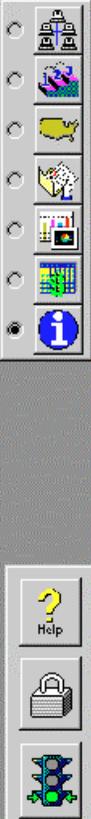


FRED (About)

Electric Hanford Site Charge Code(s)



FRED
Facility Resource and Energy Data

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This product was created with
Asymetrix Multimedia Toolbook 4.0

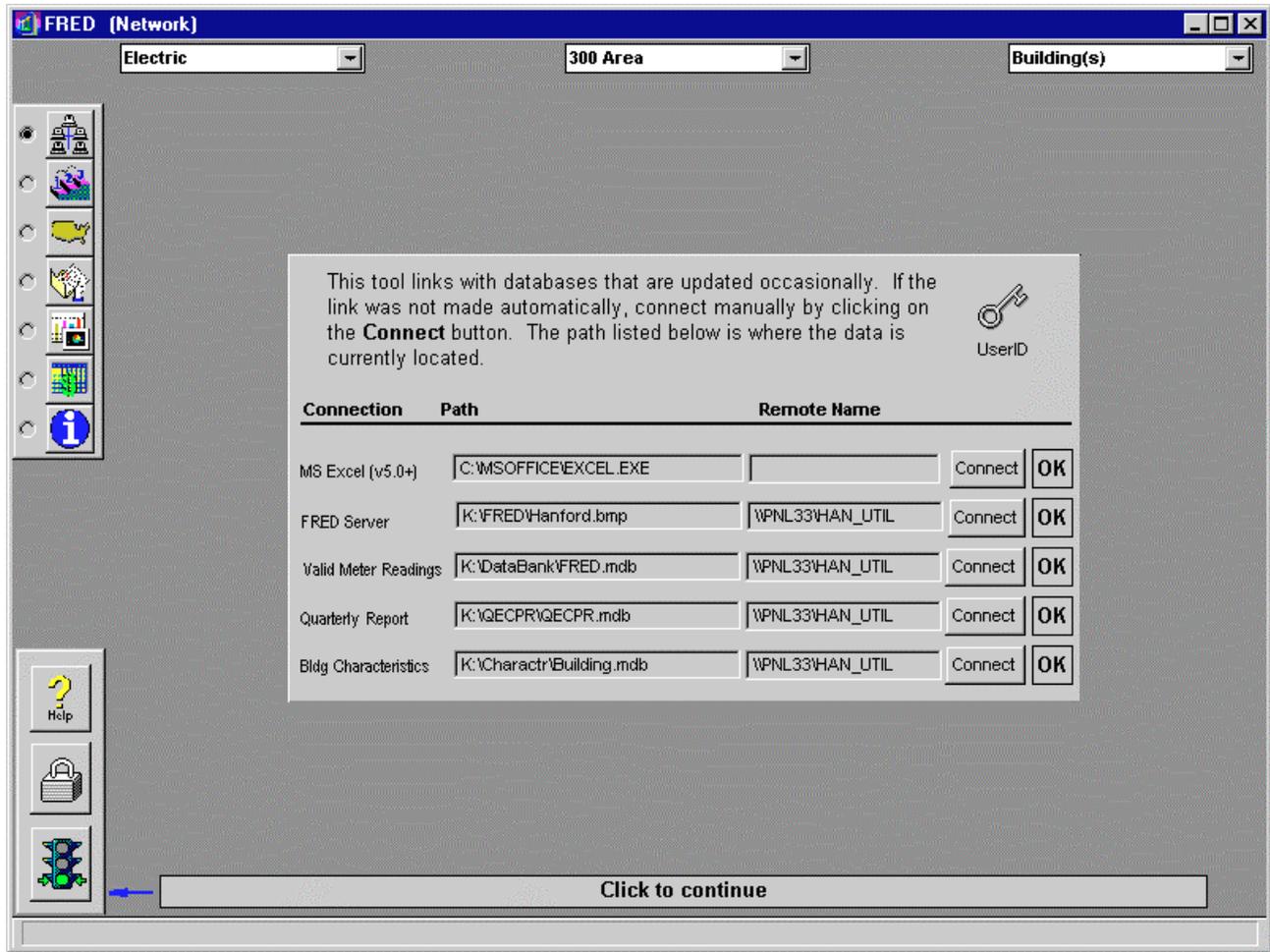
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Richland, WA 99352

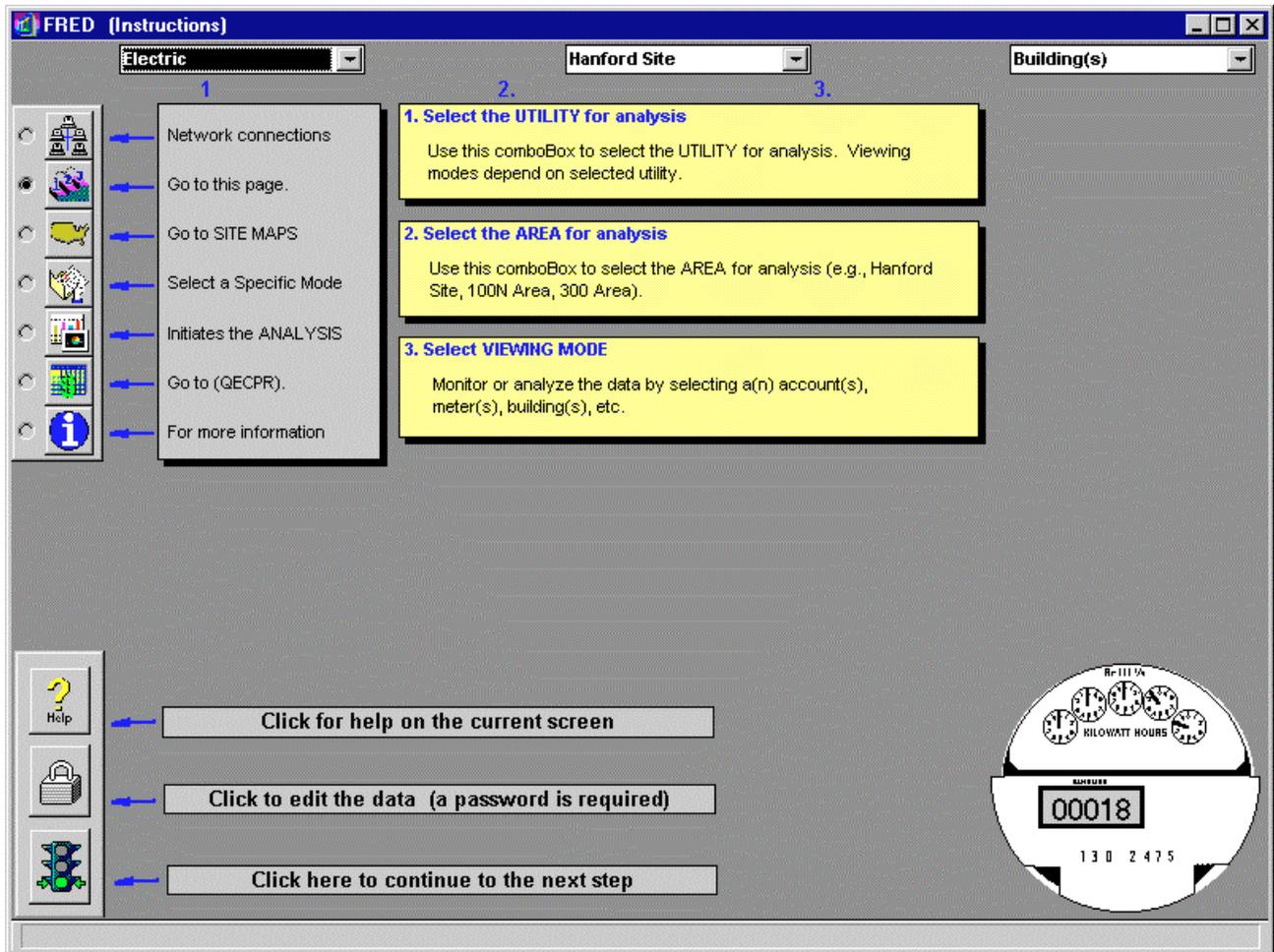
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Disclaimer

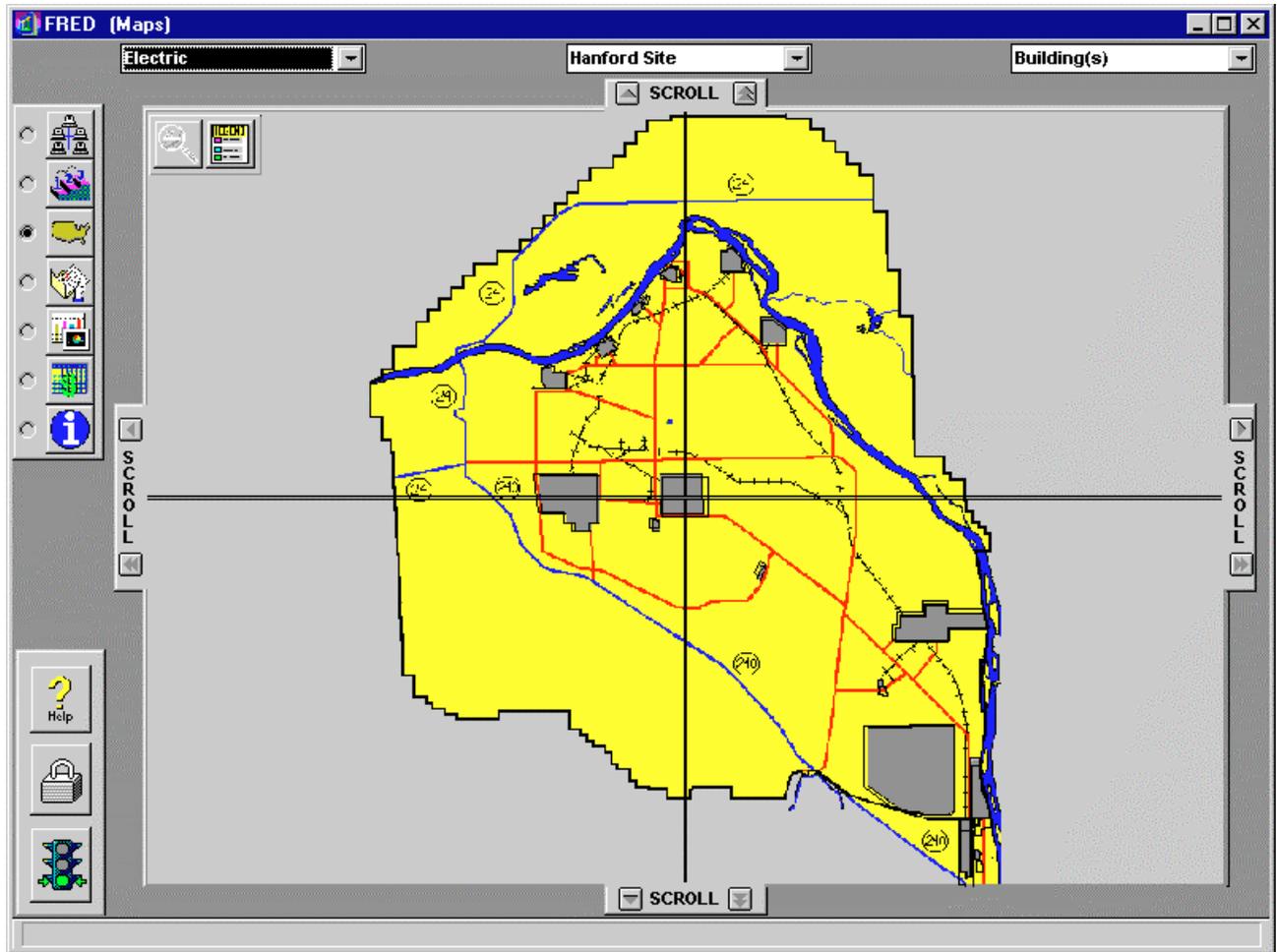
The Facility Resource Energy Data (FRED) credits page.



