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Folder Title:
Climate Change Other Pepco/GSA/Capitol Region [1]

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John D. Gibson
09/15/99 11:10:31 AM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP
cc: Janet Anderson/WHCCTF/EOP@EOP
Subject: gsa update

Just got off the phone with Tony. Here's what he wants to do:

1. He wants to NOT do the Wash Gas cogen project now because he doesn't think he's getting a good enough deal. He wants to negotiate harder with them but it simply can't get wrapped up today (which was his deadline).
2. He wants to buy one new chiller for \$1.5 million and is making sure he has the ability to do so and that that will meet his needs for next summer. They would have to buy it outright because according to his people the savings/efficiency aren't great enough on their own to get someone to do it via ESPC -- Janet you may want to look at this again.
3. His general counsel is finalizing the legal justification for sole sourcing on the cogen with Washington Gas (something I asked for a month ago). Based on how that looks and based on what we want him to do, he will either continue negotiating hard with Wash. Gas and try to wrap it up quickly, or put that on the backburner and continue with the RFI/RFP process on cogen generally.

MEMORANDUM

TO: Roger Ballentine

FROM: John Gibson
Janet Anderson

DATE: September 9, 1999

RE: GSA Chiller Replacement/Cogeneration Project

This memo lays out the options with respect to GSA proposed chiller replacement/cogeneration project with Washington Natural Gas and the outstanding GSA RFI. First, some background.

What the GSA/Washington Gas project does: In simple terms, the proposal is to replace GSA's aging water chiller plant equipment (used to cool buildings) with new, higher efficiency models. At the same time, to help finance the chiller replacement and create a revenue stream, GSA will install two gas-fired combustion turbine generators for electricity generation. GSA will use what it needs of this electricity and sell the remainder. Hot exhaust gases from the turbine will then be used to fire one of GSA's boilers used for steam production. The annual savings to taxpayers will be approximately \$3.7 million (Tony is trying to up this number). Greenhouse gas emissions will be reduced by about of 40,000 tons of CO₂. Of this, 5100 tons will be due to the higher efficiency of the new chillers; the rest resulting the self-generation (and sale) of electricity.

Comparison of Washington Gas project with Pepco/Trigen proposal. From what we can tell, these two proposals are a wash environmentally if you only look at the GSA system – although the emissions numbers are difficult to compare directly as the projects are different in concept. A project such as Pepco/Trigen, however, offers approximately double the taxpayer savings (this number is not confirmed) and potentially greater environmental benefits (if you assume some system expansion) but at some later undetermined date.

Implications of project for future improvements: Going ahead with the Washington Gas project will have the effect of precluding some of the more expansive systems upgrades (which have greater environmental benefits) that have been discussed. Specifically, the Pepco/Trigen proposal to supply steam to the GSA system from the coal plant in Alexandria while selling excess steam (and eventually marry up with the Capitol Hill system) would no longer be economically viable. At the same time, there would appear to be no technical reason why going ahead with the Washington Gas project would prevent future system expansion. GSA says they have the steam capacity to supply the Capitol Hill system (if you include both the Central Plant and the West Plant). For chilled water, they currently lack the cooling tower capacity to supply the Capitol Hill system but do have the ability to add additional capacity.

Options:

1. Give GSA the green light to go ahead. This is essentially the "bird in the hand" option. The proposed project is a good one. It addresses an urgent need that GSA has for new chillers, provides

substantial environmental benefits and saves taxpayer dollars. We understand that GSA is still negotiating over some of the contract terms, but that they will have to pull the trigger by September 15th in order for project to be completed in time to meet next summer's cooling needs. The project is probably worthy enough to merit high-level Administration attention. While the contract award – if it happens – will occur too soon for us to do a major event, we should think about a Presidential or Vice Presidential statement. If we want to do an event, we should look down the road to: beginning of new construction (mid-November); delivery of chillers (February/March); delivery of turbines (May).

The downside of this option is that the project may well not be the best that can be done from an engineering, environmental or fiscal standpoint. We should also consider the wisdom and politics of allowing GSA to essentially become an independent power producer (without having undergone a competitive bid process) when other longer term options offer greater benefits. There is also some risk, probably slight, of poisoning relations with Pepco/Trigen who feel that they've been strung along. They also feel that GSA skewed the process by not fully disclosing its chilling capacity needs.

2. Tell GSA to go ahead with chiller replacement only, allowing more time for evaluating broader options. GSA appears to have a truly urgent need to replace chillers. They are exploring what their options are to go ahead with replacing one chiller only (to get them through next summer) in case the Washington Gas deal falls through for whatever reason. They could probably finance this (or replace more than one chiller) through an ESPC. There is some confusion as to how quickly such a contract could be let – we think it could be done in a matter of weeks; GSA seems to think it would take many months.

In any event, this would allow time to properly evaluate (through an RFP) which type of waste heat/steam supply system would provide the most benefits over the life cycle of the project. The downside of this option is that the environmental and fiscal benefits would be deferred – and, in the case of a project on the scale of Pepco/Trigen's, we have to factor in possibility that there will simply be too many hurdles and it will never happen. Presumably, however, if GSA proceeds with an RFP a contract could probably be at least awarded before the end of the Administration. If we choose this option some in GSA would probably be bent out of shape and could make life difficult.

U.S. GENERAL SERVICES ADMINISTRATION
NATIONAL CAPITAL REGION

HEATING OPERATION AND TRANSMISSION DISTRICT

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REPORT SUMMARY:
EVALUATION OF RESPONSES TO
REQUEST FOR INFORMATION
DISTRICT ENERGY OPTIONS

August 13, 1999

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SUMMARY AND RECOMMENDATIONS

On June 1, 1999, the U.S. General Services Administration National Capital Region issued a Request for Information (RFI) regarding options for the operation of the Heating Operation and Transmission District (HOTD). The purpose of the RFI was to solicit information and concepts that might improve the HOTD operations and customer service relative to GSA objectives of:

- ◆ Lower cost
- ◆ Reliability
- ◆ Environmental performance and energy conservation
- ◆ Asset management and protection

Eleven parties responded to the RFI solicitation, including utilities, energy service companies and consulting firms. The responses can be assigned to five generic classifications: system expansion, operations, technology, system expansion, privatization and regulatory policy. Within these classifications, cogeneration, expansion and improvements to steam and chilled water production, energy performance contracts, and alternative ownership structures were recurring concepts. The respondents, as expected in a Request for Information process, provided only a general assessment of how these concepts related to GSA objectives.

GSA is at a critical juncture. Necessary improvements to the chilled water production capacity are to be installed in conjunction with a 10-MW cogeneration plant. The inherent efficiencies of cogeneration, as manifested by lower operating expenses, provide the financial basis for funding the chilled water utility improvements and the cogeneration capacity through an energy performance contract. The basic premise of this development strategy was at least conceptually supported by the RFI respondents.

However, the short-term needs of Central Plant needs must be balanced with long-term utility development and operating strategies of GSA. The following set of

EVALUATION OF RFI RESPONSES

recommendations is intended to provide GSA the activities and information necessary to identify this project balance:

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- ◆ Prepare decision paper on chiller replacement and cogeneration
- ◆ Continue energy performance contract negotiations for chiller replacement and cogeneration
- ◆ Initiate expanded discussions with RFI respondents most notably with Connectiv, Trigen, and Washington Gas Light and possibly with Enron, Noresco, and Sempra because of potential corporate resources and relevant project experience
- ◆ Investigate short term facility requirements and long-term strategic goals to identify immediate project requirements relative to chiller replacement and steam production
- ◆ Investigate alternative financing mechanism for chiller replacements without capital investment in cogeneration
- ◆ Evaluate technical and economic operating parameters of HOTD in preparation of possible issuance of Utility Request for Proposals

EVALUATION OF RFI RESPONSES

Cross Reference of Respondents and Concepts	Privatization			System Expansion			Operations			Technology					Regulatory Policy		
	Energy Service Contracts	Assets	Services	Steam Service	Chilled Water Service	Load Aggregation	Outside Steam Supply	System Upgrades	Condensate Upgrades	Cogeneration	Back Pressure Turbines	Distributed Systems	Chiller Upgrades	Steam Chillers	Retail Wheeling	Deregulation	Environmental Policy
Armstrong Service																	
CES																	
Conectiv																	
Enron Federal Solutions																	
Levitan & Associates																	
Noresco																	
RDA Engineering																	
Sempra Energy Solutions																	
Trigen/ Pepco Services																	
Washington Gas Light																	
ZBA Engineers																	

EVALUATION OF RFI RESPONSES

BASIC CONCEPTS OF RFI RESPONSES AND GSA GOALS AND OBJECTIVES

	Lower Cost	Environmental		Reliability of Service	Asset Management and Protection
		Performance	Energy Conservation		
Cogeneration	Improved efficiencies of cogeneration can result in reduced cost of steam production and electric service	Reduced net emissions compared to separate, conventional steam production and electric generation systems Reduction attributable to relative thermal efficiency and types of fuel	Reduced fuel consumption compared to separate, conventional steam production and electric generation systems	Increases reliability of electric service with two effective sources: on-site generation and local electric utility	Represents a strategic capital investment in utility plant and operation
Performance Contracts	Mechanism for funding capital projects through third party without direct capital outlay: improved performance and reduced expense of utility operation is basis for payments to third party developer. Payment structure, escalation factors, private sector interest rates, contract guarantees, taxes and profit may ultimately result in higher costs	Contract terms can specify guaranteed reductions of levels of plant emissions	Contract terms can specify guaranteed rate of fuel consumption for plant operation	Contract can also specify plant operating parameters for guaranteed service reliability	Interest protected through mandatory system performance and maintenance guarantees with provisions for liquidated damages
System Expansion	Adding customers to chilled water and steam services can spread fixed operating costs over a larger base, lower cost of service to all customers	Larger loads will increase plant emissions	Larger loads will increase fuel consumption	Will have negligible positive effect on reliability of service	Expansion of physical plant
Privatization	Costs can be guaranteed over term of agreement	Agreement can specify guaranteed reductions of levels of plant emissions	Agreement can specify guaranteed rate of fuel consumption for plant operation	Agreement can also specify plant operating parameters for guaranteed service reliability	Interest protected through mandatory system performance and maintenance guarantees with provisions for liquidated damages

EVALUATION OF RFI RESPONSES

RFI Response	Viability and Scope of Response	Discussion Issues
Armstrong Energy Solutions The Armstrong response to RFI contains some general suggestions and comments relative to fuel and energy management. The comments are not directed at any specific system or solution.	The response to the RFI is not detailed enough to comment on scope or viability. "Optimization" of operations is always a good idea.	➤ Response does not directly address operation or short-term project needs of the HOTD system.
Corporate Economic Strategies, INC (CES) CES proposes public/private partnership to develop least cost integrated resource plan "Business Improvement District (BID)" for West End neighborhood.	BID concept could establish a viable funding mechanism for capital improvements. However, the probable time line for creating BID is very long, and not consistent with the short-term needs of the HOTD system.	➤ The CES response primarily discusses the status and disposition of the West Plant, and does not directly address the issues of the Central Plant. It does suggest an eventual expansion of the BID to incorporate central DC steam customers (potentially GSA facilities).
Conectiv Thermal Systems (CTS) The RFI response recommends a two step process to meet the objectives stated by GSA. The first step would be to lower costs to allow steam rates to be lowered. The second step would be revenue enhancement projects such as expansion of the GSA current customer base.	The response contains a very viable program for addressing both the short-term needs of the HOTD system and the long-term mission of GSA. Many of the operational improvements recommended are already started at the Central Plant and will result in improvements in the short run.	➤ CTS comments pertaining to operational improvements and cost reduction are viable based on current plant status. The objective of reducing cost of current operations and developing a system expansion strategy is reasonable. ➤ CTS recommends that a gas turbine cogeneration system is a viable concept and should be evaluated in terms of the long-term plans for the Central and West Plants. ➤ The CTS analysis of gas turbine cogeneration projects indicates better economic return based on a one-turbine configuration rather than two turbines.
ENRON Federal Solutions, Inc ENRON provided handbook prepared on response to the RFI. Suggests a Request for Proposals (RFP) procedure to pursue a comprehensive review of the total utility needs of the federal buildings in DC.	The response to the RFI is not detailed enough to comment on scope or viability.	➤ Response does not directly address operation or short-term project needs of the HOTD system. ➤ ENRON does have considerable resources and experience in energy and utility projects.

EVALUATION OF RFI RESPONSES

RFI Response	Viability and Scope of Response	Discussion Issues
Levitan & Associates, Inc. The Levitan response to RFI contains some general suggestions and comments relative to energy management and the potential to expand the HOTD distribution system through the use of private capital. They recommend a lease arrangement as opposed to outright sale of assets.	General comments concerning privatization and system expansion are viable. The response is not detailed enough to comment on ultimate scope of the proposed program. The Request for Proposals (RFP) process for privatization could take two years to fully develop.	➤ Response does not directly address operation or short-term project needs of the HOTD system.
NORESCO NORESO proposes a three-part strategy based on Energy Savings Performance Contract (ESPC), retail wheeling of electricity, and privatization. They would evaluate both integrated central utility plant systems and distributed systems.	Retail wheeling is a very viable concept for reducing electric costs under a cogeneration scenario. However, it is very dependent on electric deregulation.	➤ No specific technical proposals. NORESO would look at a range of options. ➤ Strategies proposed are reasonable, but additional detail regarding business structure and system operation is necessary to identify best direction for GSA. ➤ NORESO has considerable resources and experience in energy and utility projects.
RDA Engineers RDA suggests a study to include 1) High Temperature Water (HTW) islands and long term phase out of steam distribution, 2) use of existing steam distribution system to "wheel" steam from third party source, and 3) small scale combined heat and power (CHP) plants at selected sites to serve distribution system.	The viability of converting the distribution system to hot water is questionable due to high cost of modifying building systems for hot water service and of installing HTW distribution. The scope of such a project would be very large, disruptive and take several years to implement. Wheeling steam from a third party is viable under the right type of contract arrangements including reliability guarantees.	➤ Need more information on what third party sources of steam RDA refers to in their response. ➤ Obtaining permits for small-scale heat and power plants could be a major obstacle to implementation. ➤ Capital cost would be high for modifying production capacity and distribution system to high temperature water, district energy system. ➤ Developing new space (mechanical rooms) for distributed system hot water capacity and securing permits for distributed hot water capacity will also add to project costs.

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EVALUATION OF RFI RESPONSES

RFI Response	Viability and Scope of Response	Discussion Issues
Sempra Energy Solutions Sempra suggests an RFP process to determine the best long-term solution based on life cycle costs. They would perform detailed feasibility analysis of alternative systems as part of their response to an RFP.	The response is too conceptual in nature to comment on the ultimate scope. The RFP process is certainly viable and a good way to assess current GSA operations versus private operation of the HOTD system.	➤ Life cycle cost analysis and cost of service studies would formally quantify technical and economic parameters of system operation. These should be conducted prior to and included in an RFP (if any is issued) to ensure that all potential respondents have the same basis for developing proposals. ➤ Sempra has a notable background in energy performance projects.
Trigen-Pepco Services Inc. Their RFI response proposes to supply steam to HOTD's distribution system from a steam line connected to a modified electric generating plant located in Alexandria, VA. They further propose to assume full operation and maintenance responsibility for existing HOTD steam and chilled water generation and distribution systems. Also, they recommend upgrading and expanding the chilled water plant with steam driven chilled water equipment that they would also operate and maintain.	Economic viability of the steam line may be affected by the HOTD chilled water / cogeneration project presently under consideration. Given the high capital cost of developing the steam line, it seems that the entire steam load of GSA is necessary to provide supporting revenue. If 10-MW combustion turbine cogeneration is installed and operated as a base load, nearly half of the annual steam load would be produced at the Central Plant through heat recovery or co-firing. Upon implementation of the cogeneration at Central Plant, the feasibility of implementing remote supply of high-pressure steam would be even more dependent upon the extension of the steam distribution system to a wider customer base. The viability of this concept is also dependent on the environmental impact of routing a high-pressure steam line from the Pepco Plant in Alexandria. The proposed route crosses U.S. Park Service property and critical transportation links in the area.	➤ The concept is based on coal-fired steam production. The response states that net emissions will be reduced through improvements to existing utility generating plant and consequent reduced operation of HOTD plants. ➤ Distribution system would be leased from GSA and expanded to additional customers, so that fixed costs can be spread over a larger customer base. No timeline is given for system expansion. There is a potential liability to GSA, in terms of steam service cost, if the distribution system is not expanded. ➤ Response also states that 13.5 MW of cogeneration will be installed. It is not clear how this generation will be used (i.e., retail offset, buy-all/sell-all, etc.) ➤ Steam-based cooling could reduce summer electric demand and energy consumption for chilled water production ➤ Annual savings of \$8 million are suggested without any specific detail. It is assumed that these are to be derived from reductions of: fuel expenses, staff and administration, plant maintenance expenses (because of reduced operation), and electric load expenses (from cogeneration and steam driven chillers).

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EVALUATION OF RFI RESPONSES

RFI Response	Viability and Scope of Response	Discussion Issues
Washington Gas The response reiterates the current HOTD cogeneration project in which Washington Gas is participating. Their response also proposes an additional 10 MW of gas turbine cogeneration beyond the 10 MW provided in the HOTD Refrigeration Plant / Cogeneration Project currently in development.	Cogeneration is a viable concept for improving plant operations and addressing HOTD's urgent need for chiller replacement. However, the economic viability of the proposed operation is dependent on sales of generated electricity (beyond plant loads) to the grid and/or wheeling generated electricity to other GSA facilities. Electricity from the plant will have to be competitive on the wholesale market or provide an avoided expense to GSA relative to displaced retail electric rates. The relationship between the cost of fuel and the value of the electricity sold should be a provision of the service contract.	➤ Data suggests that proposed operation of an additional 10MW would trigger a lengthy and costly New Source Review (NSR) process to obtain air emission permit. Additional system controls and/or restrictions on back-up generation may be necessary to obtain the permit. The permit for the current 10MW HOTD project will be based on "netting out" of Prevention of Significant Deterioration (PSD) NSR, keeping current emissions limitations and "bubbling" emissions of Central and West Plants. ➤ Operating data and projected expenses do not appear to account for stand-by charges or parasitic loads (i.e., inlet air cooler and gas compressor). Fuel rate for co-fired steam production seems optimistic. ➤ Project experience suggests that a properly executed cogeneration project can bring substantial environmental benefits to the region.
ZBA Engineers and Consultants ZBA primarily discusses technical solutions relative to serving thermal and electrical loads using both distributed and upgraded central plants. They suggest hot water satellite generating plants as means to improve distribution efficiency.	The proposed upgrade to a hot water distribution system would be very a lengthy, costly and disruptive project. It would not address the critical needs of the HOTD system from either a reliability, cost, or environmental perspective.	➤ Capital cost would be high for modifying production capacity and distribution system to high temperature water district energy system. Developing space (mechanical rooms) for distributed system hot water capacity would add to project costs. ➤ Capital cost of modifying building systems to accommodate hot water service would be high. ➤ May be difficult to secure air emission permits for distributed hot water capacity

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Ang - pls make
a copy for
me and send
to John
Gibson.
XX

Original

GSA POWER



United States of America
General Services Administration

Heating Operation & Transmission District

Central Heating &
Refrigeration Plant
13th & C Streets, SW
Washington, D.C.



