

## **Documentation for 2008 Demand Response and Advanced Metering Databases**

There are two databases:

- FERC Survey and DR Programs
- AMI Analysis Data Set 2008

These databases use a relational database format in Microsoft Access (.mdb). In addition, the queries for each of the two surveys are also posted as Microsoft Excel spreadsheets (.xls).

AMISurveyResponses.xls contains query data from AMI Analysis Data Set 2008.

Entity\_DR\_Programs.xls and Respondent\_Entity\_Information contain query data from FERC Survey and DR Programs.

### **FERC survey and DR Programs**

Tables in this database include

- DR\_Programs – This is the list of all DR Programs
- EIA\_Entity – This table contains all the EIA number, region, state, and order number. This forms the unique identifier for each entry
- EIA\_Region\_State – This table contains the EIA number, region and state
- EIA\_Table – This contains a listing of all EIA numbers and the entity name associated with the number.
- Entity\_Programs – This table contains the EIA number, region, state, order number, and program ID. This forms the unique identifier for the DR Programs.
- Region\_State – This table contains the relationship between the Regions and the states associated with each region
- Regions – This is a list of the NERC regions and Hawaii
- Responses – this table contains the responses given by entities based on their filing order
- States – This table contains a listing of all the 50 states and DC

### **Relationships between the tables**

The EIA\_Entity table forms the unique identifier for each response given by an entity for the DR Programs. The Entity\_Programs table forms the unique identifier for all programs listed by the entities. These two tables form the “hub” for all other tables to connect to in some form. The EIA\_Entity connects the EIA number, the region, the state and the filing order number; while the Entity\_Programs table includes the program ID number.