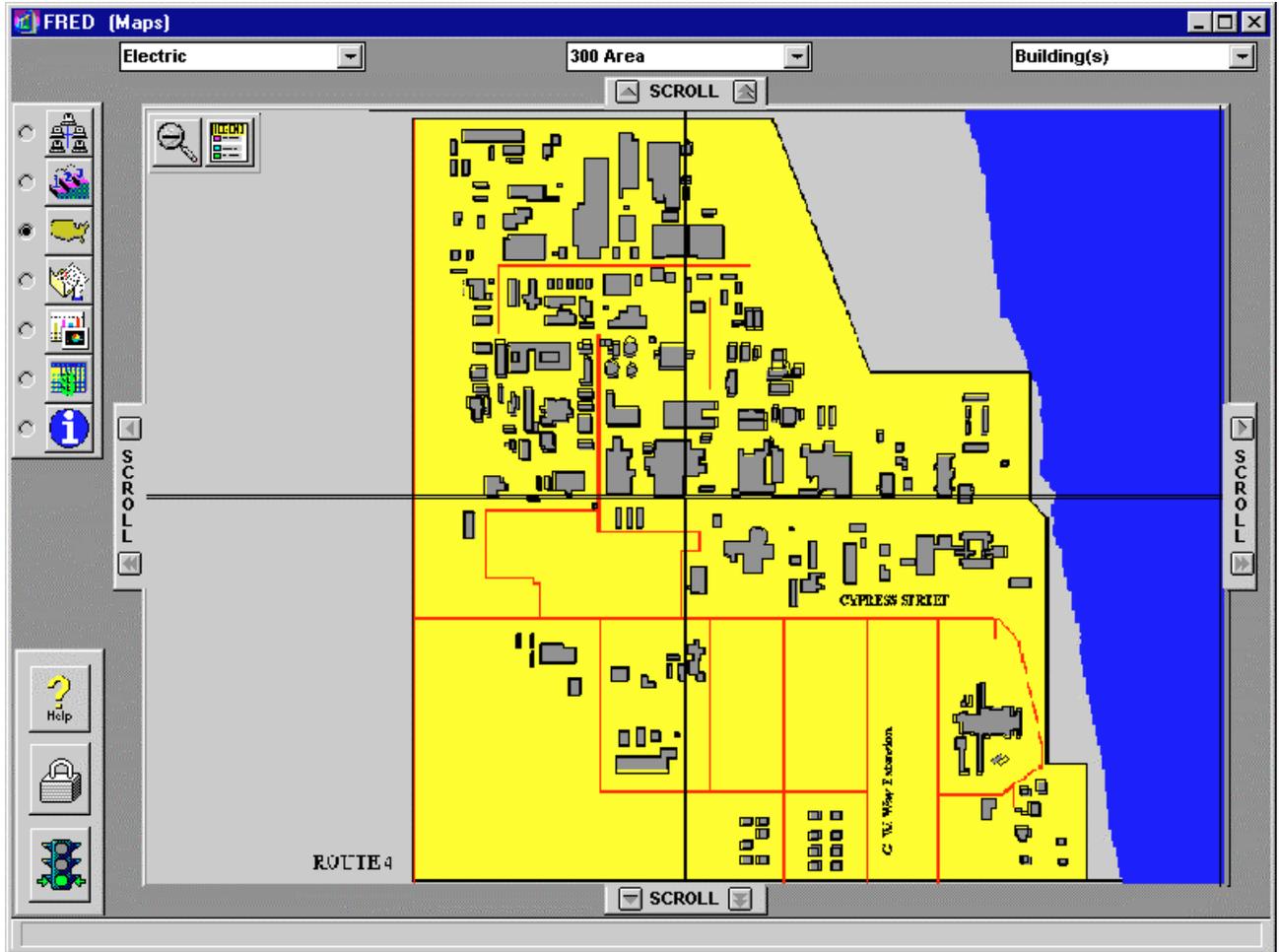
This screen shows the connections FRED needs to access various sources of data for Hanford – meter data, informational databases, and other software. This page also shows the status of each connection. When you log on, FRED automatically attempts to establish these connections. If successful, FRED moves to the next screen.



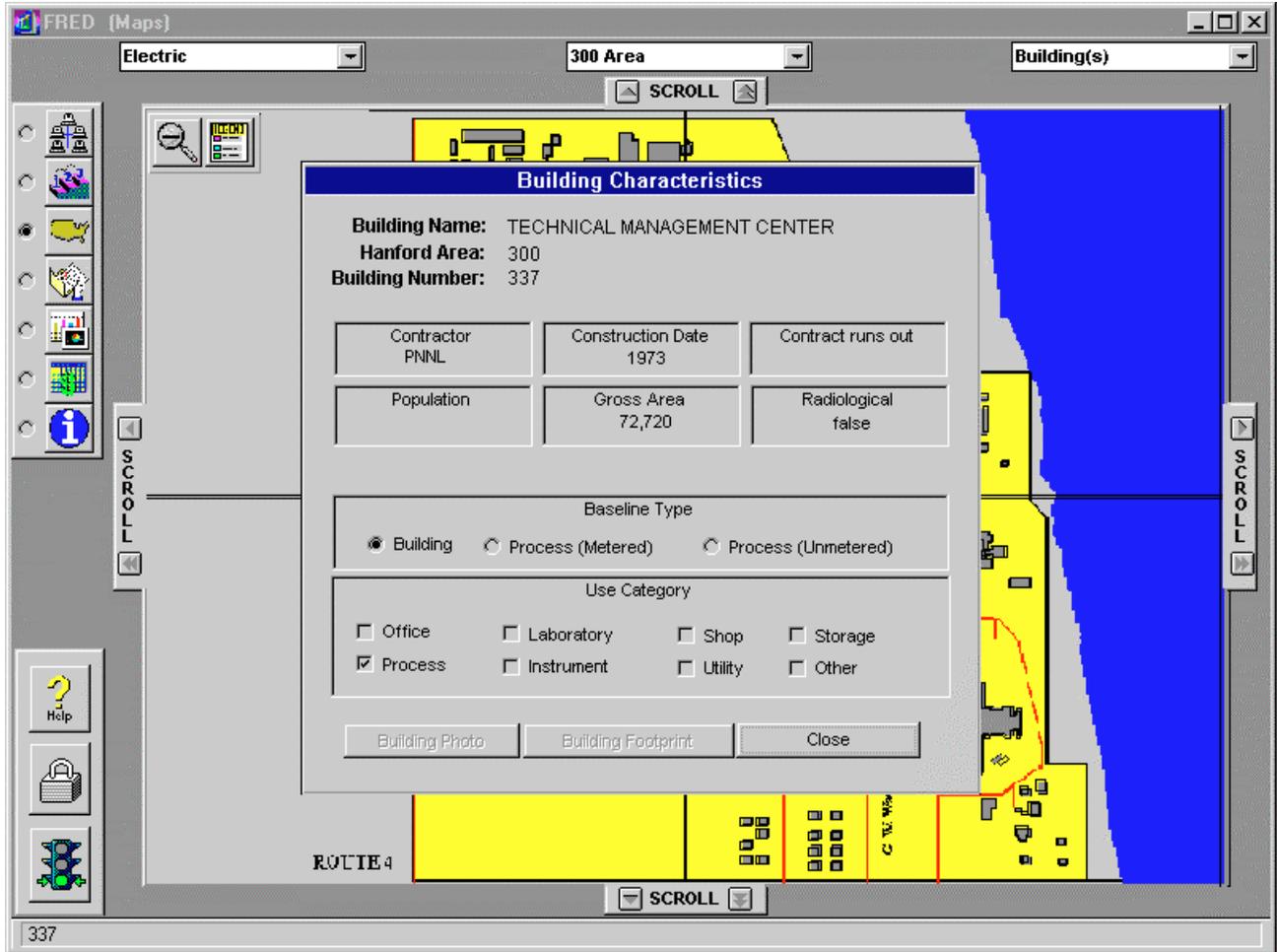
This is the Instructions Screen that provides some basic help in selecting utility data for analysis or reporting. Simply select the utility type, the area of the Site, and the viewing mode (meter, building, line, transformer, etc.).



