

NAESB DSM-EE Retail Matrix Draft
For Presentation on January 23, 2008

Specifics of the DR Program Being Described			M&V Aspects of the DR Programs						
Class of DR Resources			Qualification/ testing/ auditing	Data reporting-frequency and monitoring	Meter and equipment standards	Performance/ baseline	Statistical sampling of non-interval metered loads	Deployment Limitations	Regulatory and market context
Capacity	Submitter	Dominion	Verification: Operate a pilot program to determine that at least 95% of devices both receive and respond to signal to turn off WH at the beginning of the program. Depending on the manufacturers and device, the verification may come from a signal back from device, a data logger, or an IDR on the meter. Ongoing, a sample of at least 250 devices should be tested at least every 5 years to determine the overall failure rate and to develop a net to gross ratio. This ratio will be applied to the deemed kW per customer reduction from the load study.	Data from IDR will be collected on monthly meter reading route for pilot and sample accounts. When program is implemented, the profiled reduction from the sample will be deemed to be the reduction for the program population. Monthly data will be required for PJM settlement	The customer's meter will continue to be used for billing determinants. The WH control switches should be included in the periodic meter tests to verify that 95% of the devices remain operational. The communication signal must be tested annually. Accounts in the load profile sample should have an end-use recorder on the water heater as well as a whole house recorder. Thirty minute interval data is adequate, although fifteen minute data on the water heater is considered preferable.	The algorithm that provides a reasonable estimate of normal customer usage absent any water heater interruption will be utility (and program specific). The CBL formula that is approved by the utility's ISO should be an acceptable default alternative.	An initial sample of 250 homes will provide a reasonably accurate estimate of load reduction that should be within +/- 5% of the true mean at a 90% confidence interval. The estimate for each demand reduction should be calculated with a 90% confidence level and the accuracy determined for each load reduction. An average error bound within +/- 10% will be considered to be accurate. If the net to gross operability study has remained at or above 90%, a sample of 100 homes will be adequate and should produce an error bound within +/- 5%. If net to gross operability drops below 90%, then a full sample of 250 homes will be required. If a tighter error bound is necessary, a larger sample will be required. (NOTE: This recommendation based on "PJM Deemed Savings for Legacy AC/WH Programs" report.)		
	Status	Program not in effect today							
	Product type								
	Category								
	Program or Product Name	Residential Water Heater Control Program							
	Trigger Events	when system load is critical (defined as ____) or when zone load is priced at or above \$ ____ or transmission constraints in zone (defined as ____)							
Energy Price	Submitter	Dominion	Each customer site will provide a dedicated IBM compatible PC with a modem in order to receive the price transmissions and the telecommunication equipment needed for the company to communicate with the meter (dedicated phone line, cellular phone modem, etc.) The company will provide the software to allow receipt of the RTP prices as well as to perform analytical and graphical functions. The company will install an IDR . A rate contract will be executed to insure that the customer fully understands the rate and agrees to a one year minimum commitment. (NOTE: the existing RTP rate is currently closed to new customers.)	The company will maintain access through the provided phone line and will collect half-hourly load data every 24 hours.	Standard billing meter and IDR, meeting company standards for accuracy. Modem and phone line provided by customer.	See Dominion VA Power rate sch.. RTP, paragraph V. DETERMINATION OF BASELINE KW LEVELS, BASELINE ENERGY LEVELS, AND INCREMENTAL ENERGY USAGE.	Not sampled.		
	Status	Program not in effect today							
	Product type								
	Category								
	Program or Product Name	Real Time Pricing rate (RTP)							
	Trigger Events	when system load is critical (defined as ____) or when zone load is priced at or above \$ ____ or transmission constraints in zone (defined as ____)							
Ancillary Services	Submitter	Dominion							
	Status	Not completed in the matrix							
	Product type								
	Category								
	Program or Product Name								
	Trigger Events								
Energy Voluntary	Submitter	Dominion							
	Status	Not completed in the matrix							
	Product type								
	Category								
	Program or Product Name								
	Trigger Events								
Capacity	Submitter	Alabama Power	Two way communication devices. We send test and customers respond. Test periodically.. In addition, "in field" tests are performed periodically as well.	Interval metered data captured and maintained. Actual load evaluated when IS call occurs. Normal load levels evaluated when no call occurs. This allows for a determination of expected results when called. Program requirements are that customer drop to firm level during a call. No "reduction" constraints utilized.	Utilizes revenue quality meters.	The IS customer is required to cut load to the contracted firm load level. Actual load dropped is determined by evaluating pre and post event load levels of each customer.	N/A	Customer has options to choose various call constraints. Chosen option determines the credit amount to the customer for non-firm load.	PSC regulated tariff
	Status	In effect Today							
	Product type	Interruptible Load							
	Category	Capacity							
	Program or Product Name	Industrial Interruptible Program, IS Program							
	Trigger Events	During a System Reliability Alert "System Alarm" notice. Can be utilized for locational reliability issues if necessary.							

