

Florida Power

JEFFERY A. FROESCHLE CORPORATE COUNSEL

March 8, 1996

Ms. Blanca S. Bayó, Director Division of Records and Reporting Florida Public Service Commission 2540 Shumard Oak Blvd. Tallahassee, Florida 32399-0850

960316-E.I

Petition for Approval of Real Time Pricing Demonstration Re: Tariff by Florida Power Corporation

Dear Ms. Bayó:

Enclosed for filing in the subject docket are fifteen copies of Florida Power Corporation's Petition for approval of Real Time Pricing Demonstration Tariff.

Please acknowledge your receipt of the above filing on the enclosed copy of this letter and return to the undersigned. Also enclosed is a 3.5 inch diskette containing the above-referenced document in WordPerfect format. Thank you for your assistance in this matter.

Very truly your

JAF/ib Enclosure

RECEIVED & FILED

EPSC-BUREAU OF RECORDS

DOCUMENT NUMBER-DATE

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for Approval of Real Time Pricing Demonstration Tariff by Florida Power Corporation. Docket No. 960316-EL

Submitted for filing: March 8, 1996

PETITION

Florida Power Corporation (FPC or the Company) hereby petitions this Commission to authorize the Company to implement, for demonstration purposes, a real-time pricing tariff, Rate Schedule RTP-1, which provides firm general service customers with prices on an hourly basis. This petition, along with the information and rate schedule set forth in Attachments A and B hereto, is intended to meet the requirements of Rule 25-9.005(4)-(5) of the Florida Administrative Code. In support of its petition, Florida Power states as follows:

Introduction

1. The name of the Petitioner and its business address is:

Florida Power Corporation 3201 34th Street South Post Office Box 14042 St. Petersburg, FL 33733-4042

Notices and communications with respect to this petition and docket should be addressed to:

FLORIDA POWER CORPORATION

Jeffery A. Froeschle
Corporate Counsel
Florida Power Corporation
3201 - 34th Street South - A5E
St. Petersburg, Florida 33711

William C. Slusser Director, Pricing Florida Power Corporation 3201 - 34th Street South - G2T St. Petersburg, FL 33711

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Proposed Real Time Pricing Demonstration Tariff

- 3. The objective of the General Service Real Time Pricing Demonstration is to evaluate customer responses to hourly pricing signals. Customers' responses to the hourly price signals will enable Florida Power to evaluate whether customers prefer having more control over their electric bill and whether they can increase their production while lowering their total bill. Ultimately, the real-time pricing option should give the customers a tool to control their energy costs and increase their profitability. For FPC, the customers' responses to price changes should improve the Company's operating efficiencies (i.e., cycling of plants). The Company expects that the recruitment of participants and evaluation of the real time pricing demonstration will require up to a four year period.
- 4. Florida Power Corporation's proposed RTP demonstration entails the Company providing hourly energy prices that are quoted to participating customers by 4:00 p.m. the day before the prices will be applicable. Under the proposed demonstration tariff, base and fuel charges vary in relation to the Company's marginal operating cost. The applicable Energy Conservation Cost Recovery and Capacity Cost Recovery charges are equal to the respective GSD-1 factors per the BA-1. Attachment A to this petition is a detailed description of the proposed demonstration which includes a discussion of the demonstration's objectives and a description of how the demonstration will be implemented. Attachment A also includes a general discussion of the type of data that the Company expects to collect and retain through operation of the demonstration.

- 5. The terms and conditions of Rate Schedule RTP-1 are set forth in Attachment B, Rate Schedule RTP-1 Proposed Demonstration Tariff. Under the terms of Florida Power Corporation's proposed demonstration, the RTP-1 rate schedule will be limited to 10 customers, each having a demand of at least 1 MW.
- 6. The estimated annual revenue to be derived under the proposed rate schedule cannot be determined. However, customers will not be charged more on the demonstration than they would have paid under their otherwise applicable rate schedule applied to their actual usage while on the demonstration.
- 7. Florida Power Corporation is not seeking, at this time, to recover expenses associated with this demonstration through the Energy Conservation Cost Recovery clause. If the data gathered from this demonstration reveals that customers modify their energy use in such a way as to reduce the growth of weather-sensitive peak demand or to otherwise advance the policy objectives of the Florida Energy Efficiency Conservation Act and Rule 25-17.001, Florida Administrative Code, the Company may request expenses for this demonstration be recovered through the clause. Florida Power hereby reserves the right to petition the Commission separately for crediting load changes directly due to the demonstration toward the achievement of Demand-Side Management goals.
- 8. Unless the results of the demonstration dictate otherwise, Florida Power Corporation intends to propose a full scale permanent product offering after the completion of the demonstration. It is anticipated that the demonstration will last approximately four years and a final report will be filed within 180 days of completion of the study.
- In prior dockets, the Commission approved similar demonstration real-time pricing tariffs for other Florida utilities. See, In Re: Petition for