The relationships between the tables is seen in figure 1

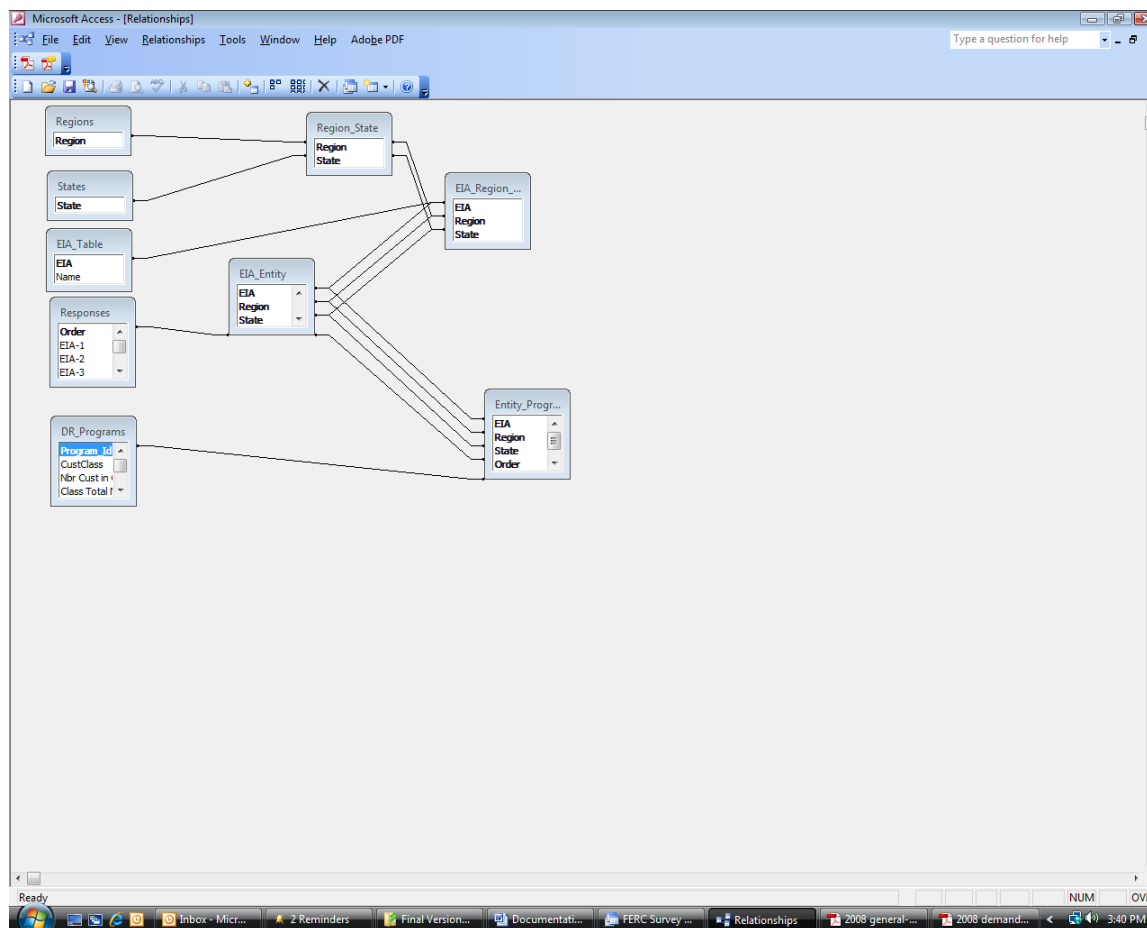


Figure 1: Relationships between DR Tables

### Description of fields in DR\_Programs table

Program_Id	ID field for program
CustClass	entity class
Nbr Cust in Class	number of customers
Class Total MW	total MW for entity's class
Pgm Name	name of program
Pgm Desc	description of program
Nbr Cust Enrolled	number of enrolled customers
MW Cust Enrolled	maximum demand of enrolled customers, 2007
Potential Peak Red	potential peak reduction in 2007 in MW
Actual Peak Red	actual peak reduction in 2007 in MW
Potential MWh chg	potential MWh change attributed to program in 2007
Actual MWh chg	actual MWh change attributed to program in 2007
Excluded other DR pgms	are participants excluded from taking part in other DR programs?
Mandatory	is participation mandatory?
Voluntary	is participation voluntary?
Ancillary	does the program include ancillary services?
CAP	does the program include capacity market programs?
CPP	does the program include critical peak pricing?
CPR	does the program include critical peak rebate?
DB	does the program include demand bidding?

DLC	does the program include direct load control?
EDRP	does the program include emergency demand response program?
IC	does the program include interruptible and curtailable?
RTP or hourly	does the program include real time or hourly pricing?
TOU	does the program include time-of-use?
Other	other program type, if applicable
Other Desc	description of other program type
Min Pymt Rate (\$/MWh)	minimum payment rate (wholesale programs)
Min Duration (hrs)	minimum duration of event (wholesale programs)
Max Duration (hrs)	maximum duration of event (wholesale programs)
Event Limit (#)	number of specific event limits
Bid Limit (\$/MWh)	maximum bid that can be submitted
Pgm Start Date	program start date
Pgm End Date	program end date
Min term (yrs)	minimum length in years that customers are obligated to participate
Penalties	are participants ever charged penalties?
ICAP	is there an ICAP credit associated with the program?

### Description of fields in Responses table

Order	unique key
EIA-1	EIA numbers for all affiliated entities
EIA-2	“
EIA-3	“
EIA-4	“
EIA-5	“
EIA-6	“
EIA-7	“
EIA-8	“
EIA-9	“
EIA-10	“
Name-1	name of entity/organization for all affiliated entities
Name-2	“
Name-3	“
Name-4	“
Name-5	“
Name-6	“
Name-7	“
Name-8	“
Name-9	“
Name-10	“
State-1	states for which entity is reporting
State-2	“
State-3	“
State-4	“
State-5	“
State-6	“
State-7	“
State-8	“
State-9	“
State-10	“
Nbr Res Cust	number of residential customers

Nbr Com Cust	number of commercial customers
Nbr Ind Cust	number of industrial customers
Nbr Trans Cust	number of transportation customers
Nbr Other Cust	number of other customers
Total Cust	number of total customers
Res Peak MW	peak MW of residential demand for 2007
Com Peak MW	peak MW of commercial demand for 2007
Ind Peak MW	peak MW of industrial demand for 2007
Trans Peak MW	peak MW of transportation demand for 2007
Other Peak MW	peak MW of other demand for 2007
System Peak MW	peak MW of total demand for 2007
Notes	notes
Ownership	type of entity (municipal, coop, IOU, etc.)
No of Programs Res	number of residential DR programs
No of Programs Com	number of commercial DR programs
No of Programs Ind	number of industrial DR programs
No of Programs Trans	number of transportation DR programs
No of Programs Others	number of other DR programs
No of Programs Wsale	number of wholesale DR programs

Additional information on the 2008 Demand Response survey, including a glossary of terms and an electronic copy of the survey, can be found at

<http://www.ferc.gov/industries/electric/indus-act/demand-response/2008/survey.asp>.