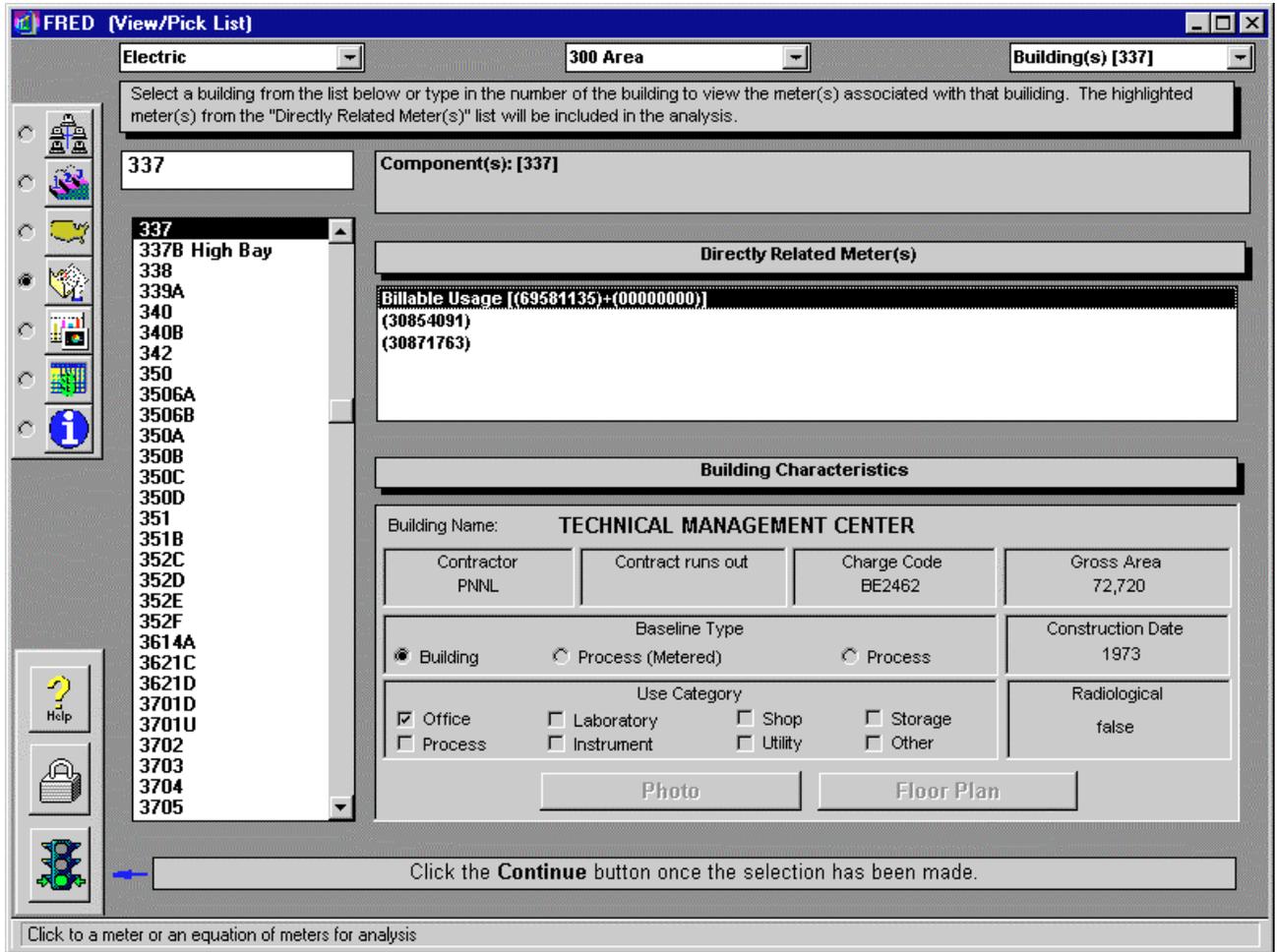
If a specific area is not yet chosen, FRED provides the Site map showing individual areas as gray regions. Click on a specific area to move to that map.



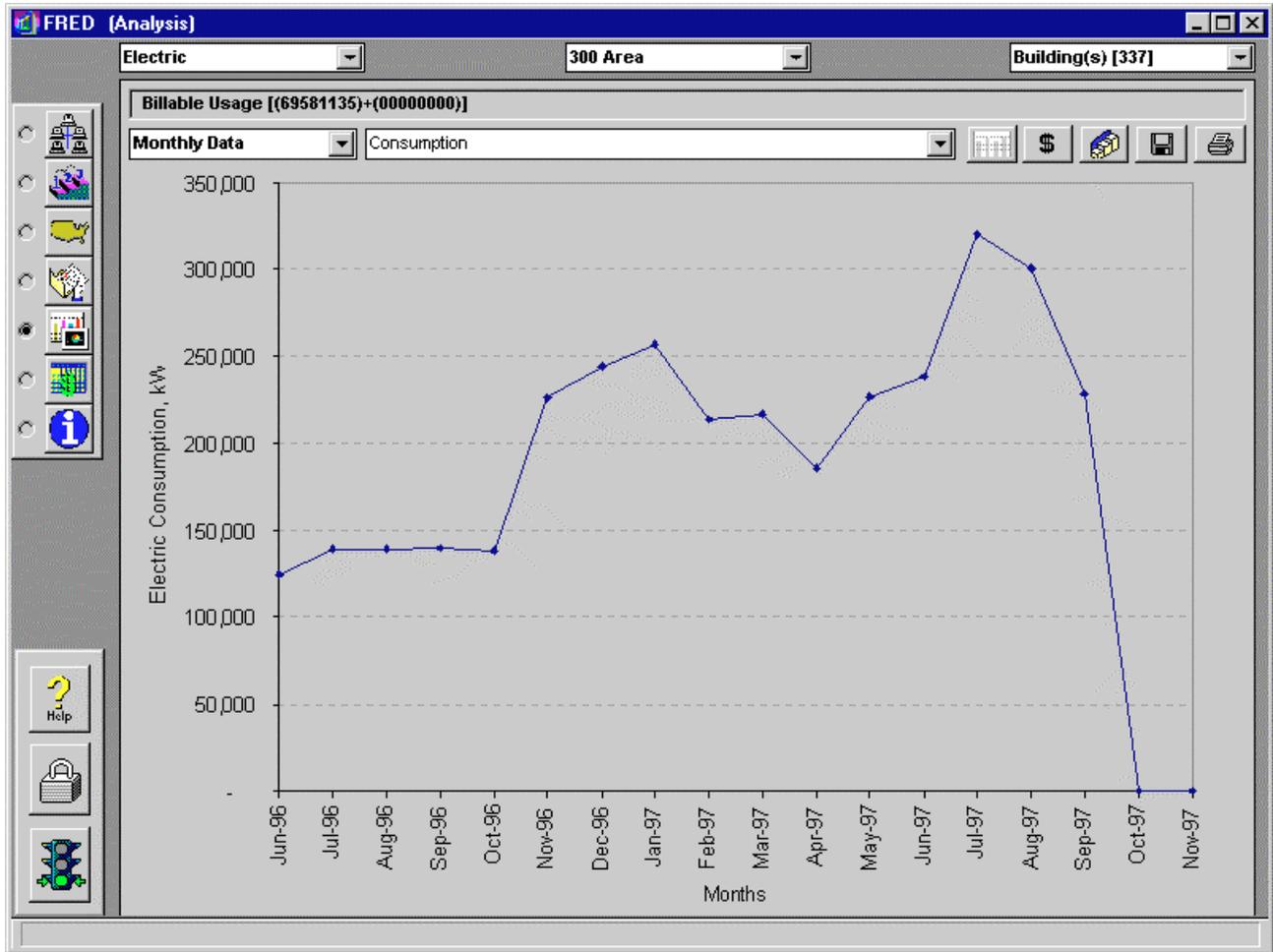
This is the map for the 300 Area at Hanford. You can zoom, pan, or scroll the map to see more detail. Click on a building to select it for analysis or right click on a building to view the building characteristics.



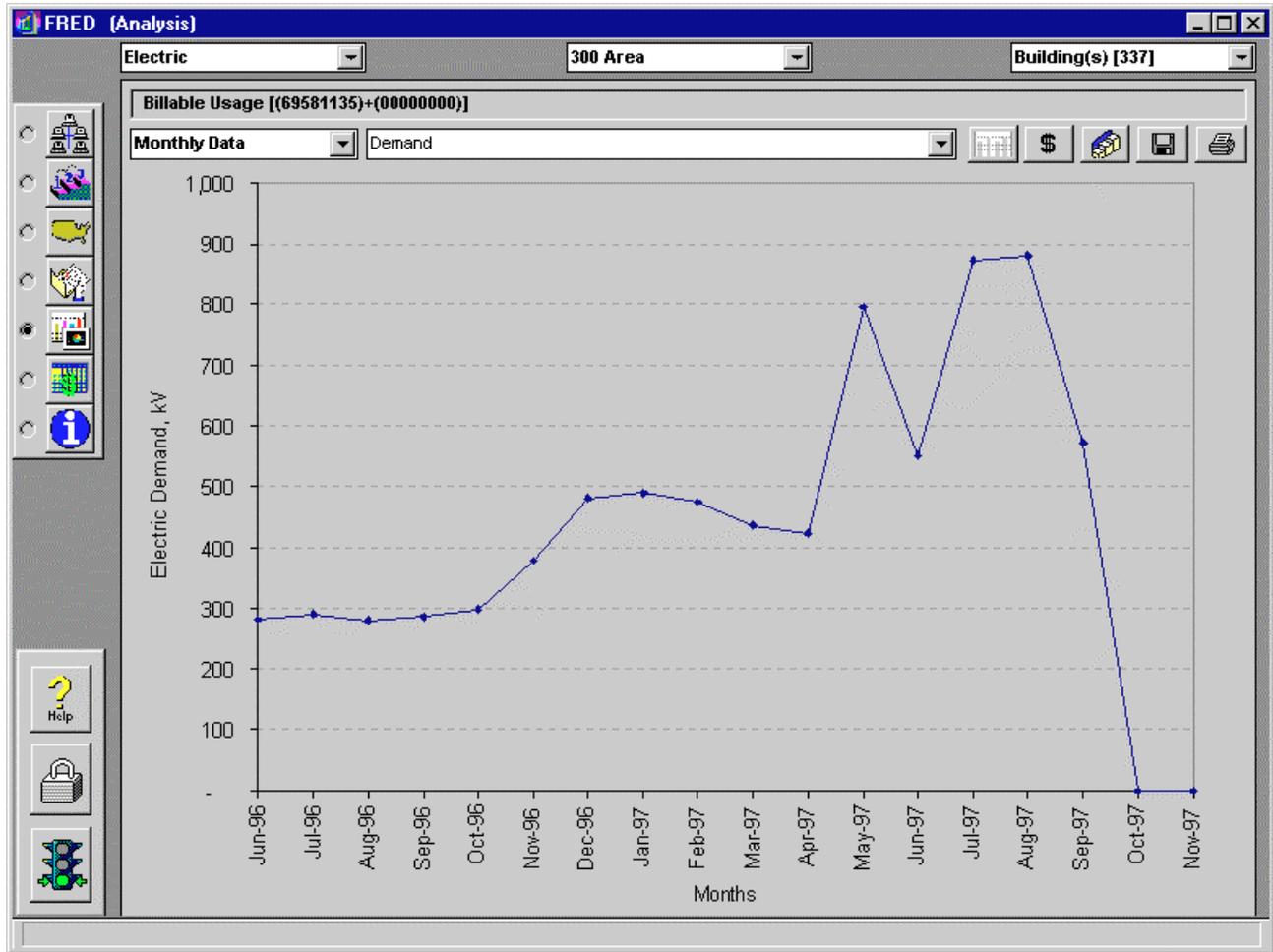
The building characteristics are stored in a remote database and accessed by FRED upon demand.