Approval of Proposed Pilot/Experimental Real Time Pricing Program and the Associated Rate Schedule by Gulf Power Company, Docket No. 941102-EI, and In re: Petition of Florida Power & Light Company for Approval of Experimental.

Real Time Pricing Rate, Rate Schedule RTP-GX, Docket No. 940423-EG.

 Florida Power Corporation is not aware of any disputed issues of material fact.

Implementation

- 11. Upon Commission approval of the real-time pricing demonstration tariff, Florida Power will begin recruiting customers for the demonstration. Each customer that wishes to participate in the proposed demonstration will be required to enter into a Real Time Pricing Service Agreement with Florida Power Corporation. A copy of the proposed Real Time Pricing Service Agreement is attached to this Petition as Attachment C. Florida Power Corporation will assist customers in obtaining energy monitoring equipment, and institute the necessary measures for sending and billing hourly prices.
- 12. Florida Power requests that the Commission approve this Petition and grant its staff the authority to administratively approve the effective date to coincide with a) the time when the Company issues the fuel forecast that follows the implementation of a new dispatch model, and b) the time when FPC has the capability to efficiently and accurately bill customers under the new rate, which is estimated to be April 1, 1996.

WHEREFORE, Florida Power Corporation respectfully requests that the Commission enter an order approving the proposed real-time pricing demonstration tariff set forth in Exhibit B hereto and authorizing its staff to administratively approve the effective date of the tariff upon proper notification from Florida Power Corporation.

Respectfully submitted,

FLORIDA POWER CORPORATION

BY:

Jeffers A. Froeschle 326 / 34th Street South St. Petersburg, FL 33711 (813) 866-5787

ATTACHMENT A:

REAL TIME PRICING DEMONSTRATION OBJECTIVES & PROGRAM DESCRIPTION

ATTACHMENT A

REAL TIME PRICING (RTP-1) DEMONSTRATION

Florida Power's proposed real time pricing demonstration project is based on day ahead hourly pricing. Under the proposed RTP agreement, the basic components of a one-part design are present. FPC's rate design is revenue neutral on a class basis consisting of Generl Service customers having a demand of 1 MW or more. Hourly prices will be transmitted to participating customers by 4:00 p.m. the day before they are applicable. FPC's real time price will reflect both marginal and embedded costs. The overall hourly energy charge includes embedded generation costs, ECCR, CCR and fuel, with incremental costs serving to shape the hourly prices throughout the year. Detailed objectives and the program description for FPC's proposed RTP demonstration are as follows:

I. Demonstration Objectives

a) Customer Choice

An objective of the demonstration is to provide customers with options and to increase the customer's ability to control their electricity costs, if they choose to do so. By giving the customer more control over their energy costs, combined with the appropriate pricing signals, they may choose to alter their usage to increase their overall profitability. Hence, real time pricing may increase the customer's ability to compete.

b) Energy Efficiency

By sending price signals that emphasize Florida Power Corporation's incremental cost conditions, customers should be induced to reduce

consumption when prices are high and to consume during those times when prices are low. If customers respond as predicted to the price signals and load is curtailed during high priced periods, Florida Power Corporation's peak demand requirement will decrease. Conversely, increasing load during low priced times should result in Florida Power Corporation increasing sales during periods when plants are operating at or below minimum load levels. The proposed demonstration will allow Florida Power Corporation to investigate whether load shifting could ultimately result in improving the Company's system load factor and reducing the cycling of baseload plants.