General Services Administration
Heating Operation & Transmission District
Central Heating and Refrigeration Plant

Chiller Replacement &
Cogeneration Project
May 28th, 1999



THERMAL VENTURES, INC.





Replace Aging Chiller Plant Equipment

Refurbish Boiler 5

Incorporate Cogeneration Technology

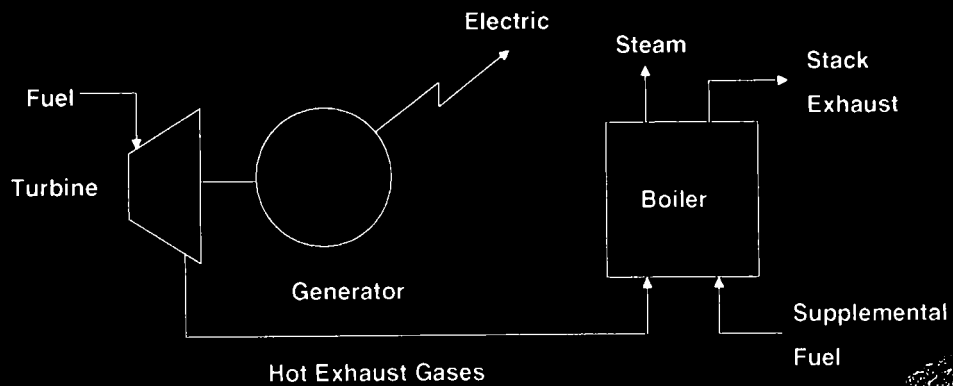


Combined production of electric power and a useful form of thermal energy.

Efficiency gains through Cogeneration reduce the net fuel demand.

Combined Heat and Power





Federal Legislation

Public Utility Regulatory Policies Act of 1978

Energy Policies Act of 1992

Department of Energy

Combined Heat and Power Challenge



Engineering



Economics



Emissions



Execution



•Engineering •Emissions
•Economics •Execution

Combination of two required CHRP
equipment modifications / overhauls

Chiller Plant Equipment Replacement

Boiler 5 Fuel Conversion / Automation

Optimization Study

Survey of Existing Equipment and Data

Considered numerous equipment options





PROJECT DESCRIPTION

- Engineering
- Emissions
- Economics
- Execution

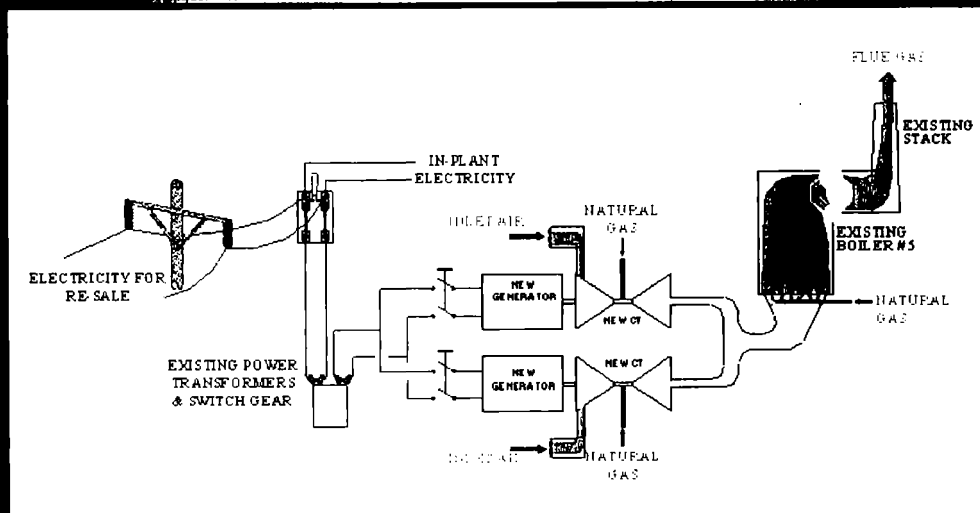
Install New Chiller Plant Equipment

Install two Gas-Fired Combustion Turbine Generators

Convert Boiler 5 to a Heat Recovery Steam Generator



- Engineering
- Emissions
- Economics
- Execution





- Engineering •Emissions
- Economics •Execution

Current Operation

Annual Fuel Consumption = 3.6 Million mmbTU/yr

Annual Steam Production = 2.7 Million mmbTU/yr

Combined Efficiency for Separate Generation = 67%

(w/ 0.3 Million mmbTU/yr electric at 33% efficiency)

Cogeneration

Projected Annual Fuel Consumption = 3.8 Million mmbTU/yr

Projected Annual Steam Production = 2.7 Million mmbtu/yr

Projected Electric Generation = 0.3 Million mmbtu/yr

Cogeneration Plant Efficiency = 78%



- Engineering •Emissions
- Economics •Execution

Economic Factors

Capital Investment

Estimated Initial Investment of \$24.3 Million

Annual Costs

Fuel Usage / Costs

Electric Usage / Costs

Other Costs

Operation & Maintenance, Water, Sewer, Etc.





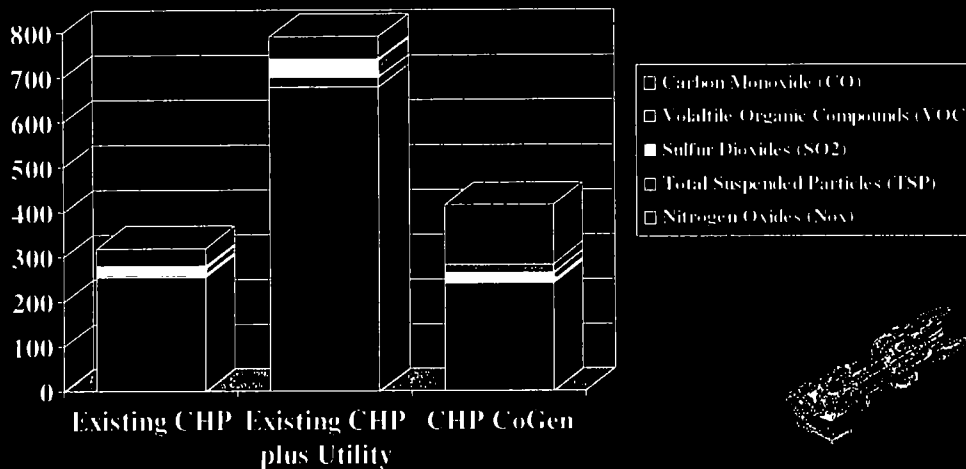
- Engineering •Emissions
- Economics •Execution

	Existing Operations	Cogen Operations	Savings
Initial Capital Investment	\$1,500,000	\$24,300,000	-\$22,800,000
Annual Costs			
Electric Consumed - kWhr/Yr	22,400,000	14,100,000	
Fuel Consumed - mmBTU/Yr	3,600,000	3,800,000	
Electric Cost / (Revenue)	\$1,700,000	(\$2,700,000)	\$4,400,000
Fuel Cost	\$12,100,000	\$12,800,000	-\$700,000
Other Cost (O&M, Water, Sewer)	\$1,171,000	\$1,132,000	\$39,000
Net Annual Cost	\$14,971,000	\$11,232,000	\$3,739,000
Simple Payback (w/o financing costs)	6.1 Yrs		
Payback (w/ financing costs) Financed through ESCO at 7.15%	8.3 Yrs		

\$



- Engineering •Emissions
- Economics •Execution





- Engineering •Emissions
- Economics •Execution

Emissions from CRRP increases slightly
Total Regional Emissions (CRRP & PEPCO) Decreases
Existing Permits cover additional HOTD Emissions

Emission Initiatives

Bubble CRRP and WHP Emission Limits
"Net-Out of PSD"

Bottom Line

Draft Permit Application
Expect EPA and DC Permits



- Engineering •Emissions
- Economics •Execution

Area Wide Utility Contract w/ Washington Gas Energy Service Agreement

Washington Gas finances project
Washington Gas bills HOTD each month
HOTD pays Washington Gas from energy savings

Schedule Requirements

May 2000 - Completion of Chiller Plant
Oct. 2000 - Completion of Cogen Plant





- Engineering
- Emissions
- Economics
- Execution

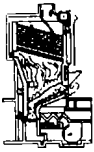
What needs to be done?

GSA Regional Executive Level Approval

Expedite Design / Construction

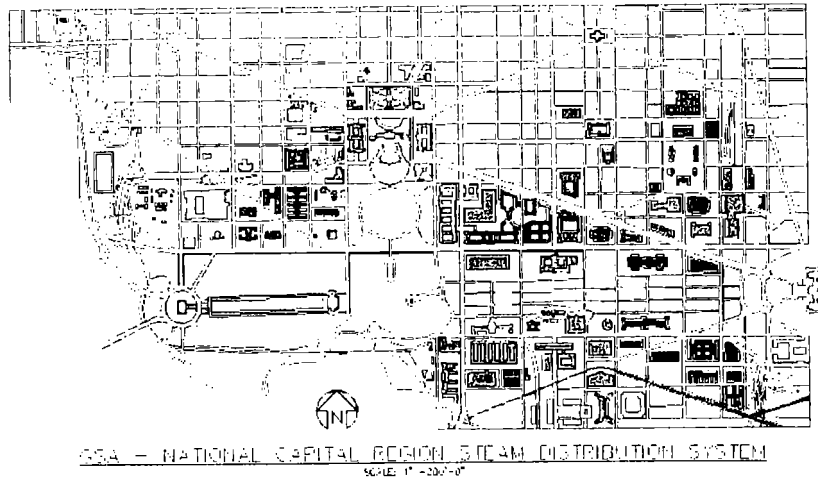
Any Questions?





Heating Operation & Transmission District

United States of America
General Services Administration
National Capital Region



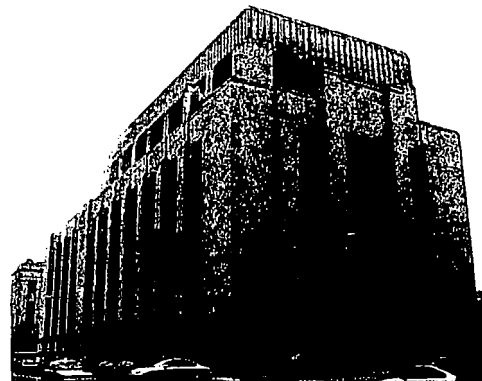
"Always Available!"

Service

The Heating Operation and Transmission District (HOTD) is a government-owned district energy system consisting of the Central Heating and Refrigeration Plant, the West Heating Plant, and the Steam Distribution Complex.

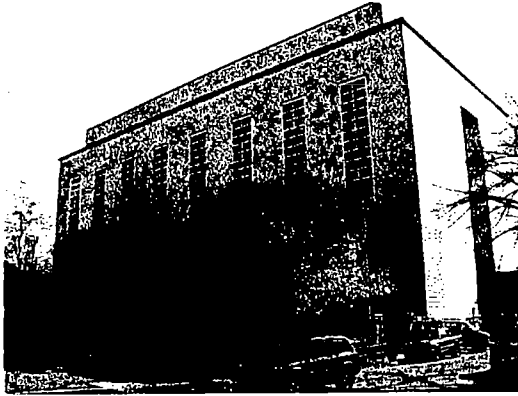
HOTD's mission is to provide a reliable and cost-effective supply of steam and chilled water to our customers. The system serves over 100 Federal, quasi-Federal and District of Columbia government buildings in our Nation's Capital including key Executive Branch agencies, national monuments and many of our nation's most prestigious museums.

The Central Heating Plant has a steam capacity of over 1.6 million lbs/hr, and it has five chillers with a cooling capacity of over 12,000 tons. The West Heating Plant has a steam capacity of approximately one million lbs/hr.



Central Heating Plant

HOTD distributes saturated steam (250 psig and 405° F) and chilled water to customer buildings via an elaborate system of underground tunnels and distribution pipes. Steam is used for heating and other commercial processes, and chilled water is used for office space cooling in the summer.



West Heating Plant

District Energy System

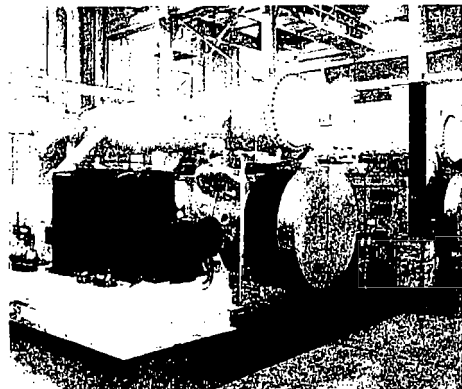
HOTD's centralized energy system has advantages over a decentralized system (installation of boilers in each of the buildings served by HOTD). It allows us to have a much smaller staff compared to having individual package boilers in all of the customer buildings and also allows us to negotiate with contractors to purchase fuel at a discounted rate.

Numerous studies have determined that HOTD is the most viable and economical option for heating all of the federal and other buildings in our Nation's Capital. A 1995 study compared the life-cycle cost of HOTD's current system versus a decentralized system. The study found that building-specific boiler plant operating scenario was not economically viable. HOTD's system was the best system of all options considered. The next best option has a 25-year life-cycle cost that is at least \$78 million more than HOTD's. Additionally, building-specific boilers that burn natural gas or oil would also require installation of smoke stacks in each building, which would pollute the visual beauty of our Nation's Capital. A 1996 "Environmental Impact Statement" study found that installing individual boilers or electric boilers in existing buildings would require additional operations and maintenance personnel.

Environment

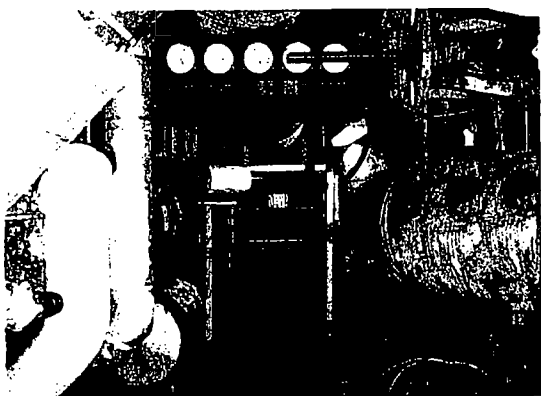
HOTD is committed to the health of our environment. We have a staff dedicated to meeting all Environmental Protection Agency and District of Columbia Environmental Regulation Administration operating permit regulations and requirements.

We have installed Continuous Emissions Monitoring Systems at both plants to monitor our emissions. This enables us to constantly monitor and adjust our combustion process to



Central Heating Plant Chillers

lower our pollutant emissions. In addition, we use natural gas instead of coal since natural gas is the cleanest fossil fuel available. To conserve water, we also reclaim condensate from our customer buildings through our condensate return lines.



A Section of the Steam Tunnel

HOTD in the 20th Century

The Central Heating and Refrigeration Plant, which occupies an entire city block, has six boilers. It was constructed in 1933 during the Franklin D. Roosevelt administration, and it qualifies as a Category III Historic Landmark which contributes to the cultural heritage and interest of our Nation's Capital. Its designer was Paul Philippe Cret, an American architect who designed many public buildings and bridges in this country. The facility is a shining example of American power plant design in the 1930's.

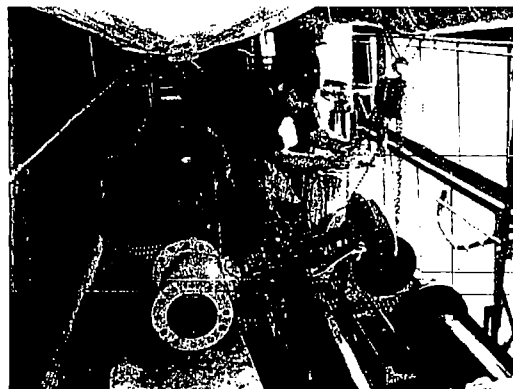
The West Heating Plant, constructed in 1946 during the Harry S. Truman administration, has five boilers. It is part of the Georgetown Historic District and contiguous to the Chesapeake and Ohio Canal National Historic Park. It is listed on the National Register of Historic Places.

Both plants originally burned coal, then switched to gas as the primary fuel and low-sulfur distillate oil as backup to meet new clean-air standards. Both plants are connected to each other and to customer buildings through the Steam Distribution Complex, which is made up of seven miles of walk-through tunnels and five miles of buried pipes.

HOTD in the 21st Century

The future of HOTD lies with our people. We have approximately one hundred dedicated employees with years of heating plant experience that operate the plants twenty-four hours a day, three hundred and sixty-five days a year.

Our employees are grouped into four teams: Operations, Maintenance, Steam Distribution and Administrative support. The Operations team has four shifts that keep the boilers



A HOTD Employee on the Job

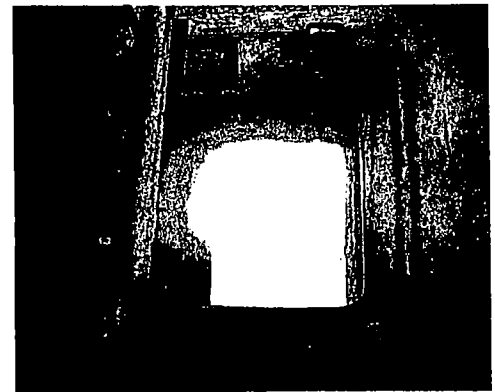
running efficiently and reliably around the clock. The Maintenance team performs the maintenance and repairs on all parts of the plants. The Steam Distribution team performs the repairs and maintenance on the buried pipes and the steam tunnels. The Administrative Team handles all technical and administrative work for HOTD.

To take HOTD into the 21st Century, we are embarking on various projects including a co-generation project, which will install new gas-fired turbines to generate electricity and produce steam at the same time, thus, providing a more efficient conversion of fuel to energy. At the same time, we are installing new high-efficiency chillers to produce chilled water with the electricity generated by the turbines. We are also currently working to improve our metering system to provide customers with the most accurate billing possible.

We have also made strides to reduce costs. We achieved this objective by reducing our workforce, consolidating our fuel purchases, and improving our efficiency. We have reduced our staff by more than 50% from our 1984 level. We buy natural gas directly from suppliers, eliminating the middleman.

We have also modified our operating strategy to improve our efficiency. These actions have allowed HOTD to lower our steam rate, which is comparable with other systems' rates.

HOTD is faced with new and exciting challenges everyday. Experience and dedication will enable us to face these challenges as a team, to satisfy our customers' needs and to be "Always Available."



Inside View of a Boiler Gas Burner

USA POWER



United States of America
General Services Administration

Heating Operation & Transmission District

Central Heating &
Refrigeration Plant
13th & C Streets, SW
Washington, D.C.

Your 1
copy



General Services Administration
Heating Operation & Transmission District
Central Heating and Refrigeration Plant

Chiller Replacement &
Cogeneration Project

May 28th, 1999



THERMAL VENTURES, INC.





