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ANITA M. SCHAFER Paralegal

VIA OVERNIGHT MAIL

June 30, 2003



JUL 0 1 2003

PUBLIC SERVICE COMMISSION

Honorable Thomas M. Dorman **Executive Director** Kentucky Public Service Commission 211 Sower Boulevard Frankfort, KY 40602

Re: Administrative Case No. 387, ULH&P Responses to Appendix G of Commission Ordered Data Requests

Dear Mr. Dorman:

Enclosed please find an original and twelve (12) copies of ULH&P's responses to data requests in the above-captioned case. Please date-stamp the two (2) extra copies and return them to me in the overnight envelope provided.

Should you have any questions, please contact me at (513) 287-3842.

Very truly yours,

Anita M. Schafer / mark Paralepal

Paralegal

AMS/mak

Enclosures

# RECEIVED

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PUBLIC SERVICE COMMISSION ULH&P ADMINISTRATIVE CASE NO. 387 Commission Order (12/20/01) – Data Request Request Date: December 20, 2001 Response Date: July 1, 2003

CO-DR-001

## **REQUEST:**

1. Actual and weather-normalized energy sales for the just completed calendar year. Sales should be disaggregated into native load sales and off-system sales. Off-system sales should be further disaggregated into full requirements sales, firm capacity sales, and non-firm or economy energy sales. Off-system sales should be further disaggregated to identify separately all sales where the utility acts as a reseller, or transporter, in a power transaction between two or more other parties.

## **RESPONSE:**

Actual and weather-normalized sales for 2002 are provided in the table below. ULH&P does not have any off-system sales.

The Union Light, Heat and Power Company Electric Energy Sales - Mwh					
	2002				
	Actual	Weather Normal			
January	338,053	352,260			
February	301,710	289,161			
March	324,193	299,346			
April	297,249	278,137			
Мау	284,284	294,321			
June	383,053	343,883			
July	440,280	394,092			
August	429,422	367,880			
September	359,685	302,381			
October	297,350	302,081			
November	305,066	305,263			
December	334,774	331,849			
Total	4,095,119	3,860,654			

## WITNESS RESPONSIBLE: Donald J. Rottinghaus/Richard G. Stevie

## CO-DR-002

## **REQUEST:**

2. A summary of monthly power purchases for the just completed calendar year. Purchases should be disaggregated into firm capacity purchases required to serve native load, economy energy purchases, and purchases where the utility acts as a reseller, or transporter, in a power transaction between two or more other parties.

## **RESPONSE:**

All of Union Light's power purchases for 2002 were firm capacity purchases to serve native load. Please see the "Actual" column in the response to CO-DR-001 for a summary of these native load requirements/purchases.

## CO-DR-003

## **REQUEST:**

3. Actual and weather-normalized monthly coincident peak demands for the just completed calendar year. Demands should be disaggregated into (a) native load demand (firm and non-firm) and (b) off-system demand (firm and non-firm).

#### **RESPONSE:**

Actual and weather-normalized monthly coincident peak demands for 2002 are provided in the table below. ULH&P does not have any off-system sales.

2002		
Actual	Weather Normal	
553	610	
583	570	
571	537	
567	492	
618	594	
690	725	
784	798	
751	758	
704	681	
617	520	
542	541	
592	642	
784	798	
	553 583 571 567 618 690 784 751 704 617 542 592	

# The Union Light, Heat and Power Company Electric Energy Demands - Mw

#### **CO-DR-004**

#### **REQUEST:**

4. Load shape curves that show actual peak demands and weather-normalized peak demands (native load demand and total demand) on a monthly basis for the just completed calendar year.

#### **RESPONSE:**



The Union Light, Heat & Power Company Load Shape - 2002

WITNESS RESPONSIBLE: Richard G. Stevie

#### **CO-DR-005**

## **REQUEST:**

5. Load shape curves showing the number of hours that native load demand exceeded these levels during the just completed calendar year: (1) 70% of the sum of installed generating capacity plus firm capacity purchases; (2) 80% of the sum of installed generating capacity plus firm capacity purchases; (3) 90% of the sum of installed generating capacity plus firm capacity purchases.

#### **RESPONSE:**

This request is inapplicable to ULH&P since ULH&P owns no generation.

#### CO-DR-006

#### **REQUEST:**

6. Based on the most recent demand forecast, the base case demand and energy forecasts and high case demand and energy forecasts for the current year and the following four years. The information should be disaggregated into (a) native load (firm and non-firm demand) and (b) off-system load (both firm and non-firm demand).

#### **RESPONSE:**

	The Union Light, Heat and Power Company Electric Forecast				
	Demand	i - Mw	Energy -	Mwh	
	Base	High	Base	High	
2003	848	850	3,907,910	3,920,665	
2004	864	866	3,982,976	3,998,171	
2005	879	883	4,065,712	4,087,582	
2006	890	895	4,160,857	4,190,034	
2007	905	911	4,246,751	4,285,503	

ULH&P does not have any off-system load at this time.