c) Economic Efficiency

Prices derived on the basis of marginal costs provide each customer with a better indication of what it costs to produce energy. Such a pricing arrangement provides a mechanism for participating customers to make better energy purchasing decisions, thereby benefiting Florida Power Corporation and its other electric customers.

d) Customer Satisfaction and Acceptance

Throughout the demonstration, Florida Power Corporation intends to capture information on how satisfied the participating customers are with the RTP offering and which customer types are reacting the most to hourly price signals. This data should prove valuable to FPC in estimating the market potential of the product.

e) Price Elasticity

Florida Power Corporation intends to capture information regarding how customers shift their operations based on price signals. Specifically, the demonstration will provide an excellent opportunity for the Company to work together with customers to improve the customers' energy efficiency strategy. The outcome of the demonstration should aid FPC in determining the amount of energy a customer will need to shift or shed to make the purchase of an energy management system cost justifiable.

II. Program Description

a) Participation

Participation will be limited to a maximum of 10 customers for this demonstration. Participation will be limited to firm-service customers with a measured maximum demand of 1 MW or greater.

Customer participation will be voluntary. The Company recognizes that some customers will be limited in their ability to purchase energy under a pricing plan which includes: i) pricing variations and unknown future prices; ii) transaction costs associated with receiving, evaluating, and acting on daily prices; iii) assessing and managing risk; and, iv) a variety of other technical and economic factors.

Likewise, the Company is not obligated to accept a customer on the demonstration if there is a reasonable likelihood that the customer could substantially reduce their electric bill without taking any action. Permitting such a customer to participate in the demonstration will undermine the data gathering purpose of the demonstration.

It is desirable to have a variety of customer types participate to optimize the benefits of the demonstration. Therefore, a customer may be rejected by the Company from participating in the demonstration if their participation will create undue redundancy. The customer will be required to maintain participation in the program for a full year. They will be allowed to switch to another available FPC rate only on the anniversary of participation in the RTP demonstration. This requirement will prevent customers from taking RTP service during months in which it may be more economical than their otherwise applicable rate and switching to another rate when RTP may not be economical.

b) Price

The customer charge is unrelated to the customer's actual usage and does not vary from month to month. It is set at the same amount as shown on Florida Power Corporation's GSDT-1 schedule. The embedded costs FPC incurs for transmission are recovered through a coincident demand charge. This charge is set at \$1.25/kW of demand coincident with the system's monthly maximum demand. Using coincident demand to recover these charges protects the customer from being penalized for increasing usage during FPC's lowest priced hours. The embedded costs FPC incurs for distribution is recovered through a non-coincident demand charge. This charge is \$1.50/kW of the customer's maximum hourly demand during the billing period. Since distribution costs vary based on maximum customer demand, the use of non-coincident demand sends the appropriate price signal. Applicable taxes and franchise fees are added to customer bills and likewise are not included in the hourly prices delivered to participating customers.

The RTP hourly energy prices are linked with Florida Power Corporation's embedded costs. Incremental costs serve to shape the price for each hour throughout the year. The incremental cost indicator used is Florida Power Corporation's system lambda. Lambda (λ) represents the incremental cost of generating the next MWh based on available generation and system load at any point in time.

RTP hourly prices are derived using the day ahead projection of FPC's system lambdas, and adjusting these lambdas to include embedded generation costs, Energy Conservation Cost Recovery and Capacity Cost Recovery charges. The resulting prices quoted to the participating customers for the following day consist of a single cents per kWh component for each hour. Prices quoted on an hourly basis will be uniform to all participating customers. Also added to each customer's monthly bill will be a customer charge, coincident demand charge and non-coincident demand charge.

The hourly energy prices are determined based on three (3) conditions:

Condition 1: When λ is ≤ 1.6 cents per kWh,

 $p = fuel ratio (\lambda) + [(base)(low fixed multiplier)] + ECCR + CCR$

Condition 2: When λ is > 1.6 cents per kWh and \leq 4.8 cents per kWh,

 $p = fuel ratio (\lambda) + [(base)(varying multiplier)] + ECCR + CCR$

Condition 3: When λ is > 4.8 cents per kWh,

 $p = \text{fuel ratio } (\lambda) + [(\text{base})(\text{high fixed multiplier})] + ECCR + CCR$ where,

p = the hourly price expressed in cents per kWh.