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Capacity	Submitter	Alabama Power	Two way communication devices. We send test and customers respond. Test periodically.. In addition, "in field" tests are performed periodically as well. Generators are remotely started monthly for reliability purposes.	Two way communication confirms operating equipment.	Utilizes revenue quality meters.	No baseline requirements. Equipment rating and reliability testing determines expected reduction for a call.	N/A	Program rules set minimum 250 kW size to participate in the program. Program call constrained to 8 hours per day, 5 days per week, 240 hours per year.	PSC regulated tariff
	Status	In effect Today							
	Product type	Utilization of customer owned generation							
	Category	Capacity							
	Program or Product Name	Stand By Generator Program							
	Trigger Events	During a System Reliability Alert "System Alarm" notice. Can be utilized for locational reliability issues if necessary.							
Energy	Submitter	Alabama Power	Originally offered years ago prior to any qualification or auditing requirements. None exist today.	TOU metered data captured and maintained. No change or reduction constraints exist.	Utilizes revenue quality meters.	No performance levels expected therefore no baseline required.	N/A	Various TOU rates are available to customers meeting specific SIC codes. Some require separate metering for specific end uses such as irrigation pumps, electric vehicle charging, etc.	PSC regulated tariff
	Status	In effect Today							
	Product type	TOU Rates							
	Category	Energy price							
	Program or Product Name	TOU Rates							
	Trigger Events	Various types of TOU rates exist for various types of residential, commercial, and industrial customers. Rates vary by fixed customer charge, season, and time of day. Majority of rates are based on summer and non-summer seasons with peak, intermediate, and off-peak rate periods.							
Capacity	Submitter	BGE	BGE tests a sample of switches periodically. Switch operability studies must be conducted every 5 years, according to PJM, Manual 19: Load Data Systems.	In addition to the periodic sampling of switch operability, BGE conducts Load Research Studies to estimate the average impact for each participant in the program.	For its Load Research Studies, BGE uses ANSI certified meters that have been approved by the PSC for load recording.	For the development of average impacts for water heating, BGE compares non-event days to event days using a comparison of means. The difference between these two (2) load shapes forms the average impacts. PJM requires average impacts for each hour between noon and 8 p.m. The non-event profile is comprised of the hottest days of the summer.	Load data are obtained from meters that were installed on 65 customers' water heaters. This stratified sample design provides a confidence of 90% ± 10% accuracy.		
	Status	In effect Today							
	Product type								
	Category								
	Program or Product Name	BGE's Residential Water Heater Control Program (Rider 6)							
	Trigger Events	BGE can activate switches up to 15 times per year for reliability or economic reasons.							
Capacity	Submitter	BGE	BGE tests a sample of switches periodically. Switch operability studies must be conducted every 5 years, according to PJM, Manual 19: Load Data Systems.	In addition to the periodic sampling of switch operability, BGE conducts Load Research Studies to estimate the average impact for each participant in the program.	For its Load Research Studies, BGE uses ANSI certified meters that have been approved by the PSC for load recording.	For the development of average impacts for air conditioning, BGE compares non-event days to event days using regression analysis. The model estimates the average impact provided a particular weather conditions. PJM requires average impacts for each hour between noon and 8 p.m.	Load data are obtained from meters that were installed on 100 customers' air conditioner units. This stratified sample design provides a confidence of 90% ± 10% accuracy.		
	Status	In effect Today							
	Product type								
	Category								
	Program or Product Name	BGE's Residential Air Conditioner Control Program (Rider 5)							
	Trigger Events	There is no limit to the number of times BGE can activate switches for reliability or economic reasons.							
To the extent that NAESB can provide some protocols that would assist groups such as ISOs in evaluating the effectiveness of programs would be helpful.									
Time of Use Examples: Schedule of prices published such the consumer can determine his energy consumption based in part on price signals published.									
Real Time Pricing									
Demand Charges									
Peak Time Rebates									
Planning Peak Alerts									
Interruptible/Curtailable Management Rates									
Thermal Storage/Energy Storage									
Standby Generation Rates (emergency generators and distributed generators)									

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Smart Appliances									
Ancillary Programs									