WITNESS RESPONSIBLE: Richard G. Stevie

## **CO-DR-007**

## **REQUEST:**

7. The target reserve margin currently used for planning purposes, stated as a percentage of demand. If changed from what was in use in 2001, include a detailed explanation for the change.

#### **RESPONSE:**

From a technical standpoint, reserves should be adequate for the security of operation, which considers a combination of weather-induced load, probability of units on outage, maintenance scheduling, and operating reserve obligations under the East Central Area Reliability Coordination Agreement (ECAR).

For the period 2003-2006, ULH&P has a firm full-requirements wholesale contract with CG&E that serves ULH&P's load. Therefore, a target reserve margin is not applicable for this period. As discussed in previous IRP filings since 1995, Cinergy and ULH&P have used a 17% planning reserve margin, along with loss of load hours (LOLH) and expected unserved energy (EUE) criteria to ensure that native load needs are met. Since 2000, Cinergy has reduced this to a 15% reserve margin (as a minimum) along with the same LOLH (annual LOLH less than 175) and EUE (less than 0.18%) criteria used in past IRPs.

Reserve margins are an important obligation for a number of reasons. First, the reserve margin must cover Operating Reserves. The Operating Reserve is a requirement of both ECAR and NERC to ensure that the real time needs of the electric system are met. The requirement is:

- one (1) percent of the projected peak load as "Load and Frequency Regulation Reserve" - to provide "on-line" generation for load and frequency regulation
- one and one-half (1½) percent of the projected peak load as "Spinning Reserve" which is required to be "on-line" and capable of being supplied within ten minutes
- one and one-half (1½) percent of the projected peak load as "Supplemental Reserve" – which is required to be capable of being supplied to the system within ten minutes from "on-line" or "off-line" resources,

Thus, the total Operating Reserve requirement is four percent (4%) of projected net peak load.

Second, the reserve margin must cover a level of unscheduled outages that inevitably occur. Even the best-maintained generating system will experience unit outages and derates, and there is always the possibility that such an outage or outages will occur when the units are most needed. On the Cinergy system, 8% is a reasonable expected margin for normal outages and derates, based on historical experience.

Third, there is always the possibility that the actual load may differ from the projected load forecast due to changed economic conditions, or that the weather may be different from the temperature on which the load forecast was based (without being "extreme"). For example, ULH&P's load forecasting personnel estimate that a 1-degree increase in temperature can result in approximately a 1.1% increase in ULH&P's load to be served. Since ULH&P does not use extreme temperatures as a basis for its load forecast (ULH&P uses approximately 93 degrees), ULH&P considers an additional 3% reserve component to cover weather-induced load (for a total of 15% reserve) as a bare minimum. History shows that temperatures in Kentucky can get above 96 degrees on a hot summer day.

The reserve margin criterion represents a balance that must be struck between reliability needs and costs. Lower reserves may help restrain rates, but there are clearly limits to and tradeoffs for any gains from lower reserves, as some past summers have taught us. For example, if using a reserve level that is too low causes a utility to increase its reliance on purchases from the spot market, customers incur additional costs. These costs can be substantial if the spot market price is experiencing a spike at the time purchases are made. If shortages in the wholesale market occur such that load must be curtailed, customers incur additional costs such as loss of production and inconvenience. ULH&P is continuing its evaluations of how best to optimize its planning reserve margin level, but believes that 15% is the minimum that it should use as a regulated utility in today's environment.

In addition, because of the relatively small size of ULH&P's system, it may be necessary to use a higher reserve margin to provide the same level of reliability that a 15% reserve margin provides to a larger system. For example, many utilities use reserve margin criteria that contain a component to cover the loss of the largest unit on the system. Depending on the sizes and mix of resources used to serve ULH&P's load after 2006, a higher reserve margin may be needed. Alternatively, ULH&P may need to secure contracts to back-up a portion of its capacity, which can also affect the ultimate reserve margin requirement.

WITNESS RESPONSIBLE: Diane Jenner

## **CO-DR-008**

## **REQUEST:**

8. Projected reserve margins stated in megawatts and as a percentage of demand for the current year and the following 4 years. Identify projected deficits and current plans for addressing these. For each year identify the level of firm capacity purchases projected to meet native load demand.

## **RESPONSE:**

As discussed in the response to CO-DR-007, reserve margins are not applicable to ULH&P for the current year and continuing through at least 2006. Because of the nature of ULH&P's firm contract, the level of firm capacity purchases will be equal to ULH&P's net firm load after DSM, Interruptible, and DLC/RTP/CallOption impacts. The estimated peak amount of such purchases for each remaining year of the firm wholesale contract, which was calculated by deducting projected Incremental DSM, Interruptible, and DLC/RTP/CallOption impacts from the peak demand forecast (see response to CO-DR-006), is as follows:

Year	Projected Peak Firm Capacity Purchase (MW)
2003	843
2004	857
2005	869
2006	877

For 2007, when the current firm full requirements wholesale contract has expired, and assuming this contract is not renewed, ULH&P is currently planning for a minimum reserve margin of 15 percent (see response to CO-DR-007). Based on a projected net peak demand of 889 MW in 2007, this would result in a total system capacity requirement of approximately 1022 MW. The actual reserve margin will, of course, depend on the sizes and mix of resources that represent the overall least cost plan for reliably meeting ULH&P load in the long run. ULH&P will continue to consider a mix of resources, including base load, intermediate, peaking, and firm purchases, along with DSM, Interruptible, and DLC/RTP/CallOption programs. The extent to which firm purchases will be used to meet native load demand is highly dependent on the plan that is ultimately chosen.