- λ = FPC's system lambda expressed in cents per kWh. Lambda represents the incremental operating cost to supply an additional unit of electricity.
- fuel ratio = the levelized system average fuel factor/average system loadweighted value of λ during the period used to determine the fuel factor. The effect of this ratio is to recover average fuel cost in proportion to hourly incremental fuel cost.
- base = the embedded generation costs which is set at 1.695 cents per kWh.
 This amount is subject to change only as base rates are revised.
- ECCR = the Energy Conservation Cost Recovery factor which is set equal to the GSD-1 factor per BA-1. Effective April 1, 1996 the factor will be .209 cents per kWh at secondary voltage and is subject to change when BA-1 is revised.
- CCR = the Capacity Cost Recovery factor which is set equal to the GSD-1 factor per BA-1. Effective April 1, 1996 the factor will be .622 cents per kWh at secondary voltage and is subject to change when BA-1 is revised.
- low multiplier = a factor used to recover the minimal amount of embedded generation costs during those periods when system lambda is extremely low.

high multiplier = a factor used to recover the maximum amount of embedded generation costs during those periods when system lambda is extremely high.

varying multiplier = a factor used to increase the prices as lambda rises from 1.6 cents per kWh toward 4.8 cents per kWh.

c) Metering

Solid-state data recorders will be used for billing and load research purposes. For RTP customers, these recorders will provide 15-minute pulse data that will be translated into the hourly usage data to calculate the RTP bill.

d) Customer Bills

Customers will be provided with detailed bills that list each hour of usage and the hourly price in effect at that time. For the customer's convenience, the bill will contain a summary page of pertinent data. After each twelve consecutive months of participation in the RTP demonstration, the amount paid on RTP-1 will be compared to the amount the customer would have paid on their otherwise applicable rate. If the RTP-1 amount is greater, the customer will be credited the difference.

e) Research

Periodically, participating customers will be interviewed to ascertain their satisfaction with the demonstration. Their input will be vital for determining if FPC should modify the product before it becomes a permanent offering. Fifteen (15) minute demand (kW) will be recorded for each customer and retained electronically. This data will be integrated into hourly load data on

an individual customer basis. The load profiles observed prior to the demonstration for each customer will be used for comparison with profiles obtained during the demonstration. This comparison will be used to assess load shifting and peak demand reductions as well as changes in energy usage (kWh). A qualitative analysis will be done to determine the types of actions customers take to respond to varying price signals.

ATTACHMENT B:

RATE SCHEDULE RTP-1 PROPOSED DEMONSTRATION TARIFF



Page 1 of 5

Rate Code

302

303

301 (Secondary)

(Primary)

(Transmission)

RATE SCHEDULE RTP-1

LIMITED AVAILABILITY EXPERIMENTAL RATE REAL TIME PRICING

AVAILABILITY:

Availability is limited to ten (10) customers. This rate is experimental and available through the execution of a Real Time Pricing Service Agreement with FPC. Customer participation requires the mutual agreement of both the Company and the Customer.

Service under this experimental schedule must commence before December 31, 1998, unless extended by order of the Florida Public Service Commission.

APPLICABLE:

Applicable to customers who are otherwise eligible for service under rate schedules GS-1, GSD-1, GST-1, or GSDT-1, with a measured monthly demand of 1 MW or greater and who meet all requirements and provisions set forth in this rate.

CHARACTER OF SERVICE:

Continuous service, alternating current, 60 cycle, single-phase or three-phase, at the Company's standard voltage available.

LIMITATION OF SERVICE:

Standby or resale service not permitted hereunder. Service under this rate is subject to the Company's currently effective and filed "General Rules and Regulations for Electric Service."