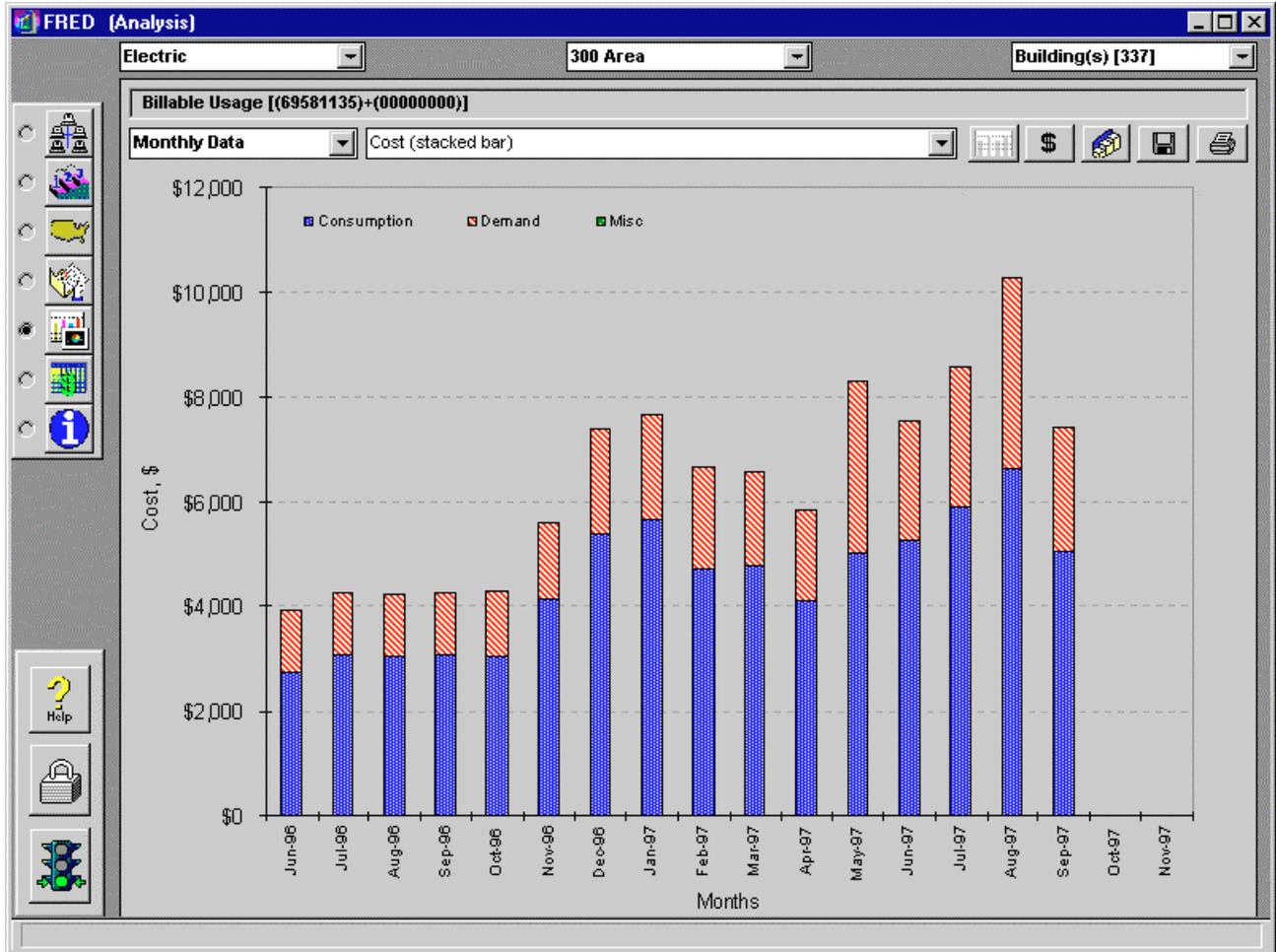
When a building is selected, FRED displays this Selection Description Screen. The selected building along with a complete list of buildings in the 300 Area is shown to the left. A list of available meters on the 337 Building for the selected utility type (electric in this example) is shown to the right with the main meter marked as Billable Usage.



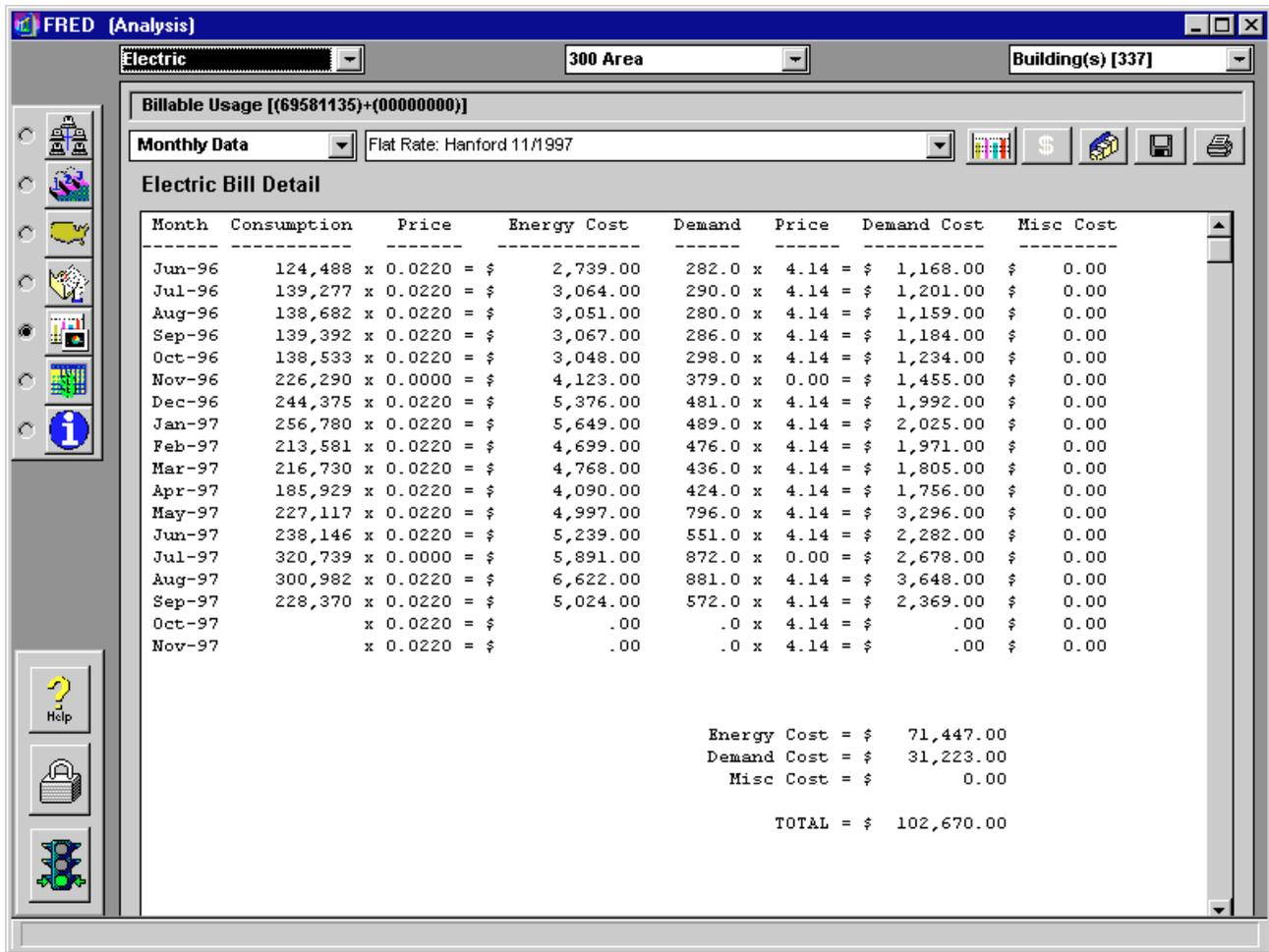
After selecting the type of analysis (monthly or custom) and the time period, FRED performs the analysis and displays the consumption plot for the time period specified. Other Site resources such as non-electric fuels, water, etc. could be displayed.



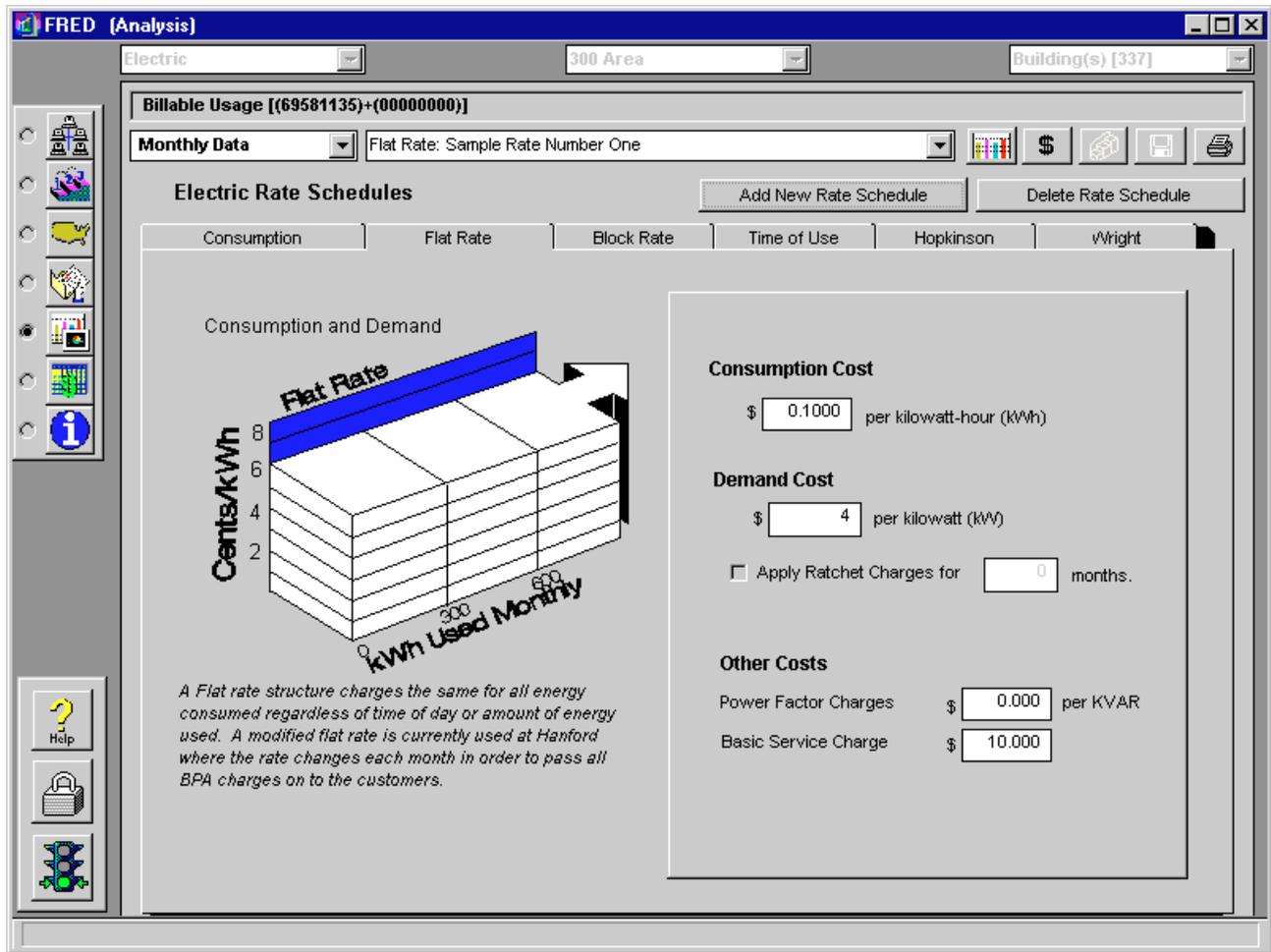
FRED can also display demand as shown in this plot.