#### WITNESS RESPONSIBLE: Diane Jenner

## CO-DR-009

## **REQUEST:**

9. By date and hour, identify all incidents during the just completed calendar year when reserve margin was less than the East Central Area Reliability Council's ("ECAR") 1.5% spinning reserve requirement. Include the amount of capacity resources that were available, the actual demand on the system, and the reserve margin, stated in megawatts and as a percentage of demand. Also identify system conditions at the time.

## **RESPONSE:**

This request is inapplicable to ULH&P since ULH&P owns no generation.

# CO-DR-010

# **REQUEST:**

10. A list identifying and describing all forced outages in excess of 2 hours in duration during the just completed calendar year.

## **RESPONSE:**

This request is inapplicable to ULH&P since ULH&P owns no generation.

# CO-DR-011

# **REQUEST:**

11. A list that identifies scheduled outages or retirements of generating capacity during the current year and the following four years.

## **RESPONSE:**

This request is inapplicable to ULH&P since ULH&P owns no generation.

## **CO-DR-012**

#### **REQUEST:**

12. Identify all planned base load or peaking capacity additions to meet native load requirements over the next 10 years. Show the expected in-service date, size and site for all planned additions. Include additions planned by the utility, as well as those by affiliates, if constructed in Kentucky or intended to meet load in Kentucky.

#### **RESPONSE:**

In preparation for the stand-alone IRP that ULH&P committed to provide by June 30, 2004, ULH&P has been analyzing various alternatives to meeting reliably the long-term resource requirements of its customers at stable prices.

As a result of this analysis, ULH&P is exploring the acquisition of 400 - 500 MW of baseload generation, 100 - 200 MW of base/intermediate generation, and 500 - 600 MW of peaking generation sometime before the expiration of its current Power Sales Agreement. However, the specific acquisitions being explored will require extensive regulatory approvals, so specific in-service dates, etc. cannot be articulated with certainty.

WITNESS RESPONSIBLE: Diane Jenner

# CO-DR-013

## **REQUEST:**

- 13. The following transmission energy data for the just completed calendar year and the forecast for the current year and the following four years:
  - a. Total energy received from all interconnections and generation sources connected to the transmission system.
  - b. Total energy delivered to all interconnections on the transmission system.
  - c. Peak load capacity of the transmission system.
  - d. Peak demand for summer and winter seasons on the transmission system.

## **RESPONSE:**

- **a:** All of the energy requirements of ULH&P are provided through the connections with the CG&E 69 and 138 kV system. See response to Question 1 and 6 that relate to the actual and forecasted values for energy. ULH&P also has two interconnections at 69 kV with East Kentucky Power Cooperative (EKPC) but these were primarily built to provide alternative transmission sources to both ULH&P and EKPC to maintain reliable service to their customers in the immediate area of the interconnections. These interconnections are operated normally opened and are used only during emergency conditions (transmission outages).
- **b:** Since ULH&P does not have any generation connected to its transmission system and since the transmission system is planned, designed and operated to primarily serve the area load, and since the two interconnections with EKPC are operated normally open, there is no energy delivered from ULH&P to the interconnections.
- c: Neither Cinergy nor the electric utility industry has defined a term "peak load capacity of the transmission system". There is no single number that defines the capacity of a transmission system due to the interconnected nature of the electric grid. Cinergy does perform assessments of its transmission system to ensure all firm loads can be served in a reliable manner. This ensures that the transmission system has the "capacity" required to reliably serve the load.

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**d:** See response to Item 6. Since ULH&P does not have any generation connected to its transmission system, the demand on the transmission system is equal to the ULH&P load requirements.

WITNESS RESPONSIBLE: Ronald Jackups

## **CO-DR-014**

# **REQUEST:**

14. Identify all planned transmission capacity additions for the next 10 years. Include the expected in-service date, size and site for all planned additions and identify the transmission need each addition is intended to address.

#### **RESPONSE:**

The following is a current list of planned ULH&P transmission projects.

Description	In Service Date	Comments
Extend and Loop 69 kV circuit through new Oakbrook Substation	6-27-03(Completed)	For local load growth.
Reconductor sections of 69 kV circuit between Wilder and White Tower substations	6-01-04	For local load growth.
Loop 69 kV circuit through new Crittenden Substation	6-01-04	For local load growth.
Extend and Loop 69 kV circuit through new Mt. Zion Substation	6-01-05	For local load growth.

# WITNESS RESPONSIBLE: Ronald Jackups/Ron Snead