RATE PER MONTH:

Customer charge:

Secondary Metering Voltage: \$ 19.20 Primary Metering Voltage: \$155.50 Transmission Metering Voltage: \$737.50

Demand Charges:

Coincident Demand Charge: \$1.25 per KW of Coincident Demand
Non-coincident Demand Charge: \$1.50 per KW of Maximum Demand

ISSUED BY: W. C. Slusser, Jr., Director, Pricing Department

EFFECTIVE:



late Code

301

(Secondary) (Primary) Page 2 of 5

Energy Charges:

The following charges shall apply to kWh usage each hour and shall be summed for all hours of the billing period:

Non-fuel Energy Charge:

1.695 cents per kWh * f(λ)

plus

Energy Conservation Cost Recovery Charge:

GSD-1 factor per BA-1

plus Capacity Cost Recovery Charge:

GSD-1 factor per BA-1

Fuel Cost Recovery Factor Charge:

Ratio * \u03b2

where,

- λ = Florida Power Corporation's system incremental fuel cost, expressed in cents/kWh.
- f(λ) = A factor computed for each hour pursuant to a formula based on the value λ projected for that hour. The formula shall be revised annually and submitted to the FPSC to be treated as confidential information. The Company shall satisfy the FPSC staff that the application of this factor to the hourly load characteristics of firm general service customers over 1,000 KW results in the average load-weighted value of this factor to be equal to one.

Ratio = This ratio shall be revised with each change in the system average fuel factor and shall be calculated as the ratio of the levelized system average factor to the average system load-weighted value of λ during the period used as the basis for determining the fuel factor.

ISSUED BY: W. C. Slusser, Jr., Director, Pricing Department EFFECTIVE:



Rate Codes 301 (Secondary) Page 3 of 5

Notification Of Hourly Prices: The Company will notify the Customer by 4:00 p.m. prevailing clock time of each work day the sum of the energy of charges that are applicable on an hourly basis, for the next twenty-four (24) hours beginning at 12:00 a.m. (midnight). Except during unusual times of high risk, the Company will make available prices for Saturday through Monday on the previous Friday. More than day-ahead pricing may also be used for holidays as defined in the Company's conventional tariffs.

The Company is not responsible for a customer's failure to receive and act upon the hourly RTP-1 prices. If a customer does not receive these prices, it is the customer's responsibility to inform the Company so the prices may be supplied.

DETERMINATION OF DEMAND:

Coincident demand shall be defined as the customer's hourly demand at the time of the system's monthly maximum demand. Non-coincident demand shall be defined as the customer's maximum hourly demand during the billing period.

DELIVERY VOLTAGE CREDIT:

When a customer takes a service under this rate at a delivered voltage above standard distribution secondary voltage, the maximum demand shall be subject to the following credits:

For Distribution Primary Delivery Voltage: For Transmission Delivery Voltage:

\$0.30 per kW of non-coincident demand \$0.69 per kW of non-coincident demand

METER VOLTAGE ADJUSTMENT:

Metering voltage will be at the option of the Company. When the company meters at a

ISSUED BY: W. C. Slusser, Jr., Director, Pricing Department EFFECTIVE:

EFFECTIVE



Rate Code

101 (Secondary) 102 (Primary) 101 (Transmission Page 4 of 5

voltage above distribution secondary, the applicable following reduction factor shall apply to the monthly energy charge, distribution charge and delivery voltage credit hereunder:

Metering Voltage Reduction Factor

Distribution Primary 1.0% Transmission 2.0%

POWER FACTOR:

Bills computed under the above rate per month charges will be increased 22 cents for each KVAR by which the reactive demand exceeds numerically .62 times the maximum kW demand, and will be decreased 22 cents for each KVAR by which the reactive demand is less than, numerically, .62 times the maximum kW demand.

ADDITIONAL CHARGES:

Gross Receipts Tax Factor: See Sheet No. 6.105
Right of Way Utilization Fee: See Sheet No. 6.106

Municipal Tax: See Sheet No. 6.106

Sales Tax: See Sheet No. 6.106

MINIMUM BILL:

The minimum monthly bill shall be the Customer Charge.

Where special equipment to serve the Customer is required, the Company may require a specified minimum charge.

TERMS OF PAYMENT:

Bills rendered hereunder are payable within the time limit specified on the bill at Company designated locations.

TERMS OF CONTRACT:

Service under this experimental rate schedule shall be for a minimum period of one (1) year. Service under this rate schedule may be terminated, upon 60 days written notice by either the Company or the Customer. All termination notices will become effective

ISSUED BY: W. C. Slusser, Jr., Director, Pricing Department EFFECTIVE:

EFFECTIV



Rate Code 301 (Secondary) 302 (Primary) Page 5 of 5

on the annual anniversary date of the contract. After terminating service under this rate, the Customer may not return to this rate during the experimental period.

