>

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<sup>16</sup> 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.

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

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

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

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

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

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

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

13 **V. Competitive DSM Strategies**

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

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

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

1 large customers. Utilities also actively compete for retail load by offering  
2 economic development rates and other incentives for industrial facility  
3 construction or expansion.<sup>17</sup>

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

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

16 More critically, the Commission has repeatedly reaffirmed its commit-  
17 ment to least-cost planning and DSM in light of emerging competitive forces  
18 in its Order in Case No. U-10574.

19 Finally, the Company's argument for a least-rates, not least-cost,  
20 strategy fails to consider that competition may be on the basis of more than  
21 just commodity price.<sup>18</sup> Instead, customers may be looking for a bundle of

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<sup>17</sup> 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.

<sup>18</sup> 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.

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

- 3 • enhanced or guaranteed reliability levels;
- 4 • power-quality services for increased power factor and reduced harmonic  
5 distortion;
- 6 • detailed end-use load data for load management and real-time pricing;
- 7 • increased energy-service efficiency, including DSM, end-use  
8 renewables, cogeneration services, and backup power;
- 9 • contract pricing that minimizes price volatility.<sup>19</sup>

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

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

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

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<sup>19</sup> 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 Successful Industrial DSM," *Proceedings: Sixth Annual Demand-Side Management Conference: Making a Difference* 165-173. Palo Alto, Cal.: Electric Power Research Institute.

1 A: Edison has misgivings about competing solely on the basis of rates, based on  
2 what Edison's own customers said in "focus groups, surveys, and roundtable  
3 discussions" (Wrenbeck at 9). Consequently, Edison proposes to exempt 33  
4 DSM measures from the least-rates RIM screening test specifically to  
5 "provide value" to Edison's services. Ultimately, however, the Company does  
6 not reject the least-rates criterion; Edison merely asks for the freedom to  
7 ignore that criterion when it chooses. The Company would still use the RIM  
8 to exclude those cost-effective DSM measures that it doesn't like.

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

11 A: The Company's speculations on the role of DSM are flawed in three respects.  
12 The least-rates criterion is based on the assumption that least-cost planning  
13 and DSM are fundamentally in conflict with competition, and therefore have  
14 no role in a future competitive market.<sup>20</sup> This view of least-cost planning's  
15 untimely demise is inconsistent with many of the retail competition scenarios  
16 currently under consideration throughout the industry. These scenarios  
17 assume a continued monopoly on distribution services with attendant cost-of-  
18 service regulation and least-cost planning obligations.

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<sup>20</sup> 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.

1           Since market barriers to customer adoption of DSM would persist in a  
2 competitive world, distribution utilities would continue to seek to minimize  
3 total costs by offering DSM programs tied to distribution service. Demand-  
4 side-management costs would be recovered from all customers through  
5 distribution charges, regardless of the customer's source of generation. Priced  
6 in this fashion, DSM would no longer be a significant factor in retail  
7 competition; DSM costs could not be avoided simply by seeking out  
8 alternative sources of generation.<sup>21</sup>

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

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

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

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<sup>21</sup> 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.

1 A: There are several actions the Company can take to enhance its competitive-  
2 ness and improve the viability of its customers' businesses. First, the  
3 Company should revise its perspective on competition. Rather than viewing  
4 all competition as a threat to its continued survival, Edison should approach  
5 competition as an opportunity to develop new profit centers while strengthen-  
6 ing relationships with its customers. The former perspective leads to a  
7 defensive posture, where the Company fails to position itself to profit from  
8 changes. The latter approach could include the provision of a broad array of  
9 (profitable) services for maintaining existing customers and attracting new  
10 load.

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

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

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

22 First, Edison can increase the attractiveness of its product, by reducing  
23 the amount of electricity needed to provide a particular service, increasing  
24 power quality (protecting valuable equipment), increasing the reliability of  
25 energy delivery, improving the quality of energy service (improved quality of  
26 lighting, better temperature and humidity control, etc.), and reducing



1 discretionary spending throughout the Company. In addition, the Company  
2 should consider writing down any investment in uneconomic plant (and buy-  
3 ing out or renegotiating uneconomic purchase contracts). Edison should also  
4 evaluate the cost-effectiveness of continued operation of aging plants in need  
5 of significant maintenance or environmental-compliance expenditures.

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

- 10 • moving away from its riskier supply resources, such as nuclear and  
11 older fossil units;
- 12 • reducing environmental risks by anticipating requirements, building  
13 capability to procure DSM and renewables, and reducing utilization of  
14 polluting resources;
- 15 • reducing planning risks by investing in short lead-time renewable and  
16 distributed generation, and DSM;
- 17 • minimizing fluctuations in load growth with DSM, especially market-  
18 driven lost-opportunity options;
- 19 • using long-term contracts, options, and other hedges to minimize fuel-  
20 price volatility.