## Queries

There are two queries in this database. Entity\_DR\_Programs combines entity-specific information such as name, number and region with the demand response programs that each entity reported. Respondent\_Entity\_Information provides the entity information along with its customer counts by class and peak MW of demand by customer class.

The field names in the queries match those in the tables from which they are pulled, and are otherwise self-explanatory.

## **AMI Analysis Dataset 2008**

Tables in this database include

- AMI Filing – This is the list of all the AMI Filing order numbers
- AMI Survey Responses –Attaches a response ID to an AMI Filing order number
- AMI\_Filing\_Responses – Attaches an Entity, its region, state and filing order with a response ID
- EIA\_and\_Name - Lists the company’s EIA number and Name. Each listing is unique.
- EIA\_Name\_Region\_State – Lists the EIA number, Name, Region and State. This helps to build the unique identifier for each response given.
- GI Filing – this is the same as the AMI Filing. The only difference is that this table lists the filings for General Information
- GI Survey Responses –Serves the same purpose as the AMI Survey Responses. This table deals with the General Information
- GI\_Filing\_Responses – corresponds to the AMI\_Filing\_Responses table, but with General Information
- NERC\_Regions – This table lists the NERC Regions
- States – This table contains a listing of all 50 US states, DC, and Virgin Islands (VI)
- State\_Regions – This table links the regions with their respective States
- SurveyResponses – This is the compilation of responses to the survey. Each response has a unique identifier.

### **Relationships between the tables**

AMI\_Filing\_Responses table forms the unique identifier for each response given by an entity for the AMI Database. Just as in the DR database, this table forms the “hub” for all other tables to connect to in some form. The AMI\_Filing\_Responses connects the EIA number, the region, the state and the filing order number. The GI\_Filing\_Responses table forms the unique identifier for the General Information entities in the AMI Database.