FRED also provides a breakdown of the charges for consumption, demand, and other service charges.



Clicking on the button with the Dollar Sign brings you to the tabular version of the metered consumption and the amount charged on the electric bill, including the rates used.



The Rate Schedule button allows users to view the rate structure used in computing the electric bill. By changing the values on this screen, users can analyze the affect other rate structures have on electric charges. This screen shows a common flat electric rate structure with demand.

FRED [Analysis] Electric 300 Area Building(s) [337]

Billable Usage [(69581135)+(00000000)]

Monthly Data Block Rate: Sample Rate Number One

Electric Rate Schedules Add New Rate Schedule Delete Rate Schedule

Consumption Flat Rate Block Rate Time of Use Hopkinson vWright

Inverted Block
 Cent/kWh
 8
6
4
2
 0 300 600 900
 kWh Used Monthly

The block rate structure may have different unit charges for various blocks of demand or energy. In an Inverted Block Rate, the cost per kWh increases as the rate of consumption increases. In a Declining Block Rate, the cost per kWh declines as the rate of consumption increases.

Declining Block
 Cent/kWh
 8
6
4
2
 0 300 600 900
 kWh Used Monthly

Apply rate to all months
 Each month get individual rate

Consumption Months: August
 # of blocks: 4

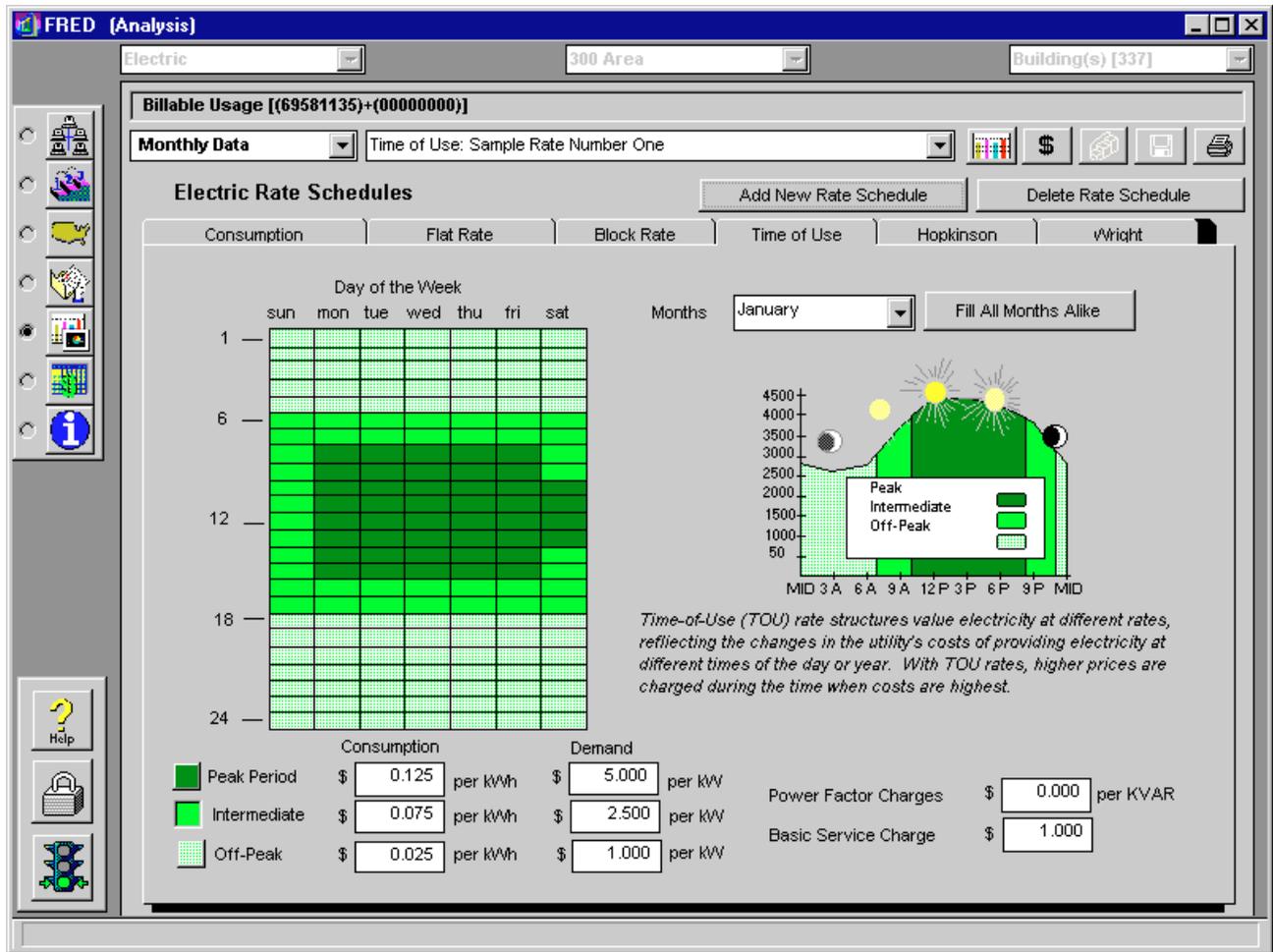
\$ 0.1250 per kWh for the first 1,000 kWh
 \$ 0.0750 per kWh for the next 5,000 kWh
 \$ 0.0500 per kWh for the next 15,000 kWh
 \$ 0.0250 per kWh for the rest 0 kWh
 \$ 0.2000 per kWh 0 kWh

Demand Cost
 \$ 34.300 per kilowatt (kW)
 Apply Ratchet Charges for 0 months.

Other Costs
 Power Factor Charges \$ 0 per KVAR
 Basic Service Charge \$ 0

Help

FRED also has the capability to analyze more complicated rate structures, such as Inverted Block and Declining Block. At any time you can move back to the tabular electric bill to see what affect the new rate schedule had on your electric bill.



With this year's development underway, FRED will even be able to analyze complicated Time-Of-Use (TOU) Rate Structures. Time-Series Data is required for this type of rate schedule.

FRED (QECPR)

Electric Hanford Site Building(s)

Fourth Quarter FY 1996

Quarterly Report Type:

- Energy Conservation Performance Report
- Energy Mgmt Consumption Cost Report
- Consumption Change Analysis Report
- Site Data Normalization Report

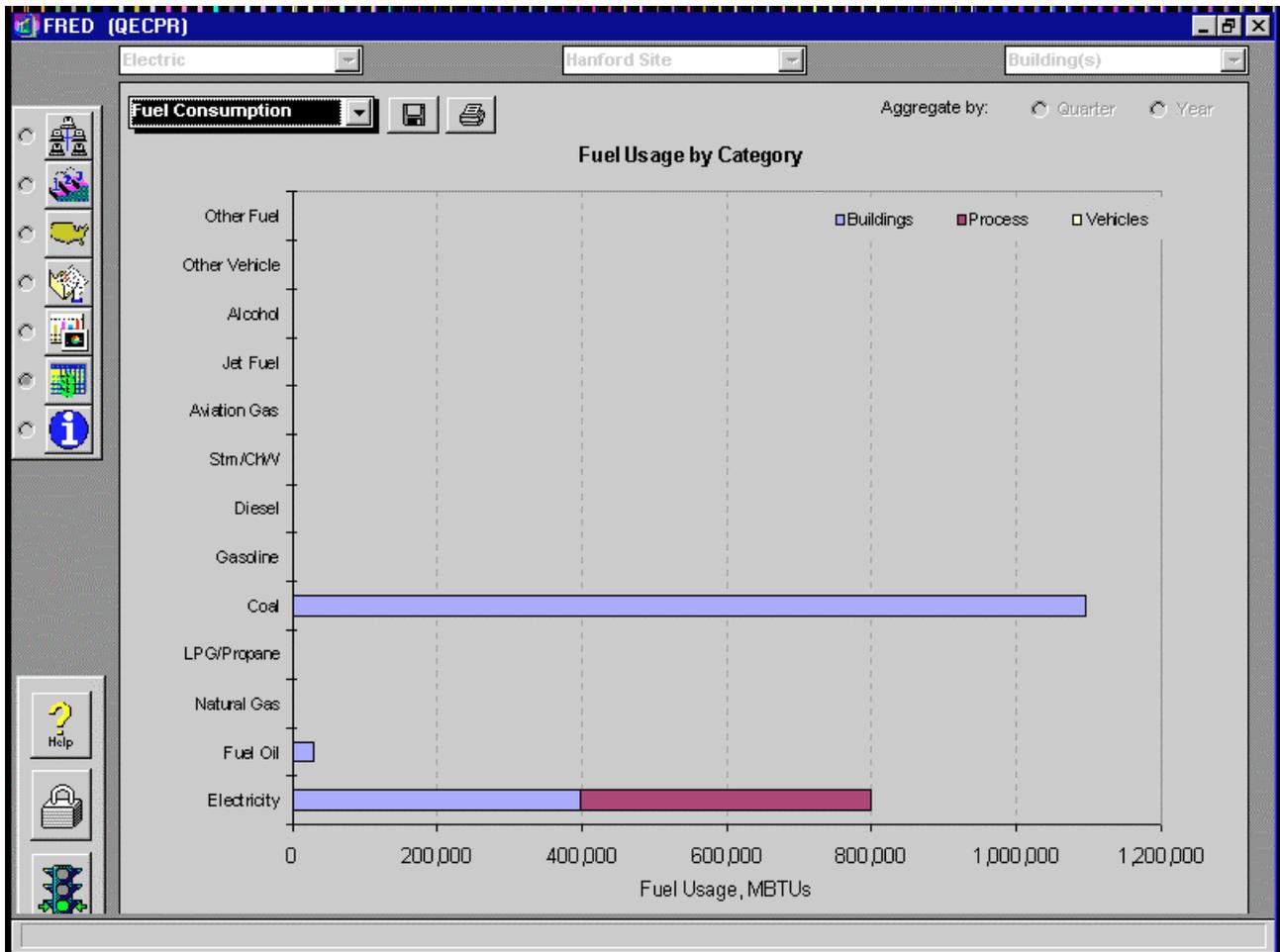
Use Category:

- Buildings
- Metered Process
- Vehicles & Equipment

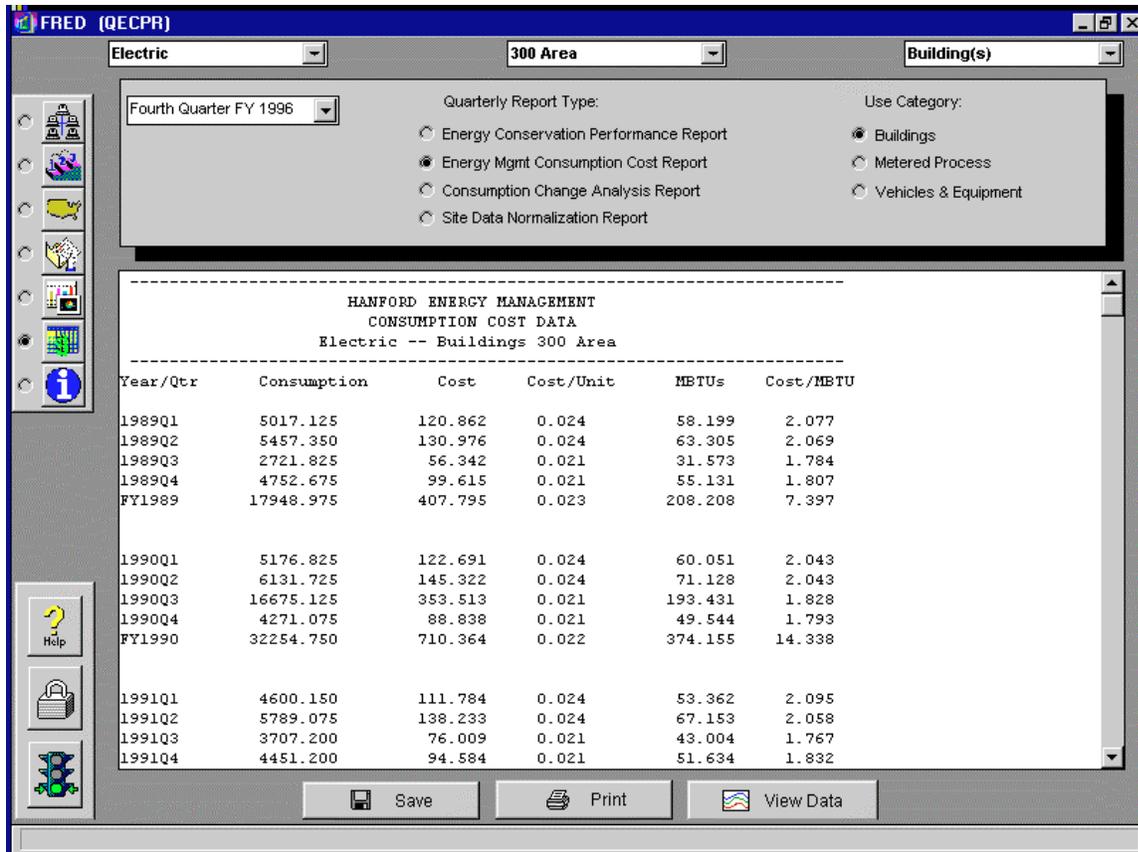
QUARTERLY ENERGY CONSERVATION PERFORMANCE REPORT
 SITE NUMBER 1300 HANFORD SITE TOTAL DATA
 QUARTER 4 FISCAL YEAR 1996

CATEGORY AND TYPE	CONSUMPTION IN QUARTER	COST IN QUARTER (in 1000s \$)
A. BUILDINGS		
1. Electricity - MWH	34394.960	1100.593
2. Fuel Oil - 1000 Gallons	213.412	103.035
3. Nat. Gas - 1000 Cu. Ft.	267.407	1.345
4. LPG - 1000 Gallons	0.000	0.000
5. Coal - Short Tons	4407.811	260.369
6. Stm. & Ch.W - Bil. BTU	0.000	0.000
7. Other - Billion BTU	0.000	0.000
B. METERED PROCESS		
1. Electricity - MWH	34516.735	868.304
2. Fuel Oil - 1000 Gallons	0.000	0.000
3. Nat. Gas - 1000 Cu. Ft.	0.000	0.000
4. LPG - 1000 Gallons	0.000	0.000
5. Coal - Short Tons	0.000	0.000
6. Stm. & Ch.W - Bil. BTU	0.000	0.000
7. Other - Billion BTU	0.000	0.000

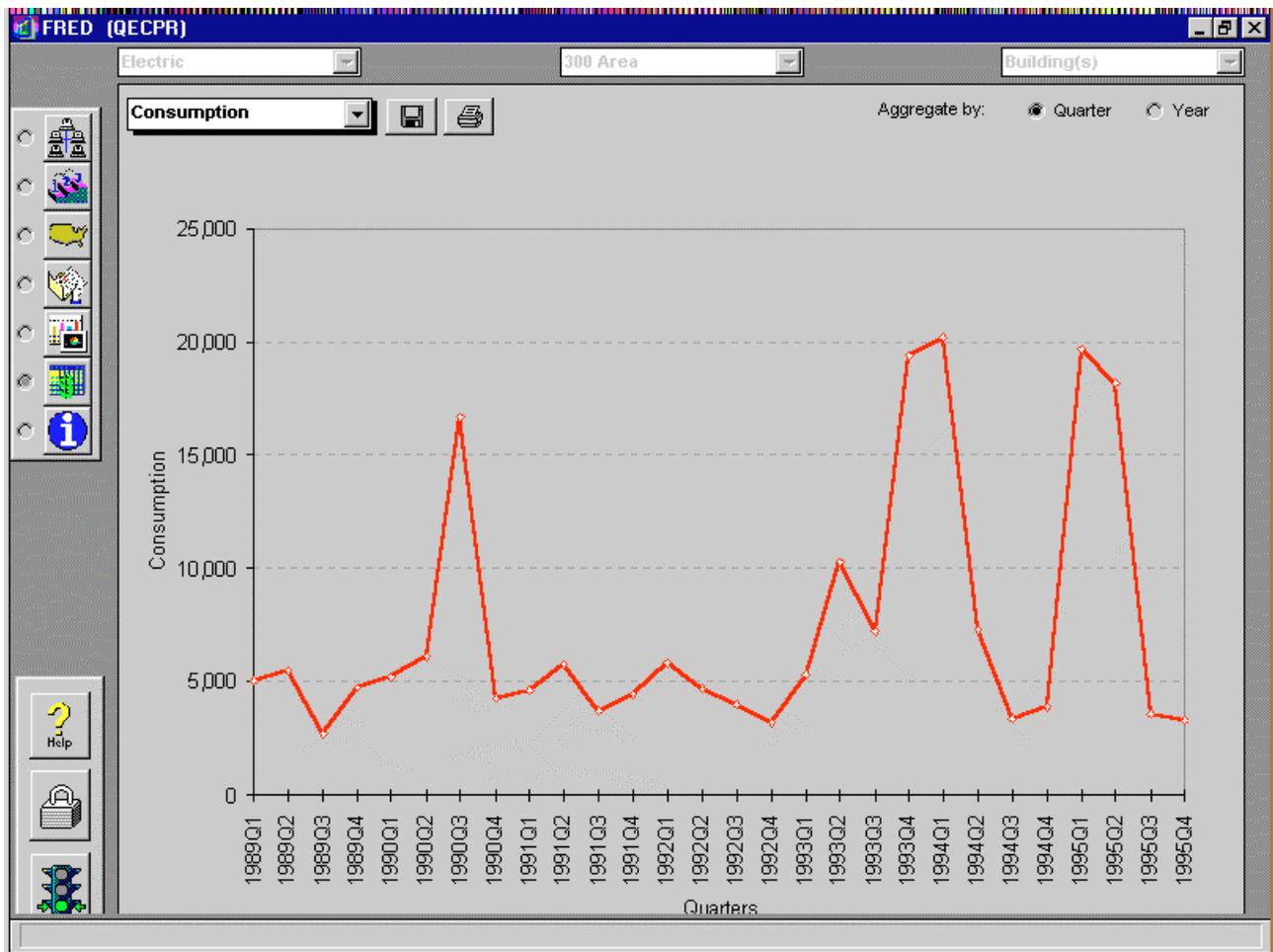
FRED provides access to the U.S. Department of Energy (DOE) Quarterly Reports – a requirement at the Hanford Site. The first report, Energy Conservation Performance Report, is shown.



Clicking on the View Data button from the first quarterly report shows a graphical representation of the energy use for all applicable fuel types. Although not particularly interesting for the Hanford Site, other sites where multiple fuel types are in use would find this plot more informative.



The second quarterly report, Energy Management Consumption Cost Report, is shown here.



Clicking on the View Data button from the second quarterly report shows the energy use trend by quarter or by year.

FRED (QECPR)

Electric 300 Area Building(s)

Fourth Quarter FY 1996

Quarterly Report Type:

- Energy Conservation Performance Report
- Energy Mgmt Consumption Cost Report
- Consumption Change Analysis Report
- Site Data Normalization Report

Use Category:

- Buildings
- Metered Process
- Vehicles & Equipment

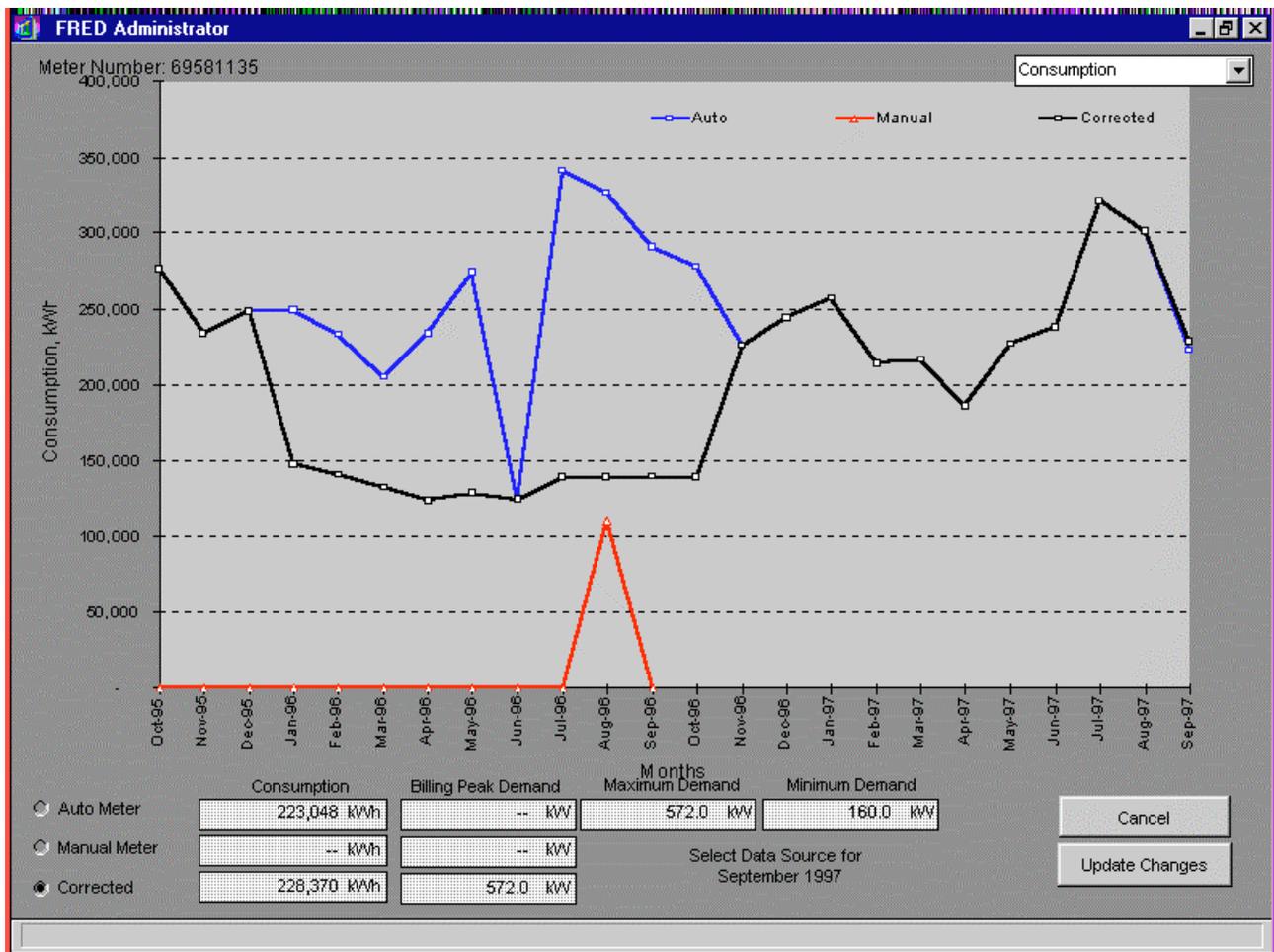
HANFORD ENERGY MANAGEMENT
 Quarterly Energy Consumption Performance
 Consumption Charge Analysis -- Electric
 Current Year to Previous Year (4Q1995-4Q1996)
 Fourth Quarter FY 1996