21 Third, Edison can prepare itself to react to changes in its operating  
22 environment (new environmental regulations, fuel-price spikes, loss of capa-  
23 city) by creating contingency resources for cost management (which requires  
24 resources that supply significant amount of energy at prices that are not tied  
25 to the Company's other supplies), as well as reliability. Retrofit DSM, distri-  
26 buted generation, renewable generation, and high-efficiency cogeneration can

1 provide highly diversified contingency resources, while options on existing  
2 and new conventional generation can provide insurance against some  
3 outcomes.

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

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

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

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

17 Demand-side management has been used by utilities as an effective  
18 marketing tool for attracting or retaining industrial load. For example, Boston  
19 Edison Company's Energy Efficiency Partnership program saved a Sealtest  
20 ice-cream plant and 180 jobs from likely elimination. A company  
21 spokesperson credited energy savings paid for by Boston Edison with giving  
22 the plant "a major competitive edge."<sup>22</sup>

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<sup>22</sup> Boston Globe. 1991 "At Sealtest, Sweet Smell Of Success With Energy," *Boston Globe* (October 9, 1991):39.

1 Northeast Utilities has had numerous successes retaining load by  
2 improving the competitiveness of its large customers. One of NU's success  
3 stories involves Fortune Plastics, a plastics manufacturing plant. Located in  
4 Connecticut and Tennessee, Fortune had been shifting production to  
5 Tennessee to lower its operating costs. By taking advantage of the DSM  
6 services offered by NU's retail subsidiary, Connecticut Light and Power,  
7 Fortune was able to decrease energy costs by 17% and to maintain, and  
8 possibly expand, operations in Connecticut. According to Fortune Plastics  
9 President John Duhlig,

10 This package allows our Tennessee and Old Saybrook [Connecticut]  
11 plants to operate on a much more equal footing. While electric rates will  
12 continue to be lower in Tennessee, our Old Saybrook operations will be  
13 made so much more efficient that the energy costs of the two facilities  
14 will be roughly similar.

15 Now, instead of transferring the manufacturing capacity of our Old  
16 Saybrook plant to Tennessee, we're considering expanding our opera-  
17 tions here because this plant is so much more efficient.<sup>23</sup>

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

23 **Q: What steps can Edison take to reduce inter-and intra-class conflicts over**  
24 **DSM cost recovery?**

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<sup>23</sup> Quoted in Connecticut Light and Power. Undated. "Incentives Spell Good Fortune: Fortune Plastics, Inc., Old Saybrook, Connecticut." Hartford, Conn.: Northeast Utilities.

1 A: There are a number of cost allocation and program delivery strategies that the  
2 Company can employ to reduce conflicts among customers without  
3 sacrificing cost-effective DSM savings. The most straightforward method to  
4 reduce concerns between customer classes is to allocate DSM program costs  
5 by customer class, as the Company proposed in Case No. U-10102, and  
6 which it would still apparently prefer to do.<sup>24</sup>

7 Large industrials may also be concerned that their competitors are  
8 getting a larger share of the DSM pot, or that they are paying for their  
9 competitors' efficiency and productivity improvements. If so, the Company  
10 could adopt an innovative budgeting approach employed by Minnesota  
11 Power for its large customers. Minnesota Power allocates a fixed budget  
12 amount to each eligible customer in its Industrial Conservation program.  
13 Whatever amount is left unspent by a customer after five years is returned to  
14 the general pool for re-allocation to other customers.<sup>25</sup>

15 The Company could also reduce spending on individual industrial  
16 customers by replacing direct rebates with financing of measure costs. This  
17 option should be pursued only if it can be shown that financing will not  
18 impose undue barriers to cost-effective participation and measure adoption.  
19 One strategy for mitigating such barriers would be to recover loan payments

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<sup>24</sup> For a justification of class-based cost allocation, see Chernick, Paul; 1994; "The Allocation of DSM Costs to Rate Classes," *Proceedings: Fifth National Conference on Integrated Resource Planning*; Washington: National Association of Regulatory Utility Commissioners.

<sup>25</sup> Gustafson, John; telephone conversation, November 1994. Mr. Gustafson does not expect that there will be many instances of unspent funds being reallocated, since response to the program has been strong.

1 through customer bills and guarantee that loan payments do not exceed bill  
2 savings.

3 **VI. Rate Effects and the RIM Test**

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

6 A: Utilities are publicly regulated entities with fundamental obligations to  
7 maximize benefits to their customers and to the wider community that  
8 constitutes the public interest. The purpose of utility DSM programs, like that  
9 of many other utility activities (supply acquisition, the design of distribution  
10 systems, rate design), is to maximize the net value of the energy services that  
11 the utility normally provides, or (almost equivalently) to minimize the costs  
12 of providing service. Hence, the basic test of cost effectiveness is a measure  
13 of total costs.