Replace Aging Chiller Plant Equipment

Refurbish Boiler 5

Incorporate Cogeneration Technology

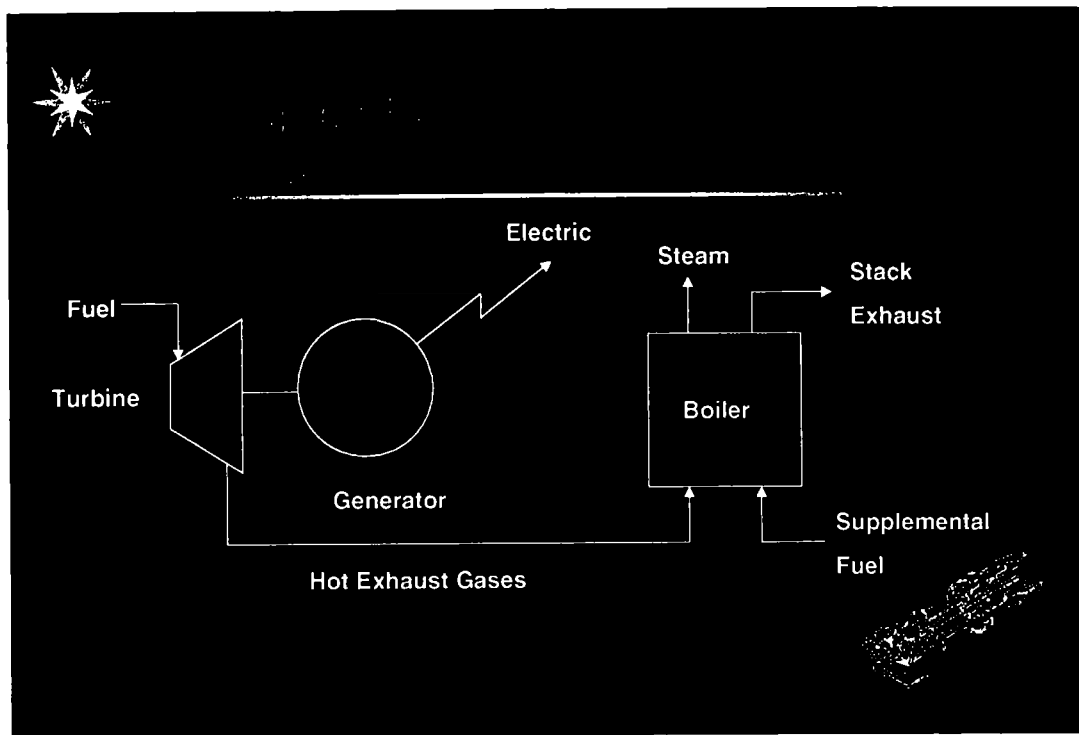


Combined production of electric power and a useful form of thermal energy.

Efficiency gains through Cogeneration reduce the net fuel demand.

Combined Heat and Power





Federal Legislation

- Public Utility Regulatory Policies Act of 1978
- Energy Policies Act of 1992

Department of Energy

Combined Heat and Power Challenge





Engineering



Economics



Emissions



Execution



•Engineering •Emissions
•Economics •Execution

Combination of two required CHRP
equipment modifications / overhauls

Chiller Plant Equipment Replacement

Boiler 5 Fuel Conversion / Automation

Optimization Study

Survey of Existing Equipment and Data

Considered numerous equipment options





THE POWER OF
INTEGRATION

- Engineering
- Emissions
- Economics
- Execution

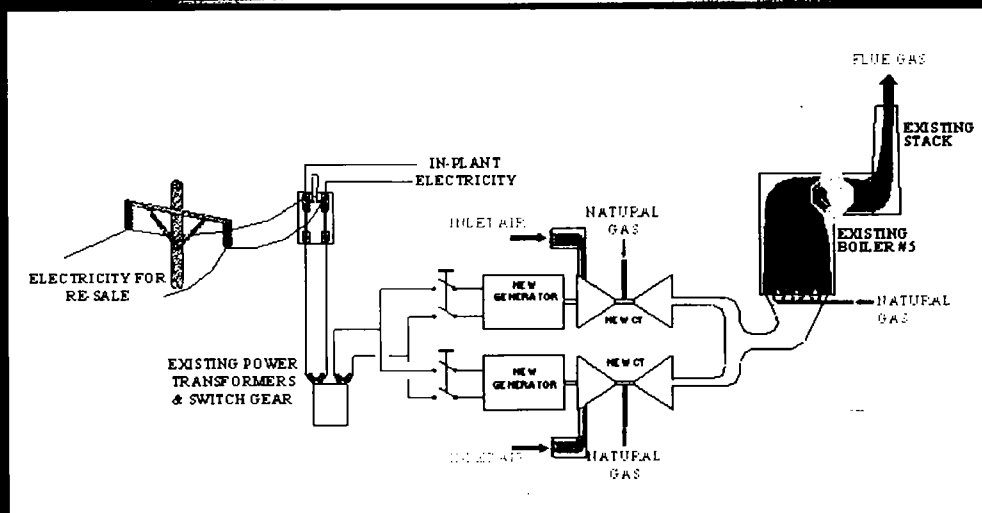
Install New Chiller Plant Equipment

Install two Gas-Fired Combustion Turbine Generators

Convert Boiler 5 to a Heat Recovery Steam Generator



- Engineering
- Emissions
- Economics
- Execution





- Engineering •Emissions
- Economics •Execution

Current Operation

Annual Fuel Consumption = 3.6 Million mmBTU/yr

Annual Steam Production = 2.7 Million mmBTU/yr

Combined Efficiency for Separate Generation = 67%

(w/ 0.3 Million mmBTU/yr electric at 33% efficient)

Cogeneration

Projected Annual Fuel Consumption = 3.8 Million mmBTU/yr

Projected Annual Steam Production = 2.7 Million mmBtu/yr

Projected Electric Generation = 0.3 Million mmBtu/yr

Cogeneration Plant Efficiency = 78%



- Engineering •Emissions
- Economics •Execution

Economic Factors

Capital Investment

Estimated Initial Investment of \$24.3 Million

Annual Costs

Fuel Usage / Costs

Electric Usage / Costs

Other Costs

Operation & Maintenance, Water, Sewer, Etc.





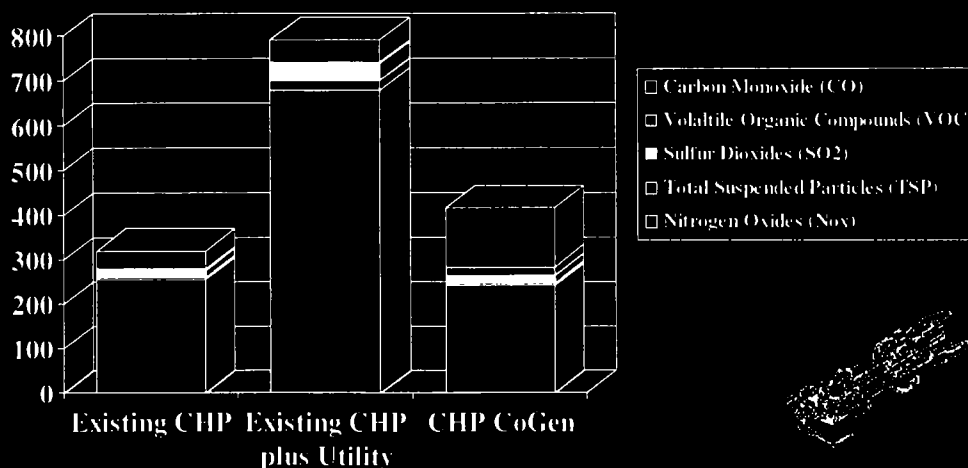
- Engineering •Emissions
- Economics •Execution

	Existing Operations	Cogen Operations	Savings
Initial Capital Investment	\$1,500,000	\$24,300,000	-\$22,800,000
Annual Costs			
Electric Consumed - kWhr/Yr	22,400,000	14,100,000	
Fuel Consumed - mmBTU/Yr	3,600,000	3,800,000	
Electric Cost / (Revenue)	\$1,700,000	(\$2,700,000)	\$4,400,000
Fuel Cost	\$12,100,000	\$12,800,000	-\$700,000
Other Cost (O&M, Water, Sewer)	\$1,171,000	\$1,132,000	\$39,000
Net Annual Cost	\$14,971,000	\$11,232,000	\$3,739,000
Simple Payback (w/o financing costs)	6.1 Yrs		
Payback (w/ financing costs) Financed through ESCO at 7.15%	8.3 Yrs		

\$



- Engineering •Emissions
- Economics •Execution





•Engineering •Emissions
•Economics •Execution

Emissions from CRRP increases slightly
Total Regional Emissions (CRRP & PEPCO) Decreases
Existing Permits cover additional HOTD Emissions

Emission Initiatives

Bubble CRRP and WHP Emission Limits
"Net-Out of PSD"

Bottom Line

Draft Permit Application
Expect EPA and DC Permits



•Engineering •Emissions
•Economics •Execution

Area Wide Utility Contract w/ Washington Gas Energy Service Agreement

Washington Gas finances project
Washington Gas bills HOTD each month
HOTD pays Washington Gas from energy savings

Schedule Requirements

May 2000 - Completion of Chiller Plant
Oct. 2000 - Completion of Cogen Plant





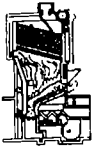
- Engineering
- Emissions
- Economics
- Execution

What needs to be done?

GSA Regional Executive Level Approval
Expedite Design / Construction

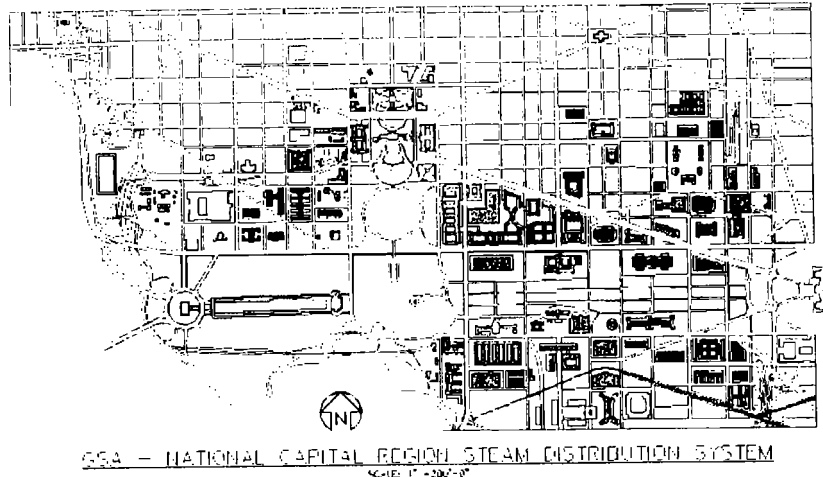
Any Questions?





Heating Operation & Transmission District

United States of America
General Services Administration
National Capital Region



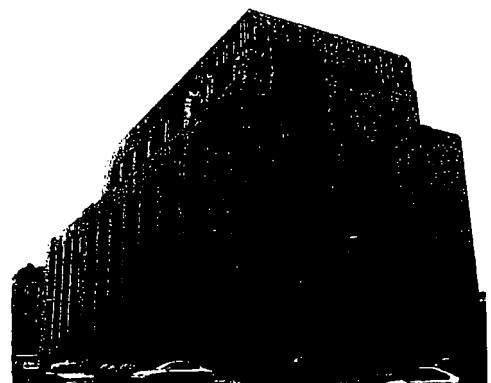
"Always Available!"

Service

The Heating Operation and Transmission District (HOTD) is a government-owned district energy system consisting of the Central Heating and Refrigeration Plant, the West Heating Plant, and the Steam Distribution Complex.

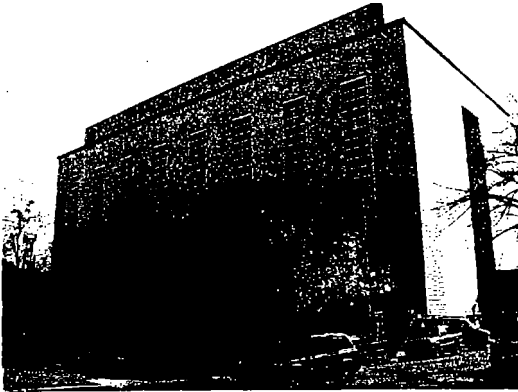
HOTD's mission is to provide a reliable and cost-effective supply of steam and chilled water to our customers. The system serves over 100 Federal, quasi-Federal and District of Columbia government buildings in our Nation's Capital including key Executive Branch agencies, national monuments and many of our nation's most prestigious museums.

The Central Heating Plant has a steam capacity of over 1.6 million lbs/hr, and it has five chillers with a cooling capacity of over 12,000 tons. The West Heating Plant has a steam capacity of approximately one million lbs/hr.



Central Heating Plant

HOTD distributes saturated steam (250 psig and 405° F) and chilled water to customer buildings via an elaborate system of underground tunnels and distribution pipes. Steam is used for heating and other commercial processes, and chilled water is used for office space cooling in the summer.



West Heating Plant

District Energy System

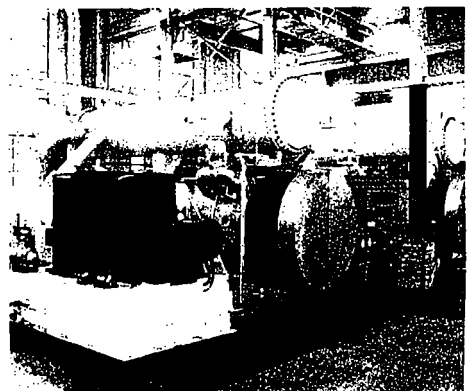
HOTD's centralized energy system has advantages over a decentralized system (installation of boilers in each of the buildings served by HOTD). It allows us to have a much smaller staff compared to having individual package boilers in all of the customer buildings and also allows us to negotiate with contractors to purchase fuel at a discounted rate.

Numerous studies have determined that HOTD is the most viable and economical option for heating all of the federal and other buildings in our Nation's Capital. A 1995 study compared the life-cycle cost of HOTD's current system versus a decentralized system. The study found that building-specific boiler plant operating scenario was not economically viable. HOTD's system was the best system of all options considered. The next best option has a 25-year life-cycle cost that is at least \$78 million more than HOTD's. Additionally, building-specific boilers that burn natural gas or oil would also require installation of smoke stacks in each building, which would pollute the visual beauty of our Nation's Capital. A 1996 "Environmental Impact Statement" study found that installing individual boilers or electric boilers in existing buildings would require additional operations and maintenance personnel.

Environment

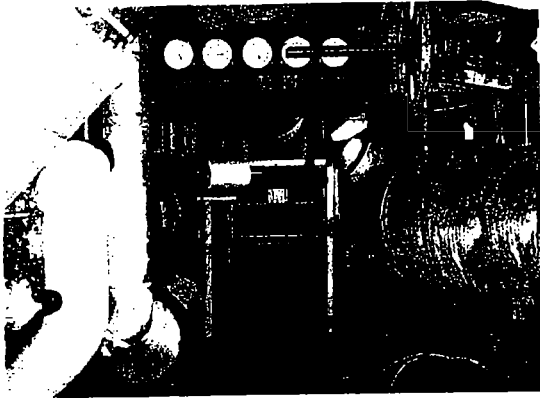
HOTD is committed to the health of our environment. We have a staff dedicated to meeting all Environmental Protection Agency and District of Columbia Environmental Regulation Administration operating permit regulations and requirements.

We have installed Continuous Emissions Monitoring Systems at both plants to monitor our emissions. This enables us to constantly monitor and adjust our combustion process to



Central Heating Plant Chillers

lower our pollutant emissions. In addition, we use natural gas instead of coal since natural gas is the cleanest fossil fuel available. To conserve water, we also reclaim condensate from our customer buildings through our condensate return lines.



A Section of the Steam Tunnel

HOTD in the 20th Century

The Central Heating and Refrigeration Plant, which occupies an entire city block, has six boilers. It was constructed in 1933 during the Franklin D. Roosevelt administration, and it qualifies as a Category III Historic Landmark which contributes to the cultural heritage and interest of our Nation's Capital. Its designer was Paul Philippe Cret, an American architect who designed many public buildings and bridges in this country. The facility is a shining example of American power plant design in the 1930's.

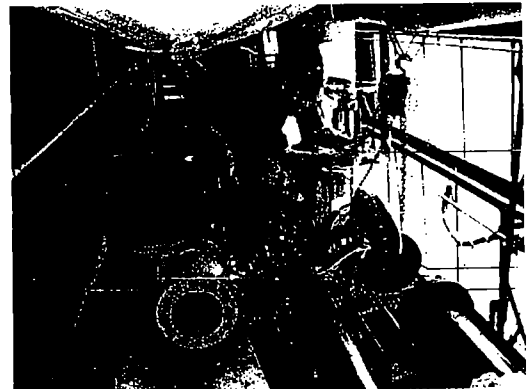
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A HOTD Employee on the Job

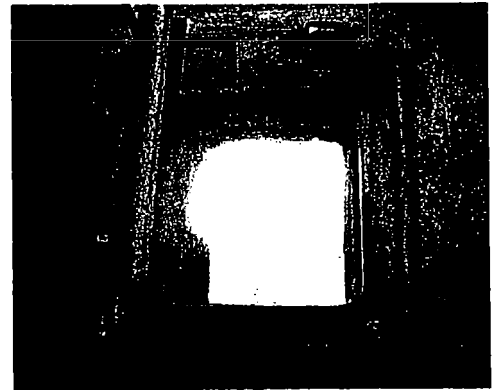
running efficiently and reliably around the clock. The Maintenance team performs the maintenance and repairs on all parts of the plants. The Steam Distribution team performs the repairs and maintenance on the buried pipes and the steam tunnels. The Administrative Team handles all technical and administrative work for HOTD.

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Inside View of a Boiler Gas Burner

GSA staff operating the agency's DC district energy system are on the verge of finalizing an agreement with Washington Gas Light (WGL) to install a new cogen facility in the Central Steam Plant. The agreement with WGL would be accomplished pursuant to WGL's existing areawide utilities contract with GSA, and would not involve competitive bidding.

The cogen units (two 5MW combustion turbines) would support a new, expanded chiller unit, and would likely generate excess electricity that would be delivered directly by GSA to one or more large federal office buildings in the area (USDA or USDOE or both) or be sold into the commercial electricity market.

GSA staff intend to have the new chiller capacity on line by this time next year and, to meet that schedule, expect to sign a final agreement with WGL before the end of July.

The project design is completed, though still under internal agency review, and was performed by Thermal Ventures under contract to WGL. Apparently the project cost is roughly \$23 million.

GSA staff advise that they view the RFI as a White House-driven initiative that threatens to interfere with plans to install the cogen facility. They may propose extending the deadline for responses to the RFI, with the unstated purpose of allowing more time to finalize the agreement with WGL. GSA staff indicate that they do not want the RFI to influence their decision on the WGL cogen project, but hope that the RFI may identify additional services that could, if implemented, benefit the district energy system. GSA staff indicated that, if the RFI produces responses that lead to an RFP, the RFP would not be issued until next year.