Code	Area	Category	Unit Change	%Change	Comments
1303	Misc	Buildings	-0.060	-15.4%	
1323	200W	Buildings	1425.886	23.8%	
1333	200E	Buildings	-5660.961	-612.9%	
1353	400	Buildings	503.890	13.3%	
1363	600	Buildings	96.112	12.9%	
1373	700	Buildings	-72.780	-17.5%	
1393	3000	Buildings	-5.660	-14.2%	

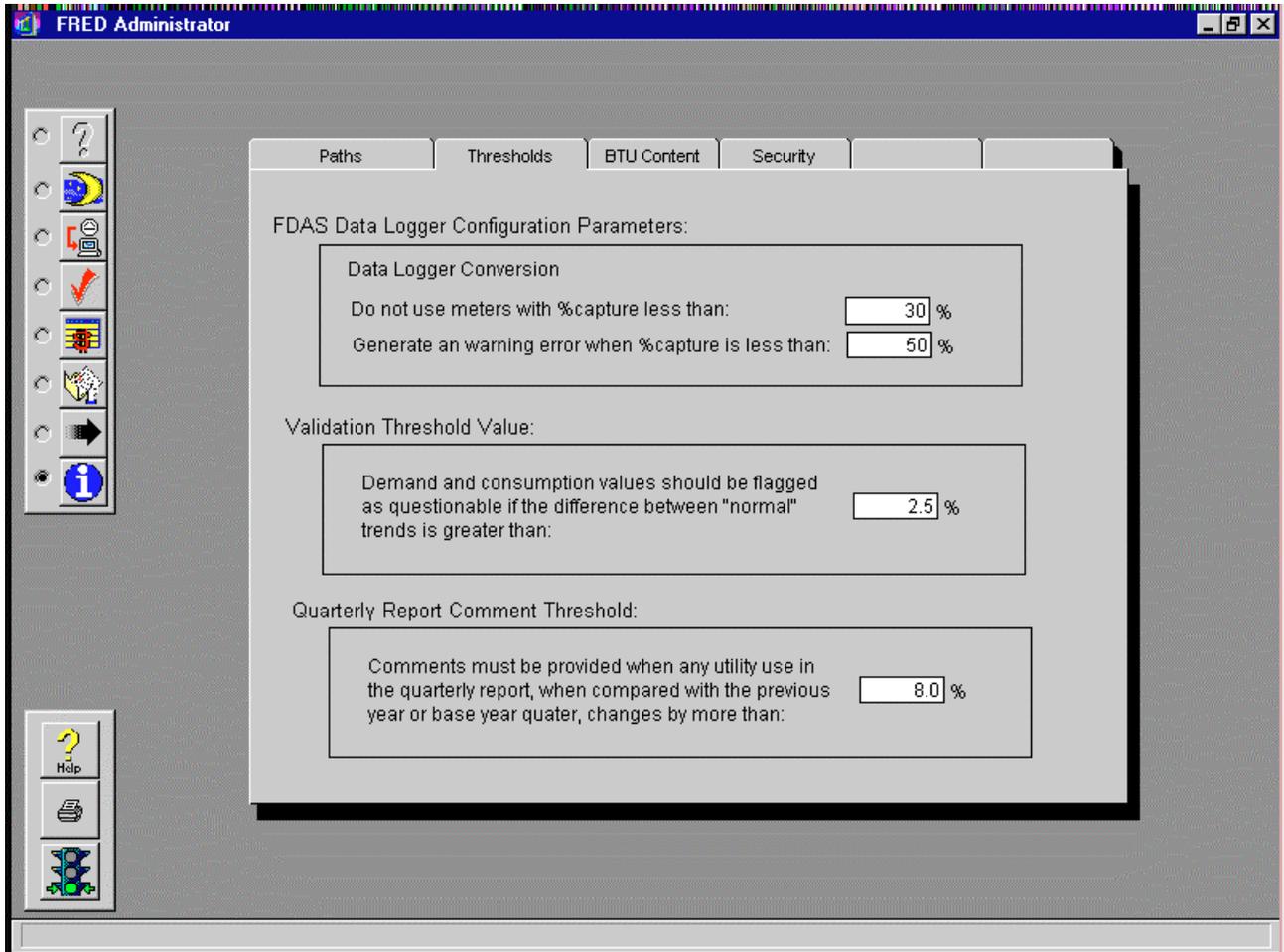
HANFORD ENERGY MANAGEMENT
 Quarterly Energy Consumption Performance
 Consumption Charge Analysis -- Electric
 Current Year to Base Year (4Q1985-4Q1996)

Save Print View Data

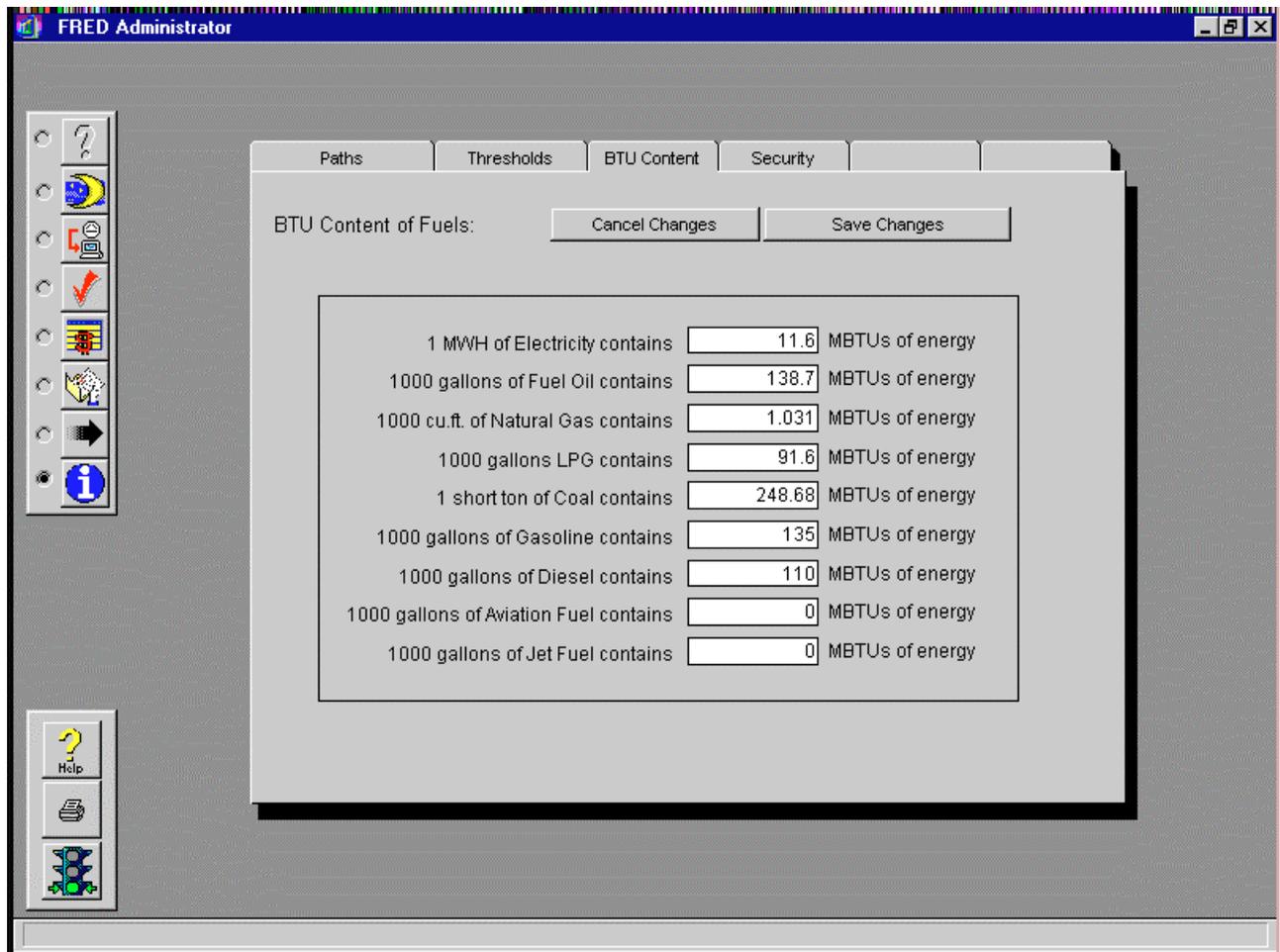
The third quarterly report, Consumption Change Analysis Report, is shown. This report presents energy use comparisons to the previous year and to the 1985 Federally mandated base year.