SPECIAL PROVISIONS:

- Customers will be required to execute a Service Agreement which will include standard terms and conditions including the confidentiality of prices.
- The Company may, under this experimental rate, provide additional tariff features which the customer may elect.
- 3. The Company will furnish service under this rate at a single voltage. Equipment to supply additional voltages or additional facilities for the use of the Customer shall be furnished and maintained by the Customer. The Customer may request the Company to furnish such additional equipment, and the Company, at its sole option, may furnish, install and maintain such additional equipment, charging the Customer for the use thereof at the rate of 1.67% per month of the installed cost of such additional equipment.
- 4. The Company shall not be required to accept customers on this experimental rate if the customer's participation in the experiment would: a) not be economically justified for the Company, or b) create undue redundancy within the experiment. Customers will be evaluated on a first-come, first-served basis. Customer participation is at the mutual agreement of the customer and the Company.
- Service under this rate schedule shall commence with the first full billing period following the installation date of metering and all other required equipment. Billing shall be based on a calendar month.

ISSUED BY: W. C. Slusser, Jr., Director, Pricing Department

EFFECTIVE:

ATTACHMENT C:

REAL TIME PRICING SERVICE AGREEMENT

FLORIDA POWER CORPORATION

REAL TIME PRICING SERVICE AGREEMENT

3000	Service Agreement, (hereinafter referred to as Agreement, 199, by and between		(hereinafter
referred to as	the "Customer"), located at	in	, Florida, and
Florida Power	Corporation, a Florida corporation, with offices a ferred to as "FPC").	t 3201 34th Street South, St. Pet	
In cor	nsideration of the covenants and agreements set	forth herein, the parties hereto agr	ee as follows:
FPC Agrees:			
1.	To furnish electric service subject to the terms (RTP-1) as currently approved or as may be mo Commission (the "Commission"). A copy of Fi	dified from time to time by the Flo	rida Public Service
2.	To provide the Customer with an analysis of t annual forecasted incremental costs.	their past usage (up to 12 months	i) applied to FPC's
3.	To provide the Customer with Calendar Month	billing.	
The Customer	Agrees:		
1.	To participate in FPC's Real-time pricing dem Schedule RTP-1.	onstration subject to the Terms	and Conditions of
2.	To notify FPC by 5:00 p.m. Eastern Time on the received by 4:00 p.m. Eastern Time. The Custo will not prevent their use for billing purposes.	day of scheduled communication mer's failure to notify FPC of non-r	if the prices are not eceipt of the prices
3.	That FPC's hourly prices are confidential infor currently participating in FPC's Real-Time prici agrees not to disclose FPC's hourly prices to position with the following job title:	ing demonstration. Therefore, the	e Customer further
	Position/Title		
	Position/Title		
	Position/Title		

It is Mutually Agreed That:

On an annualized basis, the Customer's bill under Schedule RTP-1 shall not exceed an amount equal
to that which the Customer would have paid under the rate schedule the Customer was on prior to
joining the demonstration.

- If FPC determines that the Gustomer's participation in the Real-Time Pricing demonstration will require
 the installation by FPC of additional facilities beyond those which would otherwise be required for
 service to the Customer, service under Schedule RTP-1 will not commence prior to the installation of
 such facilities.
- In the event that Schedule RTP-1 is for any reason no longer filed with, and approved by, the Commission, or if Schedule RTP-1 is terminated for any reason by the Commission or the Company, this Agreement shall automatically terminate.
- 4. If there is a change in the legal identity of the Customer receiving service under Schedule RTP-1, service under this schedule will automatically terminate upon notice to FPC of the change in the legal identity of the Customer, unless the Customer, under its new legal identity, and FPC execute a new fleal Time Pricing Service Agreement.
- B. This Agreement is subject to FPC's "General Rules and Regulations for Electric Service" and the Rules of the Commission.
- This Agreement supersedes all previous agreements and representations, either written or oral, made between FPC and the Customer with respect to matters herein contained. Any modification(s) of this Agreement must be approved in writing by FPC and also approved by the Commission.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed.

CUSTOMER	FLORIDA POWER CORPORATION	
Customer (Name of organization)		
Byl	By:Signature of Authorized Representative	
Title	Title	

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