Installation of the proposed cogen unit, because of the value of the electricity associated with the project, would negate the potential value (i.e., the competitiveness) of virtually any other proposed means of meeting the GSA district energy system's energy needs (e.g., replacement steam supply, other cogen provider, customer site generation) and, thus, negate the primary stated purpose of the RFI.



U.S. General Services Administration National Capital Region



ABOUT NCR SERVICES SOLUTIONS CUSTOMERS PARTNERS

Regional Administrator
Federal Supply Service

Service Delivery Teams

Public Buildings Service
Federal Technology Service

ABOUT NCR...

GSA/NCR: Public Building Service : Service Delivery Teams : HOTD



U.S. General Services Administration
National Capital Region
Washington, DC

June 1, 1999

Dear District Energy Industry Professional:

Technological and business restructuring efficiency enhancement opportunities are rapidly evolving in district energy and related industries involved in provision of heating, cooling and other utility services to buildings. Current competitive markets both necessitate and facilitate provision of thermal and other building utility services in a most economical manner.

In this context, the United States General Services Administration (GSA), National Capital Region (NCR), is seeking information on options to provide certain energy services currently provided by GSA in Washington DC. GSA's Heating Operation & Transmission District (HOTD) provides generation and distribution of high-pressure steam to 100 Federal buildings in the downtown area of Washington, DC, and also generation and distribution of chilled water to three of those buildings. Additionally, HOTD provides repair services to customer buildings for various steam-related problems.

GSA's objectives are to provide a reliable, efficient, cost effective, secure and environmentally sound source of steam and other utility services to its customers. GSA wishes to explore all viable alternatives to its current business practices, including emerging technologies and advantages made possible through utilities restructuring. GSA wants to acquire energy services using the most economical method that meets or exceeds its objectives, and invites information and ideas on all alternatives.

In view of these goals, GSA would appreciate your review and comment on its "Request for Information, District Energy Options" (RFI) which follows, regarding options for provision of energy services to its customer buildings. Your response is requested by July 16, 1999.

GSA anticipates using advice and comments received in response to this RFI to fashion a "Request for Proposals" (RFP), which GSA may then use to solicit proposals to acquire district energy services for GSA's customer buildings in the downtown area of Washington DC in the most economical manner available in the market consistent with essential reliability and pertinent Federal government requirements.

If you have any questions, or require further information, please contact Joel Klotz, at (202) 690-9720 ext. 130, by fax at (202) 690-9777, or by electronic mail at Joel.Klotz@gsa.gov.

Sincerely,

Steven R. Williford, Director
GSA NCR Heating Operation and Transmission District

Request for Information

District Energy Options

U.S. General Services Administration
National Capital Region
Washington, DC

Introduction

The United States General Services Administration (GSA), National Capital Region (NCR), is seeking information on options to provide certain energy services to its federal customers within the downtown area of Washington DC. currently provided by GSA. GSA's Heating Operation & Transmission District (HOTD) provides generation and distribution of high-pressure steam to 100 buildings, and generation and distribution of chilled water to three buildings. Additionally, HOTD provides repair services to customers for various steam-related problems.

GSA's objectives are to provide a more cost effective, environmentally superior, energy efficient and reliable source of steam and other utility services to its customers. The purpose of this Request for Information (RFI) is to enable GSA to explore all viable alternatives, consistent with its stated objectives, to how it currently provides energy services to its federal customers. GSA wants to provide energy services to its federal customers using the method that meets or exceeds the objectives and invites information and ideas on alternatives that do so.

Baseline Information and Data

HOTD is the Federal Government's largest district energy system. Originally built in 1933, the system consists of two federally owned steam generating plants with a designed capacity of 2.6 million Lbs. per hour of high pressure (250 psig.) steam. HOTD also has a refrigeration plant with a designed capacity of 12,000 tons of cooling per hour. The steam generating plants are tied to a steam distribution system comprising seven miles of tunnel and five miles of buried pipe with approximately 67 manholes. The distribution system supplies more than 50 million square feet of office space in 100 government and quasi-government buildings in the vicinity of the Mall at the heart of the Nation's Capital, Washington DC.

HOTD's steam plants have capabilities for firing three fuels (coal, oil, and natural gas). Plant operating permits, however, require use of natural gas as the primary fuel source, with low sulfur, number 2 fuel oil for emergency back up. Burning of coal is precluded. The annual steam delivered to the customer in 1998 was approximately 1.5 billion Lbs. Peak demand can reach one million Lbs. per hour. The system is in compliance with all EPA and DC government air pollutant emission regulations and permit conditions.

HOTD maintains its current level of reliability through its broadened system redundancy. The system has total design generating capacity of 2.6 million Lbs. per hour, while the average steam delivered to the system ranges only from 142,000 to 453,000 Lbs. per hour. This broadened redundancy exists because there are 11 boilers located in two generating plants tied to one distribution system. During peak winter loads as many as four boilers are on-line. During summer loads as little as one boiler is on line. Individual boiler information can be found in Tables 3 and 4.

Operating costs for HOTD are relatively stable, except for fuels and utilities, which vary based on changing weather conditions. In 1998, HOTD's administrative,

operations, and maintenance costs were \$9.5 million. Its natural gas, electricity and water costs totaled \$17.4 million.

GSA is presently exploring several cost reduction opportunities. Current operating plans call for operation of only one generating plant at a time. This initiative has reduced personnel and maintenance requirements. To reduce the price of fuel, natural gas is being procured through the wholesale market. Management continues to review and implement outsourcing and other contracting mechanisms to achieve greater efficiency in the overall administration of the facilities and the organization. Finally, GSA is planning to construct a cogeneration system within its Central Heating and Refrigeration Plant. This modification will incorporate natural gas fired turbine electric generators, modification of an existing boiler to a waste heat recovery boiler, and installation of new refrigeration chillers. This modification, when completed, will change some of the table data regarding emissions, natural gas use, electricity use, and Central Plant Boiler # 5 fuel type and design capacity.

In addition to annual operating costs and environmental factors, GSA has other operational and cost considerations that it will take into account in reviewing ideas submitted in response to this RFI. For example, GSA has invested in capital improvements to the steam plants and steam distribution system. How various alternatives approach the existing physical assets (retention, use, sale, and expansion) will be viewed in the context of the Federal government's capital investments. In addition, GSA has ongoing maintenance obligations for the existing steam plants, distribution systems, and steam using equipment in buildings. Alternatives that continue use of steam means that the current workforce may be required to continue maintenance of all or part of those systems and suggested labor cost savings, if any, would be viewed in that context.

If an alternative includes closure of either the generating plants or the distribution system, in whole or in part, with resulting mothballing or decommissioning of those facilities, such alternatives will bring into play additional factors and costs. GSA's existing workforce operates and maintains the generating plants and distribution system, with contractor support. GSA will take into consideration whether, and in what manner, an alternative proposing closure of the government operating functions will impact its workforce. In addition, closure of one or both of the generating plants may result in additional costs, including but not limited to, potential environmental remediation. Thus, alternatives that propose closure of some or all of the physical assets, will be viewed in the context of these consequences. Finally, the HOTD system provides vital services to facilities that are critical to national security. Accordingly, reliability and security of these services is important.

Additional baseline information and data can be found in Tables 1 through 4.

Table # 1
Emissions Data - Central & West Plants

1998 Calculated Emissions (In Tons)

Sulfur Dioxide(SO ₂)	0.9
Nitrogen Oxide (NOx)	190.04
Carbon Monoxide (CO)	35.4
Volatile Organic Compounds (VOCs)	2.77
Total Suspended Particulates (TSP)	4.25

Table # 2
Energy & Cost Data - Central & West Plants

1998

Monthly Range of Steam delivered	45,000 to 221,000 Mlbs.
Average Steam Delivered lbs./Hour	142,000 to 453,000
Annual Natural Gas Use (3,200,000 MMBtu)	\$13,551,390
Annual Electricity Use (27,000,000 KWH)	\$2,034,089
Annual Water & Sewer Use (471,000 Cu. Ft.)	\$1,822,577

Table # 3
Central Plant Boiler Data

Boiler	Fuel	Design Capacity
No. 1 Boiler	Gas/Coal Fired	180,000 lbs./hr.
No. 2 Boiler	Gas/Coal Fired	180,000 lbs./hr.
No. 3 Boiler	Gas/Oil Fired	400,000 lbs./hr.
No. 4 Boiler	Gas/Oil Fired	400,000 lbs./hr.
No. 5 Boiler	Oil/Coal Fired	220,000 lbs./hr.
No. 6 Boiler	Gas/Oil/Coal Fired	220,000 lbs./hr.

Table # 4
West Plant Boiler Data

Boiler	Fuel	Design Capacity
No. 1 Boiler	Gas/Oil/Coal Fired	180,000 lbs./hr.
No. 2 Boiler	Gas/Coal Fired	180,000 lbs./hr.
No. 3 Boiler	Gas/Oil Fired	220,000 lbs./hr.
No. 4 Boiler	Gas/Coal Fired	180,000 lbs./hr.
No. 5 Boiler	Gas/Oil Fired	220,000 lbs./hr.

GSA Objectives

GSA invites information and ideas on alternative means of providing energy services to its federal customers, which satisfy each of the objectives outlined below.

1. **Costs** — GSA is seeking alternatives that will result in lower costs to the Federal government. Submissions should describe, with particularity, proposed cost savings and demonstrate how cost savings can be

transferred to the customer base. If proposed cost savings result from changes in the workforce, those changes must be specifically noted and discussed

2. **Environmental Performance & Energy Conservation**

— GSA is seeking alternatives that:

- Reduce overall energy consumption in Federal facilities and meet goals mandated by the Energy Policy Act of 1992 (PL 102-486).
- Employ and promote innovative energy technologies.
- Reduce regional pollutant emissions including carbon.
- Do not diminish regional air quality throughout the greater metropolitan region.

3. **Reliability** — GSA is seeking alternatives that will assure reliable supply of 250 psig. saturated steam to its customers, as well as chilled water where applicable.

4. **Asset Management/Protection** — GSA is seeking alternatives that take into consideration the existing HOTD physical assets, which include the energy generating plants, the distribution system and infrastructure. Alternatives should address whether the assets will be retained in whole or in part, and if so, how they will be operated, maintained, renovated and how physical security will be provided. Respondents should assume that no federal funding would be available to accomplish future capital improvements.

Range of Alternatives

As stated, GSA is seeking alternatives that meet or exceed its stated objectives. Alternatives that may be considered include, but are not limited to:

- Providing steam from a non-GSA source into the GSA steam distribution system. (Ideas may propose the use of one or both GSA steam plants as reserves to meet reliability and peak needs, but should so specifically note in the submission.)
- Replace or incorporate existing GSA steam plant and site into a new or expanded co-generation plant to serve GSA steam and other potential power needs. (Ideas may include co-generation capabilities that exceed GSA's needs with surplus being sold into commercial markets or combining GSA's needs with non-GSA requirements, with no risk or cost to the Federal government.)
- Supply steam needs of GSA buildings with steam generators co-located with the buildings (i.e., distributed resources) which include increased energy efficiency technology, such as co-generation of power for the buildings.
- Expanding steam use in buildings for other energy end-uses or conversely, conversion of building steam end-uses to another energy source.

Regardless of the alternative or approach, responses to this RFI must be based on the objectives listed above.

How to Submit Responses

Responses to this RFI are to be submitted in writing. No specific format is required. However, please include in your submission, ideas of how you would accomplish GSA's objectives. Although this is not a Request for Proposals, we would like to receive ideas and/or plans that contain sufficient detail to facilitate informed discussion of alternatives. Upon request, GSA will provide additional information if available. Please send any request for information to the individual identified below. After receipt and review of submissions, GSA may request meetings with any respondent to review the material presented and to answer questions. Your response to this request for information should be submitted by **July 16, 1999** to:

Mr. Joel Klotz
Manager, Maintenance & Engineering Office
Heating Operation & Transmission District (WPO)
U.S. General Services Administration, NCR
Central Heating and Refrigeration Plant
13th & C Streets, SW
Washington, DC 20405

Responses will be used for information and planning purposes only, and will not constitute an offer that may be accepted by the Government to form a binding contract. If you have any questions or require further information, please contact Joel Klotz at (202) 690-9720, ext. 130, or by facsimile at (202) 690-9777, or by electronic mail at joel.klotz@gsa.gov.

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Phase I Project Manual

Executive Summary

This report discusses the optimized design of the proposed chiller plant and the cogeneration modifications to the boiler plant. The proposed chiller plant includes four 2,200 ton open-drive chillers and a single 1,000 ton hermetic chiller resulting in a 9,800 ton capacity. This increase in efficiency from the new plant reduces the required chiller plant electric consumption by approximately 7 million kilowatt hours per year and reduces the chiller plant electric demand by 3 megawatts (while producing the same amount of chilled water 7,036,317 tonhrs/yr). This new equipment requires substantially less electricity, and the new cogeneration plant produces more than enough power to supply the entire Central Heating Plant with electricity. Sections V and VI hereinafter further detail these systems.

The modifications to the existing boiler plant include altering boiler #5 to receive the combined exhaust from two combustion turbines and the implementation of a 200 mmBTU per hour duct burner. This new arrangement of boiler #5 produces 1,715,463,684 pounds of steam per year or 64% of the total steam load. The two combustion turbines produce approximately 85 million kilowatt hours per year at a peak production in excess of 10,000 kilowatts. The total fuel consumption (3.8 million mmBTU/yr) is slightly higher than the existing configuration (3.6 million mmBTU/yr), however, this fuel produces the total plant steam demand (2,676,671,228 lbs/yr), the total new in-plant electric consumption (14 million kWhrs/yr), and over 71 million kilowatt hours per year of electricity that can be sold.

The actual value for the excess electricity remains to be determined. The value used in the economic analysis for the electric power was taken from PEPCo's "DC-CG-SPP" resulting in an average annual rate of \$0.03426 per kilowatt hour in year 2001. This scenario assumes that the excess electricity will be sold to PEPCo, but there remains the possibility that the GSA can wheel the excess to other government buildings, therefore, dramatically increasing the value of this energy.

Several other minor pieces of equipment are necessary for the operation of the proposed plant. The chiller plant requires several new chilled water distribution pumps, new condensing water pumps, modifications of the existing cooling towers, and switchgear and motor control center modifications. Boiler #5 requires modifications of the induced draft fan, a new force draft fan, controls and switchgear. The combustion turbines require a new air coil to cool the inlet air, natural gas compressors, and switchgear. Back-up and emergency electricity are supplied by two 1,250 kilowatt diesel generators. The following table provides a summary of the major equipment required for the new plant.

Table 1. Major Equipment Summary

<u>Equipment</u>	<u>Number</u>	<u>Rating (each)</u>
Combustion Turbine Generator Set	2	5,000 kW
Natural Gas Compressor	2	2,650 pph
Duct Burner	1	200 mmBTU/hr
Stand-by Generator	2	1,250 kW
Total Electric/Steam Plant		12,500 MW
Open-Drive Centrifugal Chiller	4	2,200 ton
Condenser Pumps	3	Varies
Chilled Water Pumps	3	Varies
Hermetic Chiller	1	1,000 ton
Total Chilled Water Plant		9,800 tons

The financial analysis discussed in this report includes the projected operating costs for both the new and existing plants over a twenty year term and the estimated probable construction cost for the proposed project. The total estimated probable construction and implementation cost for both the new chiller plant and the cogeneration modifications is \$24,292,900 and is further detailed hereinafter in Section VII. Using this value for the debt service and considering the operating costs and potential electric revenue, the cumulative present value for the new plant with a two week natural gas curtailment is \$136,863,829. This value reflects a 10 year term and includes interest during construction and financing cost. Utilizing a similar analysis for the existing facility, the cumulative present value is \$141,314,567 for the same 10 year term. Therefore, the proposed plant saves \$4,450,738 over the existing plant. The method for calculating the cumulative present value was taken from the "NIST 'Building Life-Cycle Cost' Program", United States Department of Commerce Technology Administration. The financial analysis is further detailed in Section VIII.

This report is regarding Part II of the proposed project as outlined in our proposal of July 14, 1998, and summarizes our presentation made on September 30, 1998. The scope of work specifically addresses items V through XI of the "Scope of Work" dated July 6, 1998. Each of these items are discussed in detail in this report with supporting information provided by several vendors, PEPCo, Washington Gas, and the General Services Administration Central Heating and Refrigeration Plant.

V. Optimization of Design

The original purpose of this project involved modifying the existing refrigeration equipment in order to replace the existing ozone-depleting refrigerant. Thermal Ventures Incorporated was asked to review the existing plant and determine a cost-effective solution for modernizing the existing chiller plant. The original proposal used a cogeneration application to offset the cost of the new chiller plant.

A. Heat and Mass Balance Analysis

In order to optimize the cogeneration aspect of this project, a mass and energy balance of the combustion turbines and boiler #5 was performed. The combustion turbine analysis was reviewed, and it was determined that if a fan coil was located in the combustion air inlet duct to maintain a maximum inlet air temperature of 60°F the turbines could yield approximately 800 kiloWatts more of power for a total power production of 10,116 kW. This improved performance also increased the energy available in the combined exhaust flow, thereby reducing the amount of fuel required in the duct burner.

Utilizing the new turbine performance data provided by the Solar Turbines' Performance Program, 1997, the mass flow, chemical composition, and available energy of the combined turbines' exhaust was used in a heat balance calculation for boiler #5 (Exhibits 1 and 2 in Appendix A). This new data was given to Aalborg Industries (A.I.) in order to determine if the size of the economizer and evaporator tube bundle would change. A.I. reported that the economizer and evaporator tube bundle would not need to be changed and that the duct burner fuel flow rate was reduced from 9,718 pph to 9,681 pph in order to produce 242,000 pph of 250 psig steam (Exhibit 3). The amount of steam that could be produced without supplemental firing increased slightly to 49,202 pph (Exhibit 4).

B. Chiller Plant Optimization and Equipment List Refinement

The new chiller plant was further refined by selecting the necessary equipment for the assumed new loading of the Department of Agriculture building. Two of the chillers are arranged in series with each other and in parallel with another pair. This type of arrangement combined with a hot gas by-pass system allows the chillers to operate very efficiently at low loads. The hot gas by-pass option allows the chillers to operate efficiently with almost no chilled water load due to the fact that the compressor maintains a 10% to 15% refrigerant load. To further augment the new chiller plant's capacity, the existing 1,000 ton chiller is replaced by a more efficient 1,000 ton chiller and the existing chillers #3 and #4 are kept for stand-by operation. The total capacity of the proposed chiller plant is 9,800 tons of new capacity having an estimated, average total

efficiency rating of 0.784 kW/ton plus 5,000 tons of existing capacity for a total of 14,800 tons. This rating is substantially greater than the existing configuration which operates at approximately 1.8 kW/ton.

The new chilled water pumps are arranged such that two of the pumps are capable of pumping the maximum flow through both pairs of chillers while the third pump was selected to operate at half load. A minimum flow bypass for the chilled water is also included in the preliminary chiller plant design. The condensing water pumps are configured in a similar manner. Variable speed drives were considered for both the chilled water and condensing water pumps in order to effectively reach low loading, but this type of system proved to be less cost-effective than the aforementioned configuration. The piping arrangement in the new chiller plant is modified to allow for each chiller to be supplied by either of the chilled water pumps and for each cooling tower to be served by either of the condensing water pumps.

All of the proposed boiler and chiller plant equipment was identified as either high voltage or medium voltage and arranged in an Equipment List (Appendix A: Exhibit 5). This list contains all of the new equipment as well as some of the essential existing equipment. The capacity of each piece is indicated as well as the design pressure, temperature and electrical requirements.

VI. Preliminary Engineering

A. Process Flow Diagrams for the Proposed Boiler and Chiller Plants

In order to better understand how each piece of equipment inter-relates, several process and instrumentation diagrams were developed. The P&ID for the boiler plant is drawing number 0611PI01 located in Appendix B. This diagram illustrates the flows, controls and equipment necessary for the operation of the combustion turbines and boiler #5 as proposed. The flows of primary air, chilled water, fuel, exhaust gas, steam and feedwater are each identified on this drawing. The tags labeling each piece of equipment refer to the Equipment List.

The P&ID for the proposed chiller plant is drawing #0611PI02. This diagram identifies the major chiller equipment including the chillers, pumps and cooling towers. The piping network shows the pathways for the chilled water and condensing water flows. The existing chillers #3 and #4 are clearly indicated as well as the existing pumps and cooling towers which are to remain but be modified.

All of the existing and proposed equipment require electricity to operate (or produce electricity). Drawing #0611EE01 shows the one-line diagram for the high voltage electrical system for both the proposed chilled water plant and the cogeneration equipment.

B. Equipment Arrangement Drawings

Once it was determined how all of the equipment should interact, the placement of each piece of equipment needed to be ascertained. Appendix C contains various drawings showing the essential levels of both the chiller and boiler plant. The equipment and duct work that should be demolished, removed or modified is indicated with a hatch. The new equipment and duct work

is shown with bold lines. These drawings show the plan view of the necessary floors as well as two elevation views of boiler #5. These views were included to further clarify the location of equipment and duct work associated with the combustion turbines and boiler #5.

C. Emission Calculation Revisions

Since the combustion turbine performance and the proposed chiller plant were further refined in this study, several essential items were revised, among these are the load duration curves, load profiles and the projected boiler plant emissions. The tables containing the revised emissions data are presented as Exhibit 6a and 6b in Appendix A. The load duration curves are each provided in Appendix D.

TVI researched the fuel consumption data provided by the GSA to find the historical amount of time in which the natural gas supply was curtailed. With this information as well as conversations with Washington Gas, it was determined that the typical curtailment time should be approximately 336 hours per year (14 days). The assumption was made that for this amount of time the combustion turbines would be off-line and the electrical demand of the plant would be supplied by two 1,250 kW back-up, diesel generators. Knowing this load factor for combustion turbine use (96.16%) and through the use of heat balance calculations and the load duration curves, it was determined that the fuel required in the combustion turbines was 1,102,104 mmBTU/yr (Exhibit 6a). The amount of supplemental fuel required for this time period was added to the turbines' fuel to yield a total of 2,625,023 mmBTU/yr of natural gas for the HRSG. The amount of steam that the HRSG can produce is 1,715,463,684 lbs/yr. Therefore, the amount of steam that the balance of the plant has to produce is 961,207,544 lbs/yr, and at an 81.15% average, annual boiler efficiency, the fuel consumption for the balance of the plant is 1,190,760 mmBTU/yr.

During the time of natural gas curtailment, the diesel generators must operate to supply electricity to the new plant. Based on the time of year in which curtailment occurs, the electric production for the generators is approximately 497,950 kWhrs/yr. Assuming a 35% thermal efficiency, the estimated fuel required is 4,855 mmBTU/yr. Therefore, the total new plant fuel consumption is found to be 3,820,637 mmBTU/yr.

In order to identify the effects of the time period of natural gas curtailment, the assumption was also made that this period corresponded to 876 hours per year which corresponds to a combustion turbine load factor of 90.0% (Exhibit 6b). For this operating scenario, the amount of fuel required by the combustion turbines is 1,031,456 mmBTU/yr. The total HRSG fuel consumption is 2,432,504 mmBTU/yr which can produce 1,584,783,684 lbs/yr of steam. Therefore, the amount of steam that the balance of the plant has to produce is 1,091,887,544 lbs/yr, and at an 81.15% average, annual boiler efficiency, the fuel consumption for the balance of the plant is 1,352,649 mmBTU/yr.

During this time of natural gas curtailment, the diesel generators must produce 1,401,693 kWhrs/yr of electricity for in-plant consumption. Assuming a 35% thermal efficiency, the estimated fuel required is 13,665 mmBTU/yr. Therefore, the total new plant fuel consumption is found to be 3,798,818 mmBTU/yr.

The emission factors for the existing boiler plant were provided by the GSA CHP and are shown in Exhibit 7. The emission factors for the combustion turbines and the duct burner were provided by vendors (factors provided by Coen and Solar are also included in Exhibit 7). The emission factors for the stand-by diesel generators were taken from the U.S. Environmental Protection Agency Air Pollutant Emission Factors (AP-42 Fifth Edition). These factors were used to determine the amount of several pollutants produced each year for both of the aforementioned operating scenarios.

D. Load Duration Curve Revisions

Extensive data was provided by the GSA CHP and PEPCo for the amounts of steam production, fuel consumption, chilled water production and electric consumption. This information was provided for several years, however, the time period between November 18, 1996 and November 17, 1997 was chosen to represent a year's worth of data since information was provided for each of the commodities during this time period. Each of the load duration profiles contained in this report begin on 11/18/96 (the origin of the graphs) and end on 11/17/97 (8760 on the ordinate).

In order to separate the boiler plant electric demand from the chiller plant electric demand, the chiller logs were researched to determine the rated efficiency of the existing chiller plant. A curve-fit of this data was used to extract the chiller plant electric demand from the total plant demand (since the chilled water production was known). The chiller plant electric demand was then subtracted from the total plant demand to yield the boiler plant electric demand. These three load profiles are provided in Appendix D as drawing numbers 0611LD01, 0611LD02 and 0611LD03.

The new boiler plant electric demand was determined by subtracting the differences in power consumption of the new ID and FD fans for boiler #5. These two items are the only significant boiler plant load to be altered. By reducing the size of these loads, approximately 1.44 million kWhrs/yr can be saved (dwg #0611LD04). The new boiler plant electric consumption is 8,367,736 kWhrs/yr with a peak demand of 2,563 kW.

The new chiller plant electric demand was found by determining the variation in electric demand based on the chiller efficiency and load. A curve-fit equation for this trend was developed and used to calculate the load profile of the new chiller plant electric consumption assuming the existing load is met by the new plant. Due to the substantial increase in efficiency of the new chiller plant, approximately 6.83 million kWhrs/yr can be saved (dwg #0611LD05). The new boiler and chiller plants' electric demands were summed to find the total new plant electric demand (dwg #0611LD06). The new chiller plant electric consumption is 5,746,914 kWhrs/yr with a peak demand of 5,096 kW. Therefore, the new total plant electric consumption is 14,114,650 kWhrs/yr with a peak demand of 5,528 kW.

Throughout this analysis, the assumption was made that the chilled water demand would remain constant (7,036,317 tonhrs/yr with a demand of 6500 tons). Performing the analysis in this manner provides a greater understanding of the tremendous savings in electricity the new chiller plant can render. The chilled water production load profile is provided as drawing #0611LD07.

The load duration curves 0611LD08 and 0611LD09 show the combustion turbine electric production and total plant steam production. In each of these diagrams, the gas curtailment time is assumed to be 876 hours per year. In this scenario, the total amount of electricity available to be sold is 67,095,724 kWhrs/yr. The amount of steam that can be produced in boiler #5 is 1,196,875 Mlbs/yr. This set of data was included to determine the economic effects of an exceptionally long curtailment (the financial analysis of this project is discussed in more detail in Section VIII of this report).

The load duration curves 0611LD10 and 0661LD11 show a more realistic time period for gas curtailment (336 hours per year). In each of these cases, the amount of electricity available to be sold or wheeled is substantial. In this scenario, the total amount of electricity available to be sold is 71,430,707 kWhrs/yr. The amount of steam that can be produced in boiler #5 is 1,300,986 Mlbs/yr. This set of data more accurately represents the projected operating time for the new plant.

VII. Probable Construction and Implementation Cost Estimate

The probable construction cost estimate (Appendix E) includes the estimated probable costs of equipment (as defined on the Equipment List), materials, and labor necessary for the modification, installation, and construction of the items necessary for the operation of the new chiller and cogeneration plant. Included on each line is a contingency percentage which is used to provide a high value of the job cost estimate. The purpose behind developing such a range estimate is to more accurately predict costs by eliminating arbitrary contingency factors. Typically, the traditional method of estimating summarizes the extension of line item costs and then adds a global contingency percentage. This method artificially reflects a perceived increase in cost and can dramatically affect the economic evaluation of a project. It assumes that all the components in the cost estimate were "under-estimated" and therefore need to be adjusted upward. In reality, each item in the estimate was either a reflection of actual cost derived from previously established cost information of a "best guess" budget number which likely already contains a contingency.

The first page of the estimate includes costs related to the demolition and site preparation of the areas necessary. Page two of the estimate includes the costs associated with the general construction of items necessary for the placement of the new equipment or modifications to existing equipment. The third page presents the capital cost for each piece of the equipment as indicated on the Equipment List. Pages four and five include the costs related to the placement and inter-connection of the new equipment with each other and the existing equipment. Pages six and seven include costs for the necessary piping, fittings, and other miscellaneous items. The last page presents a summary of the costs of the major items previously indicated. The total high value estimated cost for this project is \$24,292,900. This value is used as the lien value of this project in the following section.

Allowances were made for several items for which specific information was lacking at the time the estimate was made. On page 1 of the estimate, a \$92,250 allowance was estimated for the removal of lead paint and asbestos that may be present in areas of the plant that will be affected

by the proposed modifications. Allowances were also made for the construction of a new locker room (page 3; \$50,740) and for the integration of the new boiler controls (page 6; \$512,500).

VIII. Financial Analysis

The financial analysis utilizes the data calculated from the energy balance analyses, the load duration curves, and from information provided by the GSA CHP, PEPCo, Washington Gas and indices provided in "Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis- April 1998," by Sieglinde K. Fuller for the U.S. Department of Commerce. From the latter reference, the projected fuel price indices were taken for the commercial sector for electricity, distillate oil and natural gas (Table Ca-3). This table (Exhibit 8 in Appendix F) was used to determine the projected price of each of the listed commodities based on the 1998 value of said commodity. These indices do not include inflation, therefore, these values were inflated at 2.5% and are represented in Exhibit 9 of Appendix 9.

This analysis compares the present value of the existing plant (Exhibit 10); as though this plant continues to function with the existing loads for the next 20 years. There are two resulting cost projections for the proposed plant; one for a gas curtailment of 876 hours per year (Exhibit 11) and one for a gas curtailment of 336 hours per year (Exhibit 12).

The cost projection for the existing plant does not incorporate the benefit of using the combustion turbines or back-up I/C generators. The projection extends until the year 2020 although the debt service for the new plant extends only 10 years. The steam production, electrical consumption and fuel consumption for the existing boiler plant is assumed to remain constant at the 1998 level. Each of the rates indicated are based on the aforementioned inflated indices. The cost for each year is then calculated.

The chilled water production, the chiller plant electric consumption, water consumption, and sewer demand are assumed to remain constant for the time period indicated. The cost for each year is then calculated using the inflated indices. The total plant costs for each year are then determined and the present value for each year is then found using a 4.1% Department of Energy discount factor. For convenience, the present value is shown based on year 1999 dollars and year 2000 dollars. The cumulative present value for the existing plant after 10 years is \$141,314,567.

Both Exhibits 11 and 12 of Appendix F consider that the new chiller plant will be operational by the year 2000 cooling season and that the combustion turbines will be on-line at the beginning of the year 2001. The cumulative present value for the new plant operating cost projection for a gas curtailment of 876 hours per year is \$137,397,553, and the present value for a gas curtailment of 336 hours per year is \$136,863,829. The difference in these two values is not very significant, but it does show that the time period for gas curtailment does have an effect on the long range value of the plant. Each of these values include the debt service of the probable estimated construction cost financed at 7.15%.

Exhibit 13 of Appendix F contains a summary of all of the data used in the aforementioned financial analysis. This table references calculated and vendor data. The sources of the information are listed as well.

IX. Preliminary Project Schedule

A preliminary project construction schedule was developed to explain the necessity for expediting the contract negotiation and the engineering design phase (Appendix G). As the schedule indicates, if the new chiller plant is to be operating by the cooling season of year 2000, the procurement process must be completed and the new equipment ordered by the middle of August 1999. Should these processes be delayed, the new chiller plant would not be operating until the summer of year 2000. It is therefore considered that all negotiations be completed as soon as possible and that the engineering design phases begin by June 1999.

X. Phase I Project Manual

This report and its attachments serve as the project manual for the preliminary phase of the design of the General Services Administration Central Heating and Refrigeration Plant new chiller/cogeneration plant.

Bill Hatchford —

FI 219-5742

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Monday, March 22, 1999

Unsafe Conditions Found in Capitol
By LARRY MARGASAK
Associated Press Writer

WASHINGTON (AP) - Congress has ignored workplace health and safety standards that it has imposed on the rest of the country and exposed its own maintenance staff to extremely dangerous conditions, records show.

Digging deep into the tunnels and storage spaces of the Capitol and other congressional buildings, inspectors appointed by Congress to police itself found the lawmakers' own maintenance staff had the highest accident rate in the entire government.

Just last week, Congress' Office of Compliance found 14 health and safety violations at the power plant that provides heating and cooling to the Capitol complex. The violations included excessive exposure to coal dust, lack of a comprehensive respiratory program, failure to clean and disinfect respirators, worn-out electrical equipment and a lack of working fire extinguishers.

"When a bulldozer caught on fire, three portable fire extinguishers had to be brought to the bulldozer in order to find one that actually worked," the report said.

During a year combing the Capitol grounds, the inspectors found plenty of hazards. They reported how:

- Congressional workers risked blood-transmitted diseases by digging through contaminated trash without protective clothing;

- The power plant contained high concentrations of the bacteria that causes Legionnaires' disease;

- Recalcitrant officials had to be issued federal citations before they moved flammable liquids stored near exposed electrical wires and in other dangerous places.

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The Office of Compliance inspectors issued a scathing report last November on the work of the 2,000-employee Capitol Architect's office, which is charged with upkeep of the Capitol, eight congressional office buildings, the Library of Congress, the Supreme Court and the congressional power plant.

The architect's office says it is just beginning to change a culture of neglect on Capitol Hill.

"We were behind" in bringing Congress in compliance, said Lynne Theiss, the architect's executive officer. "We are making great strides to get ahead of the curve. We had a general change in our approach to business."

Patricia Dollar, former recycling coordinator for the architect's office, had a firsthand look at one hazard inside a closet in one House office building.

"Six drums were in there," she said. "One of the drums was very rusty and had popped and expanded. We unscrewed a little cock. We looked down and it was bubbling. It was a combination of leftover chemicals from the furniture repair shop. And it was extremely flammable."

Fire also is a serious fear for workers. Hazel Dews, a nighttime custodian in the Senate office buildings, complained, "We are in three buildings with one exit from 11 p.m. to 7 a.m."

The November report concluded, "Overall ... protections for employee health and safety fall far below those that prevail in private companies and government agencies that have good safety programs."

More worries continue to emerge.

The House inspector general reported in December that the Capitol and five other congressional properties were firetraps that left visitors, lawmakers and employees with an "undue risk of loss of life and property."

And in January, architect's employees removed asbestos from a Capitol Police locker room - but never told the officers what they were doing. Asbestos can cause cancer if its dust is inhaled.

Ms. Theiss acknowledged the officers should have been notified, calling it "a failure to communicate."

Congress historically has exempted itself from the federal safety and

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labor laws it imposes and which are enforced on corporate America by agencies such as the Occupational Safety and Health Administration. But when Republicans took over the House in 1995 they engineered passage of legislation that committed Congress to follow those statutes and created the Office of Compliance to enforce them.

The office paints a portrait of a Capitol slow to adjust. It reported that two years ago inspectors found "improper storage of excessive quantities of flammable liquids at several locations" that were characterized as a "potential catastrophe."

When inspectors returned for more recent checks, they found the same materials still present.

"To get these hazardous materials removed, the general counsel had to issue citations, which finally resulted in the elimination of this serious hazard," the report said.

Ms. Theiss said the architect's office obtained "the right containers" after the initial inspection, but "we did not reduce the volumes. Quite honestly, I think it was an oversight."

The Office of Compliance also found that the architect's office had "the highest accident rate in the federal government." The rate of lost time due to injuries on Capitol Hill was about five times higher than for the U.S. Forest Service, whose workers fight massive wildfires, it said.

Ms. Theiss said there has been "some minimal improvement" by instituting training programs on such issues as how to "safely use a ladder, how to safely store a ladder."

She said some congressional trash operations were also shut down last summer to re-evaluate safety issues, and workers were subsequently given protective clothing like aprons, gloves, tongs and proper shoes.

----- INDEX REFERENCES -----

KEY WORDS:	CONGRESS
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Congressional and Intergovernmental Affairs (S)



TO: ROGER VALENTINO
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DATE: 5/20/99 PAGES: 3

COMMENTS: Roger: Plan in all day tomorrow,
& the 27th & 28th.
The office are Norton, Dave,
Hoyer, Myron, Stork, Sam Hutchinson
Dan, Vernon

**General Services Administration
National Capital Region
Heating Operations & Transmission District**

Background

- The General Services Administration (GSA) generates and distributes high pressure steam to more than 50 million square feet of office space in 100 buildings in Washington, DC through the National Capital Region's Heating Operations & Transmission District (HOTD). HOTD delivered 1.5 billion pounds of steam to its customers in 1998.
- Originally built in 1933, HOTD is the Federal Government's largest district energy system. It consists of two federally owned steam generating plants and a steam distribution system comprising 7 miles of tunnel and 5 miles of buried pipe.
- The primary fuel source is natural gas. The system complies with all EPA and DC government air pollutant emission regulations and permit conditions.
- HOTD is not the only provider of steam in the metropolitan Washington area. The Department of Defense provides steam to its facilities from the Pentagon and Navy Yard plants, and the Architect of the Capitol provides steam to legislative buildings from the Capitol Heating Plant.

Current Status

- GSA's objectives are to provide a cost effective, environmentally sound, energy efficient, reliable and secure source of steam for its customers. Over the past several years, GSA continuously has improved its operations to meet these objectives. Deregulation and the availability of improved technology provide GSA with a renewed opportunity to seek alternatives to its current method of providing steam to its customers.

Request for Information

- GSA is issuing a Request for Information (RFI) to seek ideas on alternative means of providing energy services. GSA is particularly interested in responses which incorporate innovative energy technologies, such as co-generation, and which otherwise demonstrate reliability, the likelihood of lower operating costs, reduction in overall energy consumption and pollutant emissions, and which do not diminish regional air quality throughout the greater metropolitan region. Retention of the existing steam plants is not a

minimum requirement.

- GSA will review responses to the RFI and if cost effective, environmentally superior alternatives exist and they make sense to pursue, GSA will develop a specific scope of work and detailed specifications and, consistent with applicable laws and regulations, work with the private sector to implement the alternative(s).

**To: Todd Stern
 Roger Ballentine**

From: Bill Antholis

Subject: Co-generation Project for Federal Government Buildings

Summary

The federal government buildings in the District of the Columbia consume significant amounts of energy in the form of electricity and steam used for lighting, heating, and cooling, and used to power office and industrial equipment. This energy is generated at a number of power stations, both publically and privately owned. The redundancy of these facilities suggests that more cost-effective, energy-efficient, and environmentally sensitive configurations may exist for generating power across the entire system, particularly through using waste recovery methods. Such a reconfiguration would be a significant effort to advance Administration efforts at promoting more sustainable uses of energy while saving considerable amounts of tax-payer dollars.

Pepco has submitted a formal proposal to use its current contract for providing electricity to federal government buildings in the District of Columbia to also provide heat for government and Congressional buildings. To do so, Pepco (in partnership with Trigen Corp.) would launch an innovative cogeneration project. This project would take waste steam from Pepco's electricity power plant in Alexandria and pipe it to the federal steam grid. Such a project would likely result in significant cost savings and environmental benefits.

Lawyers for the General Services Administration feel that Pepco's contractual authority for such a project is weak, however, since Pepco's current electricity contract does not explicitly extend to the provision of steam heat. In their view, proposals for any such project would need to withstand a formal competitive bid review, as well as a process to determine whether impacted federal employees might be able to provide the same services at less cost. Notwithstanding these contractual hurdles, a co-generation project for the federal government and congressional buildings merits serious consideration. This memo lays out the steps which we should consider in responding to the Pepco-Trigen proposal, and in moving forward on exploring a co-generation project.

I. The Pepco-Trigen Proposal

Pepco's area-wide contract. Pepco currently provides electrical power to federal government buildings in the District of Columbia under an "area-wide contract"

signed over a decade ago, and updated recently. This power is generated at a coal-fired plant located on the Potomac River just north of Old Town Alexandria, Virginia. The Old Town Plant also produces a large amount of waste steam that is currently simply dumped into the Potomac. Pepco-Trigen (a joint-venture subsidiary of Pepco) has proposed piping this waste steam back into the District of Columbia, and linking this steam to the pipe grids that currently heat the federal government and the Congressional buildings on Capitol Hill. In doing so, they would effectively obviate the use of two natural gas fired GSA power plants currently used to heat the federal government buildings, as well as the coal fired plant that heats Capitol Hill (owned and operated by the Architect of the Capitol). Pepco-Trigen proposes to sell this steam to the government at more than 25% below what it currently costs the government and congress to generate their own steam, and that Pepco-Trigen would set up a co-gen system without any cost to taxpayers. Doing so would not only save money, but would also reduce local air pollution and carbon dioxide emissions by a considerable amount -- perhaps as much as 30% below current levels on both sets of emissions.

Pepco-Trigen has proposed to do this project under the existing Pepco contracts to provide electricity to the government and to Congress. While Pepco's initial "area-wide contract" with the federal government is for electrical utility services, it also does include "any commodities, financial incentives, goods and/or services generally available from [PEPCO]." (emphasis added). This contract was recently amended to permit the government to purchase from Pepco "energy conservation measures" which are aimed at "energy savings, demand reduction and/or related cost savings in Federal facilities." As such, in Pepco-Trigen's view, the cogeneration project does not require that a competitive bid process be put in place, and Pepco-Trigen feels that a sole-source contract can be drawn up for these purposes. Moreover, while Pepco-Trigen recognizes that this would be an expedited contracting route that may enjoin some criticism, they consistently cite President Clinton's October 1997 speech on climate change and his promise to work with businesses to help cut through red-tape and unnecessary government restrictions that inhibit gains in energy efficiency and emission abatement.

The General Services Administration Response. Though Pepco-Trigen's proposed cogeneration project is attractive for both its obvious cost and environmental benefits, GSA lawyers have raised concerns about its contractual standing. According to a preliminary reading by GSA's general counsel office, the proposed services do not fully fall under the original area-wide contract, principally because steam heat is not a commodity, but rather a non-regulated utility service. As such, purchasing steam would require a competitive bid process. Moreover, GSA lawyers have raised concerns about whether the modification of the original Pepco contract with GSA was allowable under the

original contract. (GSA did not answer whether the Pepco-Trigen proposal would be acceptable under the modified contract, if that modification were deemed to be allowable.) GSA has not provided a formal position on this proposal, however, pending further direction on whether they should complete their assessment. Still, it is their view that moving forward with such a contract would stand a strong chance of drawing a legal challenge from another energy services company.

Pepco-Trigen remains confident in the contractual basis for the project. They do accept the theoretical possibility of such a challenge, but they both are willing to take that challenge and they push back on the government saying that this is as much a policy call as a legal call. That is, on such an issue, the Administration would be setting an important precedent in expediting a project that saves energy and reduces local air pollution and greenhouse gas emissions.

Action required: Regardless of what is decided, it is critical that the Administration respond as soon as possible, formally or informally, to Pepco-Trigen's proposal.

Beyond Pepco's Area-Wide Contract

If we accept GSA's legal concerns about the limited applicability of Pepco's area-wide contract, pursuing a cogeneration project will necessarily involve the Administration in a highly visible political process -- and ultimately an even more visible construction project -- with several parallel components. Contractually, the ultimate private contractor chosen would need to demonstrate that its approach was the lowest cost available while still meeting key design criteria. In addition, the project would have to contend with rules designed to protect federal employees during the privatization of government-provided services. Once such a project were completed, eighteen months of construction would begin on a project visible to anyone driving from downtown Washington to National Airport. In short, for better or worse, the project would become a daily reminder of federal efforts at energy efficiency. The sensitive nature of these components would require the support of the highest levels of the Administration and Congress, local governments in the District and in northern Virginia, and local labor unions and environmental groups.

Demonstrating low cost, in sync with key design criteria. One route for identifying a contractor would be a full competitive bid process, which could take several years to conclude -- almost certainly not possible before early 2001. Alternatively, the Administration could explore an expedited approach that still incorporated a fair and open process, allowing interested private sector

contrators to explore providing cogeneration services to federal government buildings. Such an approach would require three major elements: conducting an expedited competitive review, reaching agreement with federal employees who may be impacted by any privatization of services currently provided by the government, and reaching agreement to move forward with members of congress. (I list these here in order of conceptual importance, but successfully moving forward on this project will mean completing these steps in reverse order.)

- . ***Request for Information:*** Rather than pursue a lengthy competitive bid process, it may be possible to use a contracting tool known as a "request for information." The innovative nature and significant projected cost-savings of the Pepco-Trigen proposal -- and the obvious advantage that Pepco has in already owning and operating the main electrical power facility in the region -- may mean that no other serious competitors exist for providing the wealth of benefits identified in the Pepco-Trigen plan. As a result, the General Services Administration could publish a "request for information" in the Commerce Business Daily that invites input from all contractors who have ideas for a single program that would achieve the various benefits that would come from a large cogeneration project. These benefits would include:

- ▶ lowest cost: obtaining the lowest possible overall energy bill for the federal community within the District;
- ▶ highest efficiency in energy provision: reducing overall energy production in the provision of energy services;
- ▶ lowest local air pollution: reducing emission of pollutants such as NO_x and SO₂ across all federal government and Congressional facilities and energy sources;
- ▶ lowest carbon emissions: reducing carbon emissions across all federal government and Congressional facilities and energy sources.

Developing a Request for Information would require GSA to publicize, along with these criteria, a listing of current federal and Congressional facilities and energy sources, the current cost of energy services, the current rate of energy efficiency in providing those services, and current levels of local area-wide air pollution and carbon emissions -- in addition to other information that lawyers and technical specialists from GSA, EPA and DOE feel appropriate. Businesses would have 90 days (or some other short time frame) in which to come up with realistic plans for ways of meeting these design criteria. If at the end of that period, no more than one credible plan were to be put forward, then a competitive bid process would be avoided. If two or more roughly comparable projects were suggested, then a full competitive bid process would begin.

Protection of Displaced Federal Employees: If a cogeneration project of the scope envisioned by Pepco-Trigen were to be undertaken, it is quite likely that this would mean the elimination of jobs for some federal employees. Currently about one hundred employees work in the operation of the GSA steam plants, and another XX employees work at the Capitol Hill coal plant. Federal regulations currently require that if any commercial service provided by government can be done more cost-effectively by private contractors, those federal employees who would be displaced in the process should have an opportunity to bid on such a project.

As with the competitive bid process, there may be ways to expedite efforts at addressing the concerns of impacted employees. Pepco-Trigen, for instance, has asserted that they are "committed to working with the GSA to satisfactorily address legitimate concerns of incumbent Federal employees who operate and maintain the GSA steam system, including providing those employees with a right of first refusal..." In addressing those concerns, however, Pepco-Trigen has requested that the government waive a lengthy formal cost-comparison, under GSA's authority to do so if it "can establish that the in-house operation has no reasonable expectation of receiving award."

If the Administration decides to solicit ideas for a cogeneration project, it should consider whether and how to include in such a solicitation guarantees that the legitimate concerns of federal employees are adequately addressed. For that reason, it is imperative to begin discussions with potentially affected employees and related labor unions *prior* to issuing any request for information on such a proposal.

Congressional Involvement: Early consultations with key members of Congress will be critical to moving forward with the release of even a Request for Information on a cogeneration project. The scope of the project alone will ensure that it comes under considerable Congressional scrutiny. In addition, many of the affected employees may be constituents of members from suburban communities. Most importantly, however, the project is most likely to meet its cost and environmental goals if it is extended to include the coal fired power plant that currently heats Capitol Hill buildings and facilities, as this is the dirtiest polluting plant in the region. Since the Request for Information must include this plant as part of the project's scope -- as well as extensive information about the energy produced and pollution generated by this plant -- cooperation by appropriate members of Congress and by the Architect of the Capitol is essential.

LIST OF PARTICIPANTS

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>	<u>FAX</u>
✓ Nicole D. Bayert	DoD GC	703-693-4842	703-693-4507
Bill Shapiro	PEPCO (Potomac Capital)	202-775-4628	202-857-5760
Tom Barletta	Stepsto-Johnson	202-429-8058	202-429-3904
Bob Williams	Troutman Sanders	404-885-3438	404-885-3900
Tom Jensen	Troutman Sanders	404-885-3438	404-885-3900
Mark Hall	Trigen Energy	914-286-6621	914-948-9157
✓ Lydia Kupersmith	CSA-OEC	202-708-7877	202-708-4655
Beth Shearer	GSA (6PNE)	816-823-2674	816-823-2696
✓ Chip Morris	GSA (OGC)	202-501-0430	202-501-1944
✓ Mike Ettner	GSA (OGC)	202-501-0727	202-501-0583
Bill Antholis	White House	202-456-2198	202-456-5334
✓ Peter Potochney	DoD (Housing & Energy)	703-614-5356	703-695-1493

Request for Information

District Energy Options

U.S. General Services Administration
National Capital Region
Washington, DC

Introduction

The United States General Services Administration (GSA), National Capital Region (NCR), is seeking information on options to provide certain energy services to its federal customers within the downtown area of Washington DC currently provided by GSA. GSA's Heating Operation & Transmission District (HOTD) provides generation and distribution of high-pressure steam to 100 buildings and generation and distribution of chilled water to three buildings. Additionally, HOTD provides repair services to customers for various steam-related problems.

GSA's objectives are to provide a more cost effective, environmentally superior, energy efficient and reliable source of steam and other utility services to its customers. The purpose of this Request for Information (RFI) is to enable GSA to explore all viable alternatives, consistent with its stated objectives, to how it currently provides energy services to its federal customers. GSA wants to provide energy services to its federal customers using the method that meets or exceeds the objectives and invites information and ideas on alternatives that do so.

Baseline Information and Data

HOTD is the Federal Government's largest district energy system. Originally built in 1933, the system consists of two federally owned steam generating plants with a

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designed capacity of 2.6 million Lbs. per hour of high pressure (250 psig.) steam. HOTD also has a refrigeration plant with a designed capacity of 12,000 tons of cooling per hour. The steam generating plants are tied to a steam distribution system comprising seven miles of tunnel and five miles of buried pipe with approximately 67 manholes. The distribution system supplies more than 50 million square feet of office space in 100 government and quasi-government buildings in the vicinity of the Mall at the heart of the Nation's Capital, Washington DC.

HOTD's steam plants have capabilities for firing three fuels (coal, oil, and natural gas). Plant operating permits, however, require use of natural gas as the primary fuel source, with low sulfur, number 2 fuel oil for emergency back up. Burning of coal is precluded. The annual steam delivered to the customer in 1998 was approximately 1.5 billion Lbs. Peak demand can reach one million Lbs. per hour. The system is in compliance with all EPA and DC government air pollutant emission regulations and permit conditions.

HOTD maintains its current level of reliability through its broadened system redundancy. The system has total design generating capacity of 2.6 million Lbs. per hour, while the average steam delivered to the system ranges only from 142,000 to 453,000 Lbs. per hour. This broadened redundancy exists because there are 11 boilers located in two generating plants tied to one distribution system. During peak winter loads, as many as four boilers are on-line. During summer loads, as little as one boiler is on line. Individual boiler information can be found in Tables 3 and 4.

Operating costs for HOTD are relatively stable except for fuels and utilities, which vary based on changing weather conditions. In 1998, HOTD's administrative,

operations, and maintenance costs were \$9.5 million. Its natural gas, electricity and water costs totaled \$17.4 million.

GSA is presently exploring several cost reduction opportunities. Current operating plans call for operation of only one generating plant at a time. This initiative has reduced personnel and maintenance requirements. To reduce the price of fuel, natural gas is being procured through the wholesale market. Management continues to review and implement outsourcing and other contracting mechanisms to achieve greater efficiency in the overall administration of the facilities and the organization. Finally, GSA is planning to construct a cogeneration system within its Central Heating and Refrigeration Plant. This modification will incorporate natural gas fired turbine electric generators, modification of an existing boiler to a waste heat recovery boiler, and installation of new refrigeration chillers. This modification, when completed, will change some of the table data regarding emissions, natural gas use, electricity use, and Central Plant Boiler # 5 fuel type and design capacity.

In addition to annual operating costs and environmental factors, GSA has other operational and cost considerations that it will take into account in reviewing ideas submitted in response to this RFI. For example, GSA has invested in capital improvements to the steam plants and steam distribution system. How various alternatives approach the existing physical assets (retention, use, sale, and expansion) will be viewed in the context of the Federal government's capital investments. In addition, GSA has ongoing maintenance obligations for the existing steam plants, distribution systems, and steam using equipment in buildings. Alternatives that continue use of steam means that the current workforce may be required to continue maintenance of all or part

of those systems and suggested labor cost savings, if any, would be viewed in that context.

If an alternative includes closure of either the generating plants or the distribution system, in whole or in part, with resulting mothballing or decommissioning of those facilities, such alternatives will bring into play additional factors and costs. GSA's existing workforce operates and maintains the generating plants and distribution system, with contractor support. GSA will take into consideration whether, and in what manner, an alternative proposing closure of the government operating functions will impact its workforce. In addition, closure of one or both of the generating plants may result in additional costs, including but not limited to, potential environmental remediation. Thus, alternatives that propose closure of some or all of the physical assets, will be viewed in the context of these consequences. Finally, the HOTD system provides vital services to facilities that are critical to national security. Accordingly, reliability and security of these services is important.

Additional baseline information and data can be found in Tables 1 through 4.

Table # 1
Emissions Data - Central & West Plants
1998 Calculated Emissions (In Tons)

Sulfur Dioxide (SO ₂)	0.9
Nitrogen Oxide (NO _x)	190.04
Carbon Monoxide (CO)	35.4
Volatile Organic Compounds (VOCs)	2.77
Total Suspended Particulates (TSP)	4.25

Table # 2
Energy & Cost Data - Central & West Plants

1998	
Monthly Range of Steam delivered	45,000 to 221,000 Mlbs.
Average Steam Delivered lbs./Hour	142,000 to 453,000
Annual Natural Gas Use (3,200,000 MMBtu)	\$13,551,390
Annual Electricity Use (27,000,000 KWH)	\$2,034,089
Annual Water & Sewer Use (471,000 Cu. Ft.)	\$1,822,577

Table # 3
Central Plant Boiler Data

Boiler	Fuel	Design Capacity
No. 1 Boiler	Gas/Coal Fired	180,000 lbs./hr.
No. 2 Boiler	Gas/Coal Fired	180,000 lbs./hr.
No. 3 Boiler	Gas/Oil Fired	400,000 lbs./hr.
No. 4 Boiler	Gas/Oil Fired	400,000 lbs./hr.
No. 5 Boiler	Oil/Coal Fired	220,000 lbs./hr.
No. 6 Boiler	Gas/Oil/Coal Fired	220,000 lbs./hr.

Table # 4
West Plant Boiler Data

Boiler	Fuel	Design Capacity
No. 1 Boiler	Gas/Oil/Coal Fired	180,000 lbs./hr.
No. 2 Boiler	Gas/Coal Fired	180,000 lbs./hr.
No. 3 Boiler	Gas/Oil Fired	220,000 lbs./hr.
No. 4 Boiler	Gas/Coal Fired	180,000 lbs./hr.
No. 5 Boiler	Gas/Oil Fired	220,000 lbs./hr.

GSA Objectives

GSA invites information and ideas on alternative means of providing energy services to its federal customers, which satisfy each of the objectives outlined below.

1. **Costs** – GSA is seeking alternatives that will result in lower costs to the Federal government. Submissions should describe, with particularity, proposed cost savings and demonstrate how cost savings can be transferred to the customer base. If proposed cost savings result from changes in the workforce, those changes must be specifically noted and discussed.

2. **Environmental Performance & Energy Conservation**
GSA is seeking alternatives that:

- Reduce overall energy consumption in Federal facilities and meet goals mandated by the Energy Policy Act of 1992 (PL 102-486).
- Employ and promote innovative energy technologies.
- Reduce regional pollutant emissions including carbon.
- Do not diminish regional air quality throughout the greater metropolitan region.

3. **Reliability** – GSA is seeking alternatives that will assure reliable supply of 250 psig. saturated steam to its customers, as well as chilled water where applicable.

4. **Asset Management/Protection** – GSA is seeking alternatives that take into consideration the existing HOTD physical assets, which include the energy generating plants, the distribution system and infrastructure. Alternatives should address whether the assets will be retained in whole or in part, and if so, how they will be operated, maintained, renovated and how physical security will be provided. Respondents should assume that no federal funding would be available to accomplish future capital improvements.

Range of Alternatives

As stated, GSA is seeking alternatives that meet or exceed its stated objectives. Alternatives that may be considered include, but are not limited to:

- Providing steam from a non-GSA source into the GSA steam distribution system. (Ideas may propose the use of one or both GSA steam plants as reserves to meet reliability and peak needs, but should so specifically note in the submission.)

- Replace or incorporate existing GSA steam plant and site into a new or expanded co-generation plant to serve GSA steam and other potential power needs. (Ideas may include co-generation capabilities that exceed GSA's needs with surplus being sold into commercial markets with no risk or cost to the Federal government or combining GSA's needs with non-GSA requirements.)
- Supply steam needs of GSA buildings with steam generators co-located with the buildings (i.e., distributed resources) which include increased energy efficiency technology, such as co-generation of power for the buildings.
- Expanding steam use in buildings for other energy end-uses or conversely, conversion of building steam end-uses to another energy source.

Regardless of the alternative or approach, responses to this RFI must be based on the objectives listed above.

How to Submit Responses

Responses to this RFI are to be submitted in writing. No specific format is required. However, please include in your submission, ideas of how you would accomplish GSA's objectives. Although this is not a Request for Proposals, we would like to receive ideas and/or plans that contain sufficient detail to facilitate informed discussion of alternatives. Upon request, GSA will provide additional information if available. Please send any request for information to the individual identified below. After receipt and review of submissions, GSA may request meetings with any respondent to review the material presented and to answer questions. Your response to this request for information should be submitted by July 16, 1999 to:

Mr. Joel Klotz
Manager, Maintenance & Engineering Office
Heating Operation & Transmission District (WPO)

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05/27/99

U.S. General Services Administration, NCR
Central Heating and Refrigeration Plant
13th & C Streets, SW
Washington, DC 20405

Responses will be used for information and planning purposes only, and will not constitute an offer that may be accepted by the Government to form a binding contract.

If you have any questions or require further information, please contact Joel Klotz at (202) 690-9720, ext. 130, or by facsimile at (202) 690-9777, or by electronic mail at joel.klotz@gsa.gov.

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the day ~~_____~~]

Intelligence Budget

Y2K liability

social security "lock box"

Noon, Monday June 7

Sharon Ketch

Request for Information *District Energy Options*

U.S. General Services Administration
National Capital Region
Washington, DC

Introduction

The United States General Services Administration (GSA), National Capital Region (NCR), is seeking information on options to provide certain energy services to its federal customers within the downtown area of Washington DC currently provided by GSA. GSA's Heating Operation & Transmission District (HOTD) provides generation and distribution of high-pressure steam to 100 buildings and generation and distribution of chilled water to 3 buildings. Additionally, HOTD provides repair services to customers for various steam-related problems.

GSA's objectives are to provide a reliable, efficient, cost effective, secure and environmentally sound source of steam and other utility services to its customers. The purpose of this Request for Information (RFI) is to enable GSA to explore all viable alternatives to its current business practices including, but not limited to, emerging distributive generation technologies, co-generation, and the advantages made possible through restructuring of natural gas and electric utilities. GSA wants to acquire energy services using the most economical method that meets or exceeds the objectives discussed within and invites information and ideas on all alternatives.

This sounds to me like we are primarily motivated by environmental superior alternatives.

what is "viable"? we want to explore all environmental emissions satisfactory, not all "viable" alternatives.

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Baseline Information and Data

HOTD is the Federal Government's largest district energy system. Originally built in 1933, the system consists of two federally owned steam generating plants with a designed capacity of 2.6 million Lbs. per hour of high pressure (250 psi) steam. HOTD also has a refrigeration plant with a designed capacity of 12 thousand tons of cooling per hour. The steam generating plants are tied to a steam distribution system comprising 7 miles of tunnel and 5 miles of buried pipe with approximately 67 manholes. The distribution system supplies more than 50 million square feet of office space in 100 government and quasi-government buildings in the vicinity of the Mall at the heart of the Nation's Capital, Washington DC.

HOTD's steam plants have capabilities for firing three fuels (coal, oil, and natural gas). Plant operating permits, however, require use of natural gas as the primary fuel source, with low sulfur, number 2 fuel oil for emergency back up. Burning of coal is precluded. The annual steam delivered to the customer in 1998 was approximately 1.5 billion Lbs. Peak demand can reach 1,000,000 pounds per hour. The system is in compliance with all EPA and DC government air pollutant emission regulations and permit conditions.

HOTD maintains its current level of reliability through its broadened system redundancy. The system has total design generating capacity of 2.6 million Lbs. per hour, while the average steam delivered to the system ranges only from 142,000 to 453,000 Lbs. per hour. This broadened redundancy is found in the superintendence of 11 boilers located in 2 generating plants tied to one distribution system. During peak winter

loads as many as 4 boilers are on-line. During summer loads as little as one boiler is on line. Individual boiler information can be found in Tables 3 and 4.

Operating costs for HOTD are relatively stable, except for fuels and utilities, which vary based on changing weather conditions. In 1998, HOTD's administrative, operations, and maintenance costs were \$9.5 million. Its natural gas, electricity and water costs totaled \$17.4 million.

GSA is presently exploring several cost reduction opportunities. Current operating plans call for operation of only one generating plant at a time. This initiative has reduced personnel and maintenance requirements. To reduce the price of fuel, natural gas is being procured through the wholesale market. Currently, a study is being conducted to determine the feasibility of incorporating cogeneration of electricity with steam. Over recent years, many energy and cost saving technologies have been installed. Finally, management continues to review and implement outsourcing and other contracting mechanisms to achieve greater efficiency in the overall administration of the facilities and the organization.

In addition to annual operating costs, GSA has other operational and cost considerations that we will take into account in reviewing ideas submitted in response to this RFI. For example, GSA has invested in capital improvements to the steam plants and steam distribution system. How various alternatives approach the existing physical assets (retention, use, sale, expansion) will be viewed in the context of the Federal government's capital investments. In addition, GSA has ongoing maintenance obligations for the existing steam plants, distribution systems, and steam using equipment in buildings. Alternatives which do not completely eliminate steam use means that the

current workforce may be required to continue maintenance of all or part of those systems and suggested labor cost savings, if any, would be viewed in that context. Further, if an alternative includes closure of either the generating plants or the distribution system, in whole or in part, with resulting mothballing or decommissioning of those facilities, such alternatives will bring into play additional costs including but, not limited to, potential environmental remediation. Thus, alternatives, which propose closure of some or all of the physical assets, will be viewed in the context of these consequences. Finally, the HOTD system provides vital services to facilities that are a critical to national security. Accordingly, reliability and security of these services is important.

Additional baseline information and data can be found in Tables 1 through 4.

Table # 1
Emissions Data - Central & West Plants
1998 Calculated Emissions (In Tons)

SulfurDioxide(SO ₂).....	0.9
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CarbonMonoxide(CO).....	35.4
VolatileOrganicCompounds(VOCs).....	2.77
TotalSuspendedParticulates(TSP).....	4.25

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Monthly Range of Steam Delivered.....	45,000 to 221,000 Mlbs.
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No. 5 Boiler	Oil/Coal Fired	180,000 lbs./hr.
No. 6 Boiler	Gas/Oil/Coal Fired	180,000 lbs./hr.

Table # 4
West Plant Boiler Data

Boiler	Fuel	Design Capacity
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No. 2 Boiler	Gas/Coal Fired	175,000 lbs./hr.
No. 3 Boiler	Gas/Oil Fired	180,000 lbs./hr.
No. 4 Boiler	Gas/Coal Fired	175,000 lbs./hr.
No. 5 Boiler	Gas/Oil Fired	180,000 lbs./hr.

GSA Objectives

GSA invites information and ideas on alternative means of providing energy services to its federal customers. Alternatives that may be considered include, but are not limited to:

- Providing steam from a non-GSA source into the GSA steam distribution system. (Note: Ideas may propose the use of one or both GSA steam plants as reserves to meet reliability and peak needs, but should so specifically note in the submission.)
- Contractor operation of the existing GSA steam plant and or GSA steam distribution system. (Note: Ideas may include operation of GSA facilities, fuel supply to the GSA plant, and use of GSA facilities to expand service to GSA and non-GSA facilities.)
- Increasing the capacity of the GSA plant to provide more steam and cooling services to serve additional customers with steam and cooling services. (Note: Alternatives following this approach would be expected to absorb some or all of the risk of expansion, which may include service to non-GSA customers. Alternatives may include options to include heat and cool storage.)
- Replace or incorporate existing GSA steam plant and site into a new or expanded co-generation plant to serve GSA steam and potentially power needs. (Note: Ideas may include co-generation capabilities that exceed GSA's needs with surplus being sold into commercial markets with no risk or cost to the Federal government.)

which satisfy each of the objective outlined below

Is it necessary/standard to propose alternatives

- increased efficiency technology, such as
- Supply steam needs of GSA buildings with steam generators co-located with the buildings (i.e., distributed resources) which may include co-generation of power for the buildings.
 - Conversion of steam end-uses in buildings to another energy source.
 - Improve effectiveness in fuel supply acquisition and management. Natural gas is presently purchased from wholesale suppliers and delivered over the Washington Gas distribution system. It may be more economical to connect directly to the interstate transmission pipeline. Similarly, ideas may include the use of financial hedges or other mechanisms to reduce price volatility and reduce overall fuel costs.

and satisfy each of,
 Regardless of the alternative or approach, responses to this RFI must be based on the objectives listed below. Respondents are requested to address each objective in their submissions.

1. **Reliability** – GSA is seeking alternatives, which will assure reliable supply of 250 psi. saturated steam to its customers, as well as chilled water where applicable.
2. **Operating Costs** – GSA is seeking alternatives that will result in lower costs of operation. Submissions should describe, with particularity, proposed cost savings and demonstrate how cost savings can be transferred to the customer base.
3. **Environmental Compliance & Energy Conservation** – GSA is seeking alternatives that:
 - Reduce overall energy consumption in Federal facilities and meet goals mandated by the Energy Policy Act of 1992 (PL 102-486).
 - Employ and promote innovative energy technologies.
 - Reduce pollutant emissions and, in particular, significantly reduce carbon emissions.
4. **Responsible Asset Management/Protection** – GSA is seeking alternatives which take into consideration the existing HOTD physical assets, which include the energy generating plants, the distribution system and infrastructure. Alternatives should address whether the assets will be retained in whole or in part, and if so,

how they will be operated, maintained, renovated and how physical security will be provided. Respondents should assume that no federal funding will be available to accomplish future capital improvements.

How to Submit Responses

Responses to this RFI are to be submitted in writing. No specific format is required. However, please include in your presentation, ideas of how you would accomplish the outlined objectives stated within. Although this is not a Request for Proposals, we would like to receive ideas and/or plans that contain sufficient detail to facilitate informed discussion of alternatives. Upon request, GSA will provide additional information if available. Please send any request for information to the individual identified below. After receipt and review of submissions, GSA may request meetings with any respondent to review the material presented and to answer questions. Your response to this request for information should be submitted by **May 30, 1999** to:

Mr. Joel Klotz
Supervisory General Engineer
Heating Operation & Transmission District (WPO)
U.S. General Services Administration, NCR
Central Heating and Refrigeration Plant
13th & C Streets, SW
Washington, DC 20405

Responses will be used for information and planning purposes only, and will not constitute an offer that may be accepted by the Government to form a binding contract. If you have any questions or require further information, please contact Joel Klotz at (202) 690-9720, ext. 130, or by facsimile at (202) 690-9777, or by electronic mail at joel.klotz@gsa.gov.

DETERMINED TO BE AN ADMINISTRATIVE

MARKING INITIALS: M' DATE: 3/4/16
2017-1093-f

**THE NATIONAL CAPITAL ENERGY PROJECT:
FULFILLMENT OF ADMINISTRATION POLICY,
USE OF PEPCO'S AREAWIDE AGREEMENT
AS A CONTRACTUAL VEHICLE,
AND RELATED ISSUES**

Submitted by
Pepco Services, Inc.
- and -
Trigen Energy Corporation

October 1998

**The National Capital Energy Project: Fulfillment of
Administration Policy, Use Of PEPCO's
Areawide Agreement As A Contractual Vehicle,
And Related Issues¹**

"... Climate change can bring us together around what America does best -- we innovate, we compete, we find solutions to problems, and we do it in a way that promotes entrepreneurship and strengthens the American economy. If we do it right, protecting the climate will yield not costs, but profits; not burdens, but benefits; not sacrifice, but a higher standard of living."

President Clinton, October 22, 1997

A. Executive Summary.

1. The proposed project would substitute surplus steam from an existing, efficiently operated PEPCO plant in Alexandria, Virginia, for steam currently being produced by two GSA-owned and operated plants. This would permit the Federal Government to reduce its energy consumption as required by law and Executive Order, and would improve regional air quality consistent with environmental policy goals.
2. PEPCO's existing Areawide Agreement and its accompanying Energy Services Agreement provide an appropriate contractual vehicle for the project.
 - The proposed project is within the scope of PEPCO's existing Areawide Agreement with GSA.
 - Use of the Areawide Agreement is consistent with the GSA's established procurement authority under the Energy Policy Act of 1992 and the Federal Property & Administrative Services Act of 1949.

¹ This document contains proprietary and business confidential information that is exempt from disclosure outside the Government.

- Use of PEPCO's Areawide Agreement is consistent with established practice of civilian and DOD agencies of contracting with utilities for energy-conservation measures under the auspices of areawide agreements.
3. The project is not subject to a requirement for competition.
 - The Energy Policy Act authorizes GSA to negotiate directly with PEPCO.
 - PEPCO is the only entity with the capability to provide substitute steam service on an energy efficient and environmentally effective basis.
 4. The project should not be subject to the complex and time-consuming OMB Circular A-76 process.

B. Introduction and Policy Overview.

1. Project Summary.

The White House, Old Executive Office Building, and most Federal Government buildings in Washington, D.C., including all principal agency buildings, are heated (and some are cooled) by steam supplied from the General Services Administration ("GSA"). The GSA delivers the steam through pipelines in underground tunnels that extend in a network from Georgetown to the foot of Capitol Hill. The GSA makes the steam at two large boiler plants -- one in downtown Washington, the other in Georgetown -- that are owned and operated by the GSA.

The GSA plants are relatively clean, yet because of their size, location, and operational patterns, they are significant sources of air pollution and greenhouse-gas emissions in the Washington region. The GSA's plants are the largest Federal Government sources of carbon dioxide (CO₂) and other air pollutants in the area. Fired by natural gas, they consume about 3.3 billion BTUs of energy each year, a quantity equal to more than a half-million barrels of oil.

In response to President Clinton's October 1997 call to the private sector to offer ideas for reducing emissions of greenhouse gases, Trigen Energy Corporation ("Trigen") and PEPCO Services, Inc. ("Pepco Services"), a subsidiary of the Potomac Electric Power Company ("PEPCO"), have developed a project (the "National Capital Energy Project"), which would substitute surplus steam from an existing, efficiently operating PEPCO-owned power plant for steam that the GSA makes. Simply, the Trigen-Pepco Services team proposes to collect steam from PEPCO's Potomac River Electric Generating Station (in Alexandria) and deliver it via a new pipeline into the existing GSA pipeline distribution system.

The proposed change in steam source would:

- Reduce GSA's fossil fuel consumption by approximately 1.2 billion BTUs per year.
- Reduce annual CO₂ emissions by approximately 39,000 tons.
- Generate net regional reductions in emissions of other regulated air pollutants (NO_x and SO₂).
- Reduce Federal Government energy costs without additional budget outlays.
 - All capital costs for construction of the project would be advanced by the developers. There would be no up-front cost to the Federal Government. The developers expect to be able to supply steam to the GSA at a price that would be significantly lower than the costs incurred now by the GSA (and ultimately its customer agencies and taxpayers) to make steam in-house.
- Enable the GSA to retire its Georgetown steam plant and restore that property to park land or other public use.

2. Policy Framework.

The Trigen-Pepco Services project would help the Executive Branch comply with the Energy Policy Act of 1992 ("EPACT," P.L. 102-486). The project also fits squarely within, and would advance this Administration's energy and environmental policy goals.

The EPACT requires agencies to install energy-conservation measures and to reduce energy-consumption levels by 20 percent relative to 1985 levels by the year 2000. Executive Order 12902, Energy Efficiency and Water Conservation at Federal Facilities (Mar. 8, 1994) (copy attached at Tab 1), goes one step further, setting a 30 percent energy reduction goal by 2005. As noted above, this project would allow the Executive Office of the President and other GSA steam customers to show significant reductions in energy use² and could be fully implemented within the EPACT and Executive Order 12902 deadlines.

² This assumes that the GSA would agree to allocate the 1.2 billion BTU "credit" for reduced energy use to its customers on some *pro rata* basis; otherwise, the savings would accrue to the GSA alone.

The Trigen-Pepco Services project would provide a compelling and timely example of Administration action to implement President Clinton's October 22, 1997 climate-change policy (excerpt attached at Tab 2). There, the President pledged to improve Federal energy management and procurement through a variety of initiatives, including:

- Improved Federal procurement of energy-efficient technology;
- Use of consolidated purchasing to stimulate markets and lower prices;
- Expanded use of combined heat and power generation; and,
- Expanded public awareness of energy-efficient technologies.

The Trigen-Pepco Services project would move these initiatives forward. In addition to achieving the reductions in CO₂ and other regulated pollutants noted above, the proposed project provides a showcase example of procurement of efficiently generated energy from a combined heat and power facility on a consolidated, interagency basis. The project also has the capacity to provide steam service to additional Federal and private users in the Washington area, thus creating the potential for additional reductions in costs of steam to Federal users as the fixed costs are shared among more users, as well as the potential for additional improvements in regional air quality as other existing generating sources are taken off-line.³ Finally, the project's national profile would showcase the Administration's progress toward addressing the climate-change problem and would expand the public's awareness and encourage implementation of similar opportunities elsewhere.

C. PEPCO's Areawide Agreement, and Its Accompanying Energy Services Agreement, Provide an Appropriate Contractual Vehicle for the Project.

As discussed above, the proposed project would substitute surplus steam from an existing, efficiently operated PEPCO plant in Alexandria, Virginia, for steam currently being produced by two GSA-owned and operated plants. Steam would be provided to Federal users via the existing GSA steam-distribution system, which the project developers would operate and maintain.⁴ This would permit the Government to reduce its energy use and costs and improve regional air quality.

³ The Architect of the Capitol and the Pentagon are two Federal entities which currently operate steam generation facilities and which could potentially be served by steam generated at PEPCO's Potomac River plant.

⁴ Since the project envisions that steam would be supplied directly to Federal buildings through the GSA steam system and would rely on the GSA steam plant for backup and peak period demand purposes, the developers have an interest in ensuring the proper operation and maintenance of the GSA steam system.

1. The Proposed Project is Within the Scope of PEPCO's Areawide Agreement.

The GSA and PEPCO have an existing "areawide agreement" under which PEPCO furnishes utility services to Federal user agencies.⁵ (Copy attached at Tab 3). PEPCO's Areawide Agreement broadly defines the types of "services" that may be provided pursuant to it to include "any commodities, financial incentives, goods and/or services generally available from [PEPCO]." See Modification 1 to PEPCO's Areawide Agreement (copy attached at Tab 4). In addition, the GSA and PEPCO have also entered into an Energy Services Agreement, which is Attachment 1 to PEPCO's Areawide Agreement (copy attached at Tab 5). Modification 1 and Attachment 1 to PEPCO's Areawide Agreement permit the GSA to contract for "energy conservation measures," which are broadly defined as "any specific measure intended to provide energy savings, demand reduction and/or related cost savings in Federal facilities." Modification 1, Mod. 1. B.; see Attachment 1, § A, Definitions, at 5; id. § B.1.A.1, Energy Conservation Measures, at 11-12. Further, Attachment 1 specifically provides that energy conservation measures may include "an energy-related project that results in energy conservation, or demand reduction; and/or . . . in benefits to the Customer Agency other than energy conservation or demand reduction, such as operations and [m]aintenance cost savings, environmental benefits, etc." Attachment 1 § A, Definitions, at 6 (emphasis supplied).

2. Use of the Areawide Agreement is Consistent With the GSA's Established Procurement Authority.

The GSA has authority to contract with PEPCO for the project pursuant to 42 U.S.C. § 8256(c)(3) and 40 U.S.C. § 481(a)(3), which authorize the GSA to negotiate energy-conservation programs and to procure utility services.

Section 152(f) of the EPACT, 42 U.S.C. § 8256(c) (copy attached at Tab 6), specifically authorizes civilian agencies to enter into negotiations with utilities "to design cost effective demand management and [energy] conservation incentive programs."⁶ 42 U.S.C. § 8256(c)(3). A parallel statute, 10 U.S.C. § 2865(c)(3), provides similar authority to DOD agencies. Both the

⁵ An areawide agreement is an agreement between the GSA "and a utility service supplier to cover utility service needs of Federal agencies within the franchise territory of the supplier." Federal Acquisition Regulation ("FAR") 41.101. FAR 41.101, in turn, defines "franchise territory" to be a "geographical area that a utility supplier has a right to serve based upon a franchise, a certificate of public convenience and necessity or other legal means." PEPCO can provide steam and related system services under existing District of Columbia law.

⁶ See also 42 U.S.C. § 8259(4) (defining "energy conservation measures" as those that "improve energy efficiency and are lifecycle cost effective and that involve energy conservation, cogeneration facilities, renewable energy sources, improvements in operations and maintenance efficiencies or retrofit activities").

DOE, the lead agency with responsibility for implementation of the EPACT, and the DOD, have concluded that 42 U.S.C. § 8256(c) and 10 U.S.C. § 2865(d), respectively, authorize Federal agencies to contract with utilities for energy-conservation services under areawide agreements.⁷ Consistent with those interpretations, the Administration has recently re-emphasized the availability of agreements with utilities as a contractual vehicle for achieving energy policy goals.⁸ Indeed, the authority granted under § 8256(c)(3) and 10 U.S.C. § 2865(d) has been relied on by numerous Government agencies to procure a wide variety of energy-conservation services under areawide agreements. For example, the GSA's web site lists approximately 90 areawide agreements which authorize Federal agencies to obtain such services (see Tab 10), and an illustrative list of analogous projects that have been undertaken pursuant to areawide agreements is attached at Tab 11. Moreover, to our knowledge, the use of areawide agreements to obtain energy-conservation services has not been challenged in litigation as beyond the scope of the agencies' procurement authority or beyond the scope of the areawide agreements. Accordingly, we submit that insofar as the purpose of this project is to enable the Government to reduce its overall energy conservation and meet its energy requirements at lower cost, it is within the scope of the GSA's authority under § 8256(c)(3).

In addition to § 8256(c)(3), § 201(a)(3) of the Federal Property & Administrative Act of 1949, 40 U.S.C. § 481(a)(3), specifically authorizes the GSA to enter into contracts for "public utility services." The proposed project is clearly within the GSA's authority under 40 U.S.C. § 481(a)(3) insofar as it involves the procurement of steam, which is a traditional "utility

⁷ See Memorandum from Lawrence R. Oliver, Assistant General Counsel, Energy Efficiency, to John P. Archibald and Victor Petrolati, EE-90, Office of Federal Energy Management, Subj.: Whether Section 152 of EPACT Provides Sufficient Authority to Permit AL to Proceed with a Proposed Energy Management Services Contract With Public Service Company of New Mexico (Dec. 13, 1996) (copy attached at Tab 7); U.S. Navy Memorandum from 09CB1 to 021A, Subj.: Use of Utility Service Contracts to Obtain DSM Service (Jan. 29, 1993) ("1993 Navy Memo") (stating that "[i]f a GSA areawide contract is in place which provides for DSM services, we would generally be required to use that contract unless we could show that it did not meet our requirements in some respect") (copy attached at Tab 8); see also Defense Energy Program Policy Memorandum (DEPPM) 94-1, Subj: Participation in Public Utility Sponsored Energy Conservation and Demand Side Management (EC/DSM) Programs, at 1-2, 4-5, 14 (recognizing that DOD agencies can enter into negotiations with utilities pursuant to 10 U.S.C. § 2865(d) to design and implement EC/DSM projects and that modifications to existing areawide agreements are one vehicle for doing so) (copy attached at Tab 9).

⁸ See Memorandum from President William J. Clinton to the Heads of Executive Departments and Agencies, Cutting Greenhouse Gases through Energy Savings Performance Contracts (July 25, 1998); Memorandum from Jacob Lew, Acting Director, Office of Management and Budget, to Heads of Executive Departments and Establishments, Federal Use of Energy Savings Performance Contracting, at 2 (July 25, 1998).

service.”⁹ See also FAR 41.101 (including steam as an example of a “utility service”). Moreover, nothing in § 481 limits the GSA’s authority to procure utility services to the acquisition of basic commodities, such as steam or electricity, or to supplies and services that are subject to detailed regulation by a local public utilities commission or similar body. For example, in GSA Procurement of Equipment Under 40 U.S.C. § 481(a)(3), B-208422, 62 Comp. Gen. 569, 574-75 (1983) (copy attached at Tab 12), the General Accounting Office (“GAO”) held that the GSA could purchase telephone switching equipment and related installation and maintenance services from a non-regulated supplier under § 481. In reaching that result, the GAO indicated that the GSA’s authority to procure “utility service” under § 481(a)(3) should be interpreted pragmatically and flexibly and “in light of the changes in technologies and methodologies for providing the product or service.” Id. at 574-75.

In that regard, most electric utilities, including PEPCO, today offer energy-related services to their customers in addition to basic electric service. These services enable the customers to reduce their overall energy costs, but are, in a real sense, an integral part of the services offered by the utilities. Moreover, as discussed above, there is a well-established practice in both civilian and DOD agencies of contracting with public utilities for energy-related services under the auspices of areawide agreements.

This established practice also supports the view that FAR Pt. 41, which addresses the acquisition of utility services generally and areawide agreements in particular, should not be read narrowly regarding the types of services that may be acquired under the auspices of an areawide agreement. For example, several provisions in FAR Pt. 41 effectively acknowledge that rates, terms and conditions of service provided under an areawide contract may not be subject to regulation but rather separately negotiated. See FAR 41.204(b) (specifically permitting agencies to negotiate other rates and terms of service); 41.204(c)(2) (providing for separately negotiated rates or terms); see also FAR 41.201(b) (acknowledging that rates, terms or conditions of utility service may not be fixed by a regulatory body).

Finally, we note that the procurement strategy suggested here -- use of the areawide agreement to implement steps that will reduce the Government’s energy consumption and provide related benefits -- is consistent with the Administration’s energy savings and procurement reform policies. As noted above, in E.O. 12902, the President directed Federal agencies to reduce energy consumption by 30 percent by the year 2005. In achieving that goal, E.O. 12902 directed agencies to use “innovative financial and contractual mechanisms” to achieve that goal. See E.O. 12902 § 401; see also id. § 403 (directing agency heads to work with procurement officials to identify barriers to implementation of the EPACT and E.O. 12902).

⁹ Steam is a byproduct of electric generation. The GSA’s web site lists approximately 18 areawide contracts under which steam is supplied to the Government, and according to that list, in most of those cases, the utilities involved are also providing electric service. (See Tab 10.)

Further, one of the upshots of the Vice President's procurement reform initiatives was the inclusion of a "statement of guiding principles" in the FAR. One of those guiding principles is that agency procurement personnel should exercise initiative and sound business judgment in meeting the Government's needs. See FAR 1.102(d). Moreover, FAR 1.102(d) goes on to expressly state that if a specific strategy or practice is not prohibited by law, executive order or regulation, then such a strategy or practice "is a permissible exercise of authority." As discussed above, the acquisition strategy suggested here not only is not prohibited, but is authorized and encouraged by law and executive order.

3. The Project is Not Subject to a Requirement for Competition.

a. GSA Can Negotiate With PEPCO Pursuant to 42 U.S.C. § 8256.

There is an established practice of the DOD and civilian agencies entering into contracts for energy-conservation projects with utilities under the auspices of areawide and related agreements without competition. This practice is based on the authority granted under 42 U.S.C. § 8256(c)(3), in the case of civil agencies, and 10 U.S.C. § 2865(d) for the DOD. Both the DOE and the DOD have explicitly concluded that 42 U.S.C. § 8256(c)(3) and 10 U.S.C. § 2865(d), respectively, provide a statutory exemption from the competition requirements of the Competition in Contracting Act ("CICA"), 41 U.S.C. § 253.¹⁰ In particular, those agencies have concluded that §§ 2865(d) and 8256(c)(3) are within the CICA exception that allows contracts to be awarded where another statute authorizes that a procurement be made through a specified source,¹¹ and, therefore, that agencies may enter into agreements with utilities under existing

¹⁰ Section 8256(c)(3) was based on the parallel DOD statute. The DOD had specifically sought the authority conferred by 10 U.S.C. § 2865(d) to enable it to expeditiously contract with utilities for energy-conservation services "without using time-consuming and complex competitive procurement procedures." Memorandum from Anne Troy, Office of Procurement and Financial Assistance, to Philip Winter (GSA), Statutory Exemption from Competition in Contracting Act's Full and Open Competition Requirement in Demand Side Management and Utility Contracts, July 7, 1994 ("Troy Memorandum") at 3 (copy attached at Tab 13).

¹¹ See 41 U.S.C. § 253(c)(5); FAR 6.302-5.

areawide agreements on a sole-source basis.¹² Further, the GSA has concurred in that position on two occasions.¹³

b. The PEPCO/Trigen Team.

GSA's authority to proceed under PEPCO's Areawide Agreement is supported not only by the exemption from the competition requirements of CICA provided under 42 U.S.C. § 8256(c)(3), but also by the fact that ***only PEPCO, as a practical matter, has existing, efficiently operating steam generation capability necessary to meet the requirements for the project to go forward.*** In particular:

- PEPCO's Potomac River plant is the only existing regional energy facility with a supply of surplus steam of a volume that is adequate to both permit replacement of the GSA steam boilers and that is located near enough to downtown Federal users to be economic.¹⁴
- The PEPCO facility is also the only alternative that can provide substitute steam service without requiring construction of a substantial new energy-generation facility.

¹² See Department of Energy, Federal Energy Management Program, Alternative Financing Guidance Memorandum: Policy Statement #001 (copy attached at Tab 14); Hearing on Federal Agency Energy Management Provisions of the Energy Policy Act of 1992, Before the Senate Committee on Energy and Natural Resources, 105th Cong., 1st Sess. 534 (1997) (response from John B. Goodman, Deputy Undersecretary of Defense for Industrial Affairs and Installations, to Question 1 from Sen. Frank Murkowski) (copy attached at Tab 15); see also 1993 Navy Memo, supra (Tab 8).

¹³ See Memorandum from Amy J. Brown, Assistant General Counsel, Real Property Division (LRA), to Eric Dunham, Portfolio Customer Team, Office of Property Management, Subj.: Section 152 of the Energy Policy Act of 1992 (Apr. 11, 1995) (copy attached at Tab 16); Memorandum from Edward R. Broyles, Deputy Associate General Counsel, General Law Division (LG), to Ida M. Ustad, Associate Administrator for Acquisition Policy (V), Subj.: Section 152 of the Energy Policy Act of 1992 (Nov. 7, 1994) (copy attached at Tab 17); see also Troy Memorandum, supra (Tab 13).

¹⁴ There are no significant power plants in the Washington D.C. area other than those owned by PEPCO. Although the Pentagon and the Architect of the Capitol operate steam plants, those plants do not have the generation or transmission capabilities needed to serve more than their current loads. Expansion of those plants would require significant new construction, environmental permitting, and expenditure of appropriated funds, all of which would prove quite problematic.

Moreover, even if it were economically feasible to construct a new power-generation facility that could provide steam to Federal agency customers at a cost that was competitive to that from PEPCO's facility, construction of a new power plant in the urban core area of Washington, D.C. would face formidable and, most probably, impassible hurdles given the environmental, social and other objections that would surely arise, and it is highly unlikely that such a project could be completed in a timeframe consistent with the energy-reduction goals of the EPACT and E.O. 12902.¹⁵

In that regard, we note that the GAO has upheld sole-source awards in circumstances where it concluded that the (c)(5) exception to CICA -- award to a particular source authorized by statute -- did not apply to the particular procurement at issue, but where the proposed contractor was, in fact, the only responsible source. See Information Ventures, Inc., B-246605, 92-1 C.P.D. ¶ 302 (Mar. 23, 1992) (copy attached at Tab 18); Magnavox Electronic Sys. Co., B-230397, 88-1 Comp. Gen. ¶ 618 (June 30, 1988) (copy attached at Tab 19); see also SEMCOR, Inc. et al., B-279794.2, B-279794.3, 1998 WL 482973 (C.G.) (July 23, 1998) (relying on Information Ventures and Magnavox to uphold a sole-source award because only one source could satisfy the agency's needs). Thus, even if it were determined that 42 U.S.C. § 8356(c) did not authorize a sole-source award to PEPCO under the Areawide Agreement, an award could be justified here under the "one responsible source" exception to CICA. See 41 U.S.C. § 253(c)(1); see also note 18, infra.

4. Summary Regarding Use of PEPCO's Areawide Agreement.

The discussion above demonstrates that there is a sound legal basis for proceeding with the project under PEPCO's Areawide Agreement. While the risk of a procurement protest can not be eliminated in advance, §§ 481(a)(3) and 8256(c), together with E.O. 12902 and FAR 1.102, provide substantial legal support for the GSA's authority to:

- Enter into an agreement that would enable it to reduce its energy costs and to do so through both use of a substitute source of steam and related operation and maintenance services;
- Do so on under the auspices of PEPCO's existing Areawide Agreement and its accompanying Attachment 1; and
- Do so on a sole-source basis.

¹⁵ PEPCO, on the other hand, has all of the necessary environmental permits for the Potomac River facility and anticipates that the modifications required to implement this project would be minor and would conform to all extant permitting requirements.

Moreover, the fact that PEPCO's unique capabilities make it the only "responsible source" provides additional support for proceeding under the Areawide Agreement.¹⁶

D. Availability of Other Contractual Mechanisms.

The project could conceivably proceed under a contractual vehicle other than PEPCO's Areawide Agreement, presumably a separate contract limited to this project.¹⁷ Moreover, in our view, such a contract could properly be awarded on a sole-source basis because, as discussed above, the PEPCO/Trigen team is clearly the only entity with the capability to provide substitute steam service on an energy efficient and environmentally effective basis.¹⁸ However, we are concerned that use of a separate contract is unlikely to be as expeditious as reliance on the Areawide Agreement and that the delay could effectively preclude the project from going forward. Further, we submit that if this alternative were pursued, any steps necessary to confirm that there is only one responsible source should be undertaken as expeditiously as possible, consistent with any applicable legal and regulatory requirements. See FAR 6.303; 6.304.

E. OMB Circular A-76 Should Not be an Obstacle to Going Forward.

OMB Circular A-76 (copy attached at Tab 20) reaffirms the Government's commitment to the acquisition of supplies and services from the private sector. Where it applies, it requires agencies to conduct a "cost comparison" before contracting out functions that are currently being performed by the Government. It also contains provisions for considering the interests of incumbent Federal employees who may be affected by a decision to contract out, including the "right of first refusal" for employment under the contract for openings for which they are

¹⁶ We hope and believe that any steps that may be necessary to appropriately justify reliance on PEPCO's areawide agreement can be accomplished expeditiously. See generally FAR 6.303-1; 6.303-2.

¹⁷ We assume that such a contract would be awarded pursuant to § 481(a)(3) or other multiyear contracting authority. See also FAR 41.205 (authorizing awards of separate contracts for utility services).

¹⁸ See 41 U.S.C. § 253(c)(1); FAR 6.302-1 (providing exception to competition requirements of CICA in situations where the required supplies or services are available from only "one responsible source"); see also FAR 6.302-1(b)(1) (providing that an agency can award a contract without competition under this exception where it has "a reasonable basis to conclude that the agency's minimum needs can only be satisfied by . . . unique supplies or services available from only one source or only one supplier with unique capabilities"); id. 6.302-1(b)(3) (permitting use of this exception in connection with the acquisition of utility services (under FAR Pt. 41) under circumstances where "only one supplier can furnish the service . . . or when the contemplated contract is for construction of a part of a utility system and the utility company itself is the only source available to work on the system").

qualified. See OMB Circular A-76, Revised Supplemental Handbook (Mar. 1996), Pt. 1 § H.2 (excerpt attached at Tab 21); FAR 7.305(c).

Preliminarily, we note that:

- The Government traditionally procures utility services such as water, electricity and steam from the private sector. Similarly, operation and maintenance of Government heating plants or other utility systems is within the set of “commercial activities” that can be contracted out. See OMB Circular A-76, Attachment A (see Tab 20).
- Regardless of whether OMB Circular A-76 applies to this project, the project developers are committed to working with the GSA to satisfactorily address legitimate concerns of incumbent Federal employees who operate and maintain the GSA steam system, including providing those employees with a right of first refusal in accordance with the Circular and FAR 7.305(c).

We believe that the applicability of the Circular to this project should be considered further, and in that regard, we note that OMB Circular A-76 provides that “[t]his Circular and its Supplement shall not be applicable when contrary to law [or] Executive Order.” OMB Circular A-76 § 7.c.(1). We submit, therefore, that the statutory requirement in the EPACT to reduce energy-consumption levels by 20 percent by the year 2000, the contribution the project will make to achieving the Administration's energy management and climate change policy objectives, the direction in E.O. 12902 to use innovative financial and contractual mechanisms and to find solutions to regulatory and procedural barriers to achievement of the Federal energy management requirements of the EPACT and the Executive Order, and the commitment to address the legitimate concerns of incumbent Federal employees, all suggest that the project should not be subject to the complex and time-consuming A-76 process.

The Office of Personnel Management's (“OPM”) recent outsourcing of the performance of background investigations of Federal employees and applicants provides a useful model. There, the decision to outsource performance of background investigations arose out of the recommendations of the Vice President's National Performance Review to reduce the size of Government. However, it was not subject to the A-76 process; rather, the OPM used an alternative approach which demonstrated the potential cost savings from outsourcing without a formal A-76 cost comparison and under which the contractor offered positions to