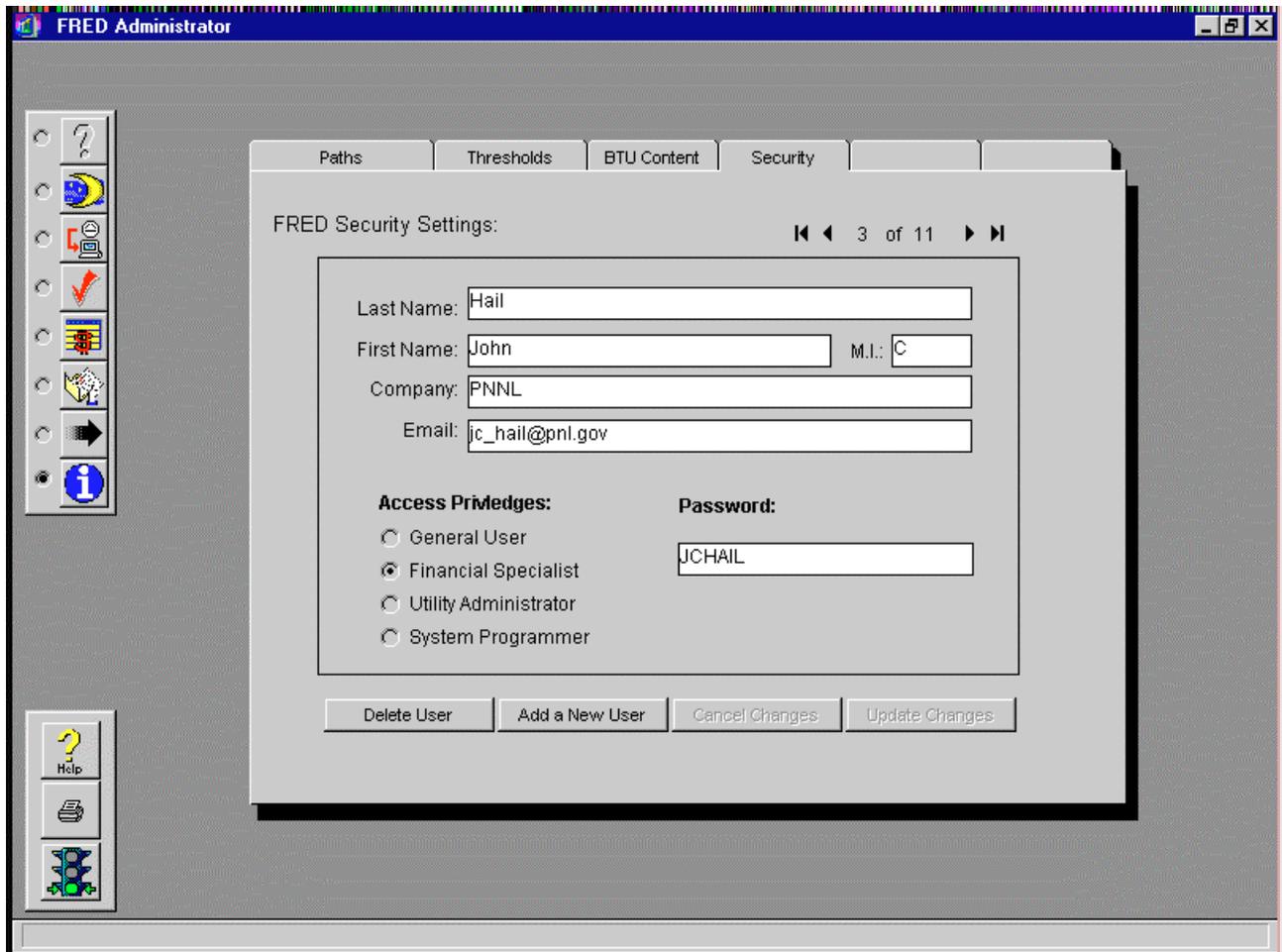
FRED's Administrator module provides a validation tool to compare different sources of consumption data. For Hanford, manually read meters are compared to data logger readings and utility billed values. A similar plot is available for demand readings.



The FRED Administrator module allows users to specify the thresholds used in data validation. In this example, data loggers reporting a capture rate less than 50% are flagged as questionable and those reporting a capture rate less than 30% are ignored. Even values identified as “good” are flagged if they are more than the user-specified number of standard deviations from normal.



FRED allows users to specify the BTU content of various fuel types.



FRED allows the client to set security levels to control access to any portion of the software that can change or control data.

Hanford Utility Data

The [Hanford Site](#) is a [U.S. Department of Energy \(DOE\)](#) installation located in Washington State. Hanford's industrial facilities, research laboratories, and office space are scattered over 1,465 km² (560 mi²). These facilities enclose nearly 461,000 m² (4,960,000 ft²) of floor space. Hanford Utilities provides electric, water, natural gas, coal, and fuel oil to the Site.

FRED Internet module provides three easy mechanisms for you, the user, to select what utility data you are interested in and display that data in a usable format. To request Time-Series (raw) data from previous months, go to the [Data Archive](#). For more details on using the site or if you are having trouble, see more details on [Viewing Data](#).

1. FRED's [Selection Wizard](#) provides maps and other graphics to help you select the building, meter, or account for analysis. (Requires Netscape Navigator v3.0 or greater) Once you have retrieved the data, you can place a bookmark at that page for access later.
2. If you already know the meter or account you are looking for, you can enter it in the form below to go directly to that item.
3. FRED's [User Profile Wizard](#) allows regular FRED users, to develop your own User Profile of accounts and/or meters you regularly monitor which are all linked to your own custom page.

Click on one of the three data selection mechanisms to view FRED's utility data.

 <p>FRED Selection Wizard</p> 	<p>Account Number: <input type="text"/> <input type="button" value="Go"/></p> <p>MeterName: <input type="text"/> <input type="button" value="Go"/></p>	 <p>FRED User Profile Wizard</p>
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The FRED Internet module provides three mechanisms to obtain utility data and reports. The Selection Wizard provides a series of maps to help the user identify the building, meter, or account for display. The direct access feature allows users to enter the specific user or account for direct access to the meter/account information page. FRED also allows users to create a user profile which remembers meters or accounts as commonly used.

Meter Location ID: 69581135

Auto Meter Number: 69581135
Logger ID: 18
Readings/Hour: 1
Active Site: true

Manual Meter Number: 69581135
Number of Dials: 4
Multiplier: 4800
Active Site: true

FRED Facility Resource
Energy Data
An Integrated Software Platform for Utility-Related Data



Obtain a Report by Clicking on One of the Following:

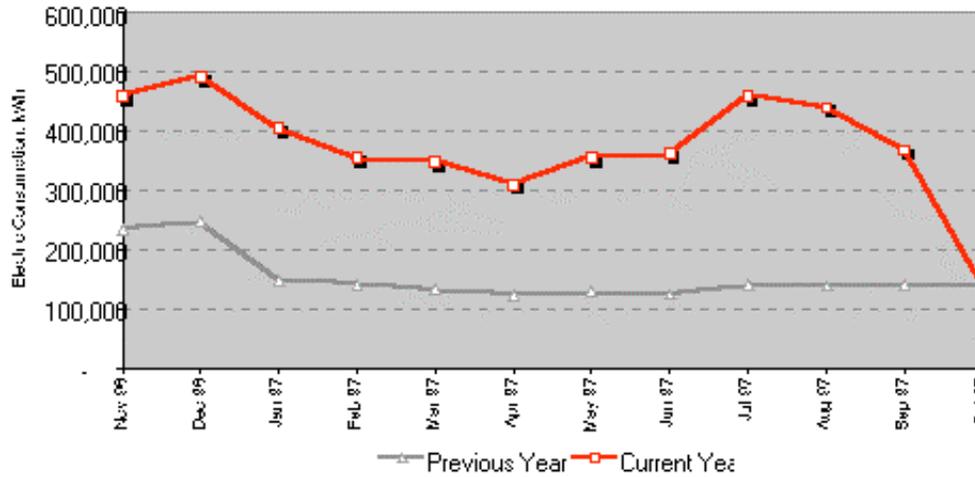
- Detailed Monthly Usage: [Report \(*.PDF\)](#) or [Raw Data \(*.XLS\)](#)
- Time-Related Usage: [Oct 1997 Report \(*.PDF\)](#) or [Raw Data \(*.XLS\)](#) or [Sep 1997 Report \(*.PDF\)](#) or [Data \(*.XLS\)](#)
- Cost Account Information: [Report \(*.PDF\)](#)
- Normalized Data: [Report \(*.PDF\)](#)



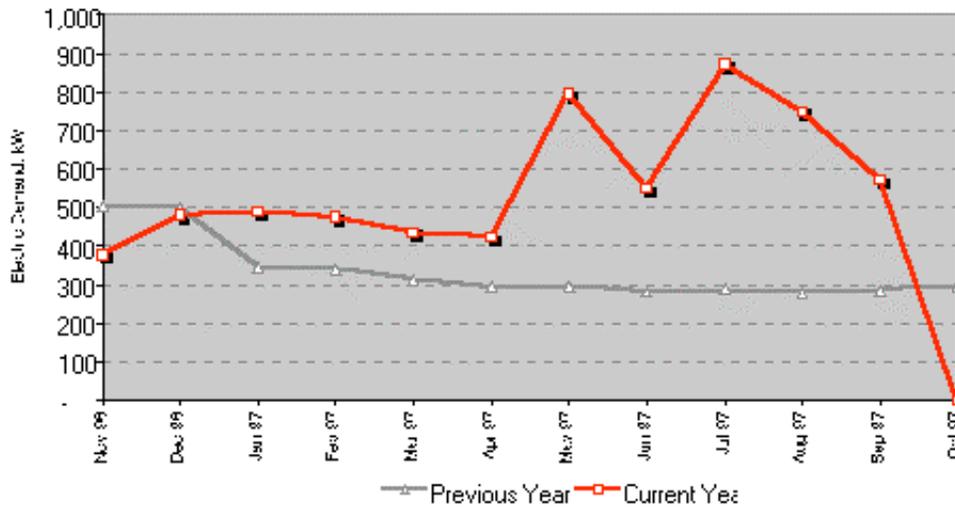
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Page Updated: 11/17/1997

The FRED's Internet module has a meter information page for each utility meter or utility account. From this screen, users can view reports in Adobe Acrobat (*.PDF) format, download the data in Microsoft Excel format, retrieve archival data, or add this meter to a User Profile for easy access later.

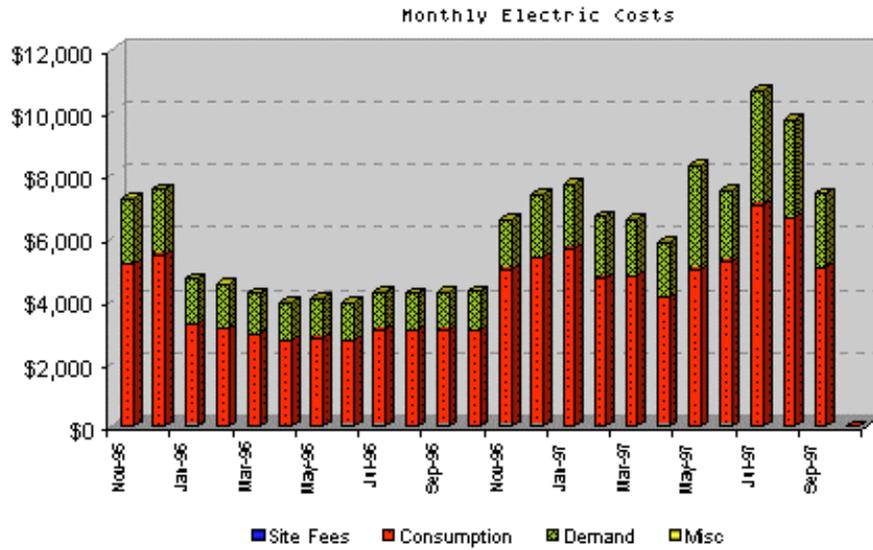
Monthly Electric Consumption



Monthly Electric Demand



Plots of the monthly demand and consumption readings for the previous two years are available both from the FRED Local Area Network module and the Internet module.



A plot showing the cost components of utility charges for the last two years are included. The data behind each of FRED's plots can be downloaded in Microsoft Excel format.