The relationships between the tables is seen in figure 2

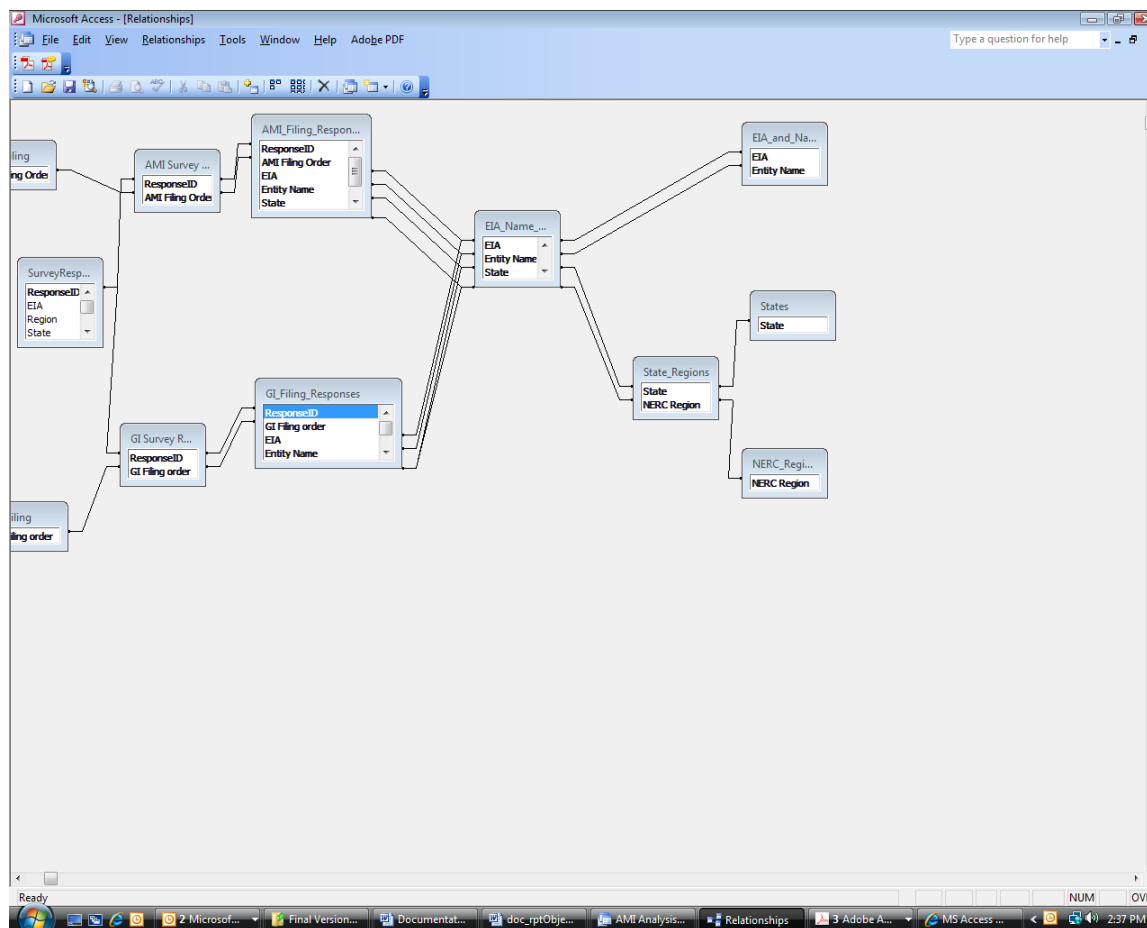


Figure 2: Relationships between tables in the 2008 AMI Dataset

### Description of fields in SurveyResponses table

ResponseID	unique response ID
EIA	EIA code for entity
Region	applicable regional council
State	applicable state
Q2EName1	name of entity
Entity Type	type of entity submitting response to survey
Size	size of entity
Q5-MultRegion	list of multiple regional councils associated with data, if applicable
Q6-OwnMeters?	does the entity own or control billing or revenue meters?
Q7-ResMeters -	number of residential meters
Q7-ComMeters	number of commercial meters
Q7-IntMeters	number of industrial meters
Q7-TransMeters	number of transportation meters
Q7-OtherMeters	number of other meters
Q7 - total meters	total number of meters
Q8-15Min-ResAMI	residential meters, interval data collected 15 minutes or less
Q8-15Min-ComAMI	commercial meters, interval data collected 15 minutes or less
Q8-15Min-IndAMI	industrial meters, interval data collected 15 minutes or less

Q8-15Min-TransAMI	transportation meters, interval data collected 15 minutes or less
Q8-15Min-OtherAMI	other meters, interval data collected 15 minutes or less
Q8-15Min-TotalAMI	total meters, interval data collected 15 minutes or less
Q8-Hourly-ResAMI	residential meters, interval data collected more than 15 minutes but in no more than hourly intervals
Q8-Hourly-ComAMI	commercial meters, interval data collected more than 15 minutes but in no more than hourly intervals
Q8-Hourly-IndAMI	industrial meters, interval data collected more than 15 minutes but in no more than hourly intervals
Q8-Hourly-TransAMI	transportation meters, interval data collected more than 15 minutes but in no more than hourly intervals
Q8-Hourly-OtherAMI	other meters, interval data collected more than 15 minutes but in no more than hourly intervals
Q8-Hourly-TotalAMI	total meters, interval data collected more than 15 minutes but in no more than hourly intervals
Q9-AMISystem?	has entity implemented advanced metering system?
Q9-Other	other information provided by entity
Q10-AMIFunctions	list of functions currently utilized by entity
Q10-OtherFunctions	additional functions identified by entity
Q11- Comments	additional comments provided by entity
Flags for specific functions identified in Q10 [if included, "1" in the field]	

- Remotely change metering parameters
- Remotely upgrade firmware
- Outage detection
- Outage restoration
- Outage mapping
- Pre-pay
- Remote connect/disconnect
- Load forecasting
- Theft detection and other line losses
- Price responsive demand response
- Enhanced customer service
- Asset management
- Home area network
- Interface with gas or water meters
- Pricing/event notification
- Power Quality
- Other

Region key	region
Year filed	2008

## Query

AMISurveyResponses aggregates the survey response information with the entity name, EIA number, NERC region, state and filing order for each of the records in the database. The field names in the query match those in the tables from which they are pulled, and are otherwise self-explanatory.