14 **Q: What role should the Ratepayer Impact Measure Test have in determin-**  
15 **ing the cost-effectiveness of a demand-side option?**

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

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

20 A: Demand-side management is cost-effective if its total benefits exceed its total  
21 costs under the Total Resource Cost Test. The present-value RIM Test is not  
22 a measure of total costs; nor is it a useful measure of equity or rate impact.  
23 The RIM Test varies from the TRC Test primarily in its treatment of the  
24 participant. Rather than including the participant's costs and benefits, along

1 with those of all other customers, the RIM treats participant impacts as if  
2 they were of no concern to the utility or the Commission. The RIM ignores

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

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

8 Revenue shifts involve a loss to one group of customers, but a gain to  
9 another. The RIM effectively adds the losses to the costs of DSM (subtracts  
10 them from its benefits), but does not account for the gain.

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

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

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

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

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

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

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

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

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

- 22 • the starting level of rates,
- 23 • base-case rate increases without DSM,
- 24 • the distribution of DSM offerings (what percentage of customers can  
25 participate),

- 1       • the distribution of DSM savings (such as the percentage of customers
- 2       with declining bills),
- 3       • provisions to aid vulnerable customers (at-risk businesses, low-income),
- 4       • the average level of customer bills.

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

8   A: No. The economic attractiveness of the state for business, and the disposable  
9   income of households, depends on bills, not rates. As long as DSM is cost-  
10   effective, it will decrease the costs of energy services, and bolster the local  
11   economy.<sup>26</sup> Whether a difference in rates between the base case and an  
12   aggressive DSM plan is a matter for concern depends on how much average  
13   bills are reduced, how widely the benefits of DSM are distributed, how rates  
14   would otherwise be moving, and how much risk is reduced, as well as the  
15   magnitude of the rate difference.

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

18   A: No. The fact that the portfolio fails the RIM Test does not imply that rate  
19   effects are distributed unfairly, or that rate increases are too large compared  
20   to bill reductions. Equity problems should be addressed by changing cost-  
21   recovery patterns, altering the allocation of expenditures among and within  
22   rate classes, increasing the penetration of programs to groups that would

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<sup>26</sup> This general relationship is in addition to the positive direct employment effects of DSM.



1 otherwise face higher bills, and changing the timing of particular programs. A  
2 DSM plan should not be rejected because it fails the RIM Test.

## 3 **VII. Conclusions and Recommendations**

4 **Q: Please summarize your conclusions.**

5 A: The Company has failed to provide reasonable justification for abandoning  
6 DSM. Edison's various arguments regarding the connection of DSM to rate  
7 effects and competition are incorrect or inadequately supported. Where the  
8 Company's concerns may have some validity, it has not examined other  
9 alternatives for addressing them. The Company has simply prescribed  
10 termination of DSM as the panacea for all its potential future ills, real or  
11 imagined.

12 Edison has presented no evidence that DSM spending is a major factor  
13 in determining its prices, would be a major consideration in price  
14 competition, or (if reduced rates are vital) that cuts cannot be made in other  
15 budget areas (supply acquisition, retirements, overhead costs) at lower costs  
16 to ratepayers.

17 The Company has reiterated its endorsement of class-specific allocation  
18 of DSM costs, which I support, but has not determined whether this change  
19 would alleviate its concerns about the competitive position of its large  
20 customers. Edison does not appear to have even considered other options for  
21 moderating DSM rate effects without sacrificing cost-effective savings.

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

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

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

11   **A:** The Commission should deny Edison's request to reduce its spending levels,  
12       and reaffirm its guidance that Edison should spend at least \$14.9 million in  
13       1995.<sup>27</sup> If the Company fails to meet the savings target incorporated in the  
14       currently approved incentive mechanism, Edison shareholders should be  
15       penalized accordingly.

16           The Commission should allow Edison to allocate DSM costs to the  
17       participants' customer classes. The Company should be permitted to forego  
18       recovery of DSM costs, lost revenues, and incentives, as well as any other  
19       costs the Company wishes to forego collecting, to reduce customer bills and  
20       improve its competitive position. If the Commission is concerned about  
21       current rate levels, it should reconsider its earlier decision in Case No. U-

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<sup>27</sup> This spending level, approximately \$10 million more than the Company proposes for 1995, does not include the Company's plan to spend \$8.496 on residential low-income DSM to satisfy the Commission's Order in Case No. U-10297, or the Company's proposal to spend \$2.038 million for unspecified DSM for the Big Three auto manufacturers (submitted by the Company in Case No. U-10646).

1       10102 to expense all DSM expenditures, and instead allow Edison to  
2       amortize all or part of its annual spending.

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

7       **Q: What other actions should the Commission require of the Company?**

8       A: The Commission should direct Edison to

- 9       • develop industrial DSM programs to maximize net benefits, while  
10      meeting industrial concerns;
- 11      • offer a flexible bundle of reliability, power quality, on-site generation,  
12      efficiency, and real-time pricing services for its industrial and large  
13      commercial customers, placing priority on delivery of the services to  
14      economic distressed customers, those that are prime candidates for  
15      uneconomic bypass through municipalization or self-generation, and  
16      potential new customers.

17      **Q: Does this conclude your testimony?**

18      A: Yes.

Figure I-\_\_\_\_ (PLC-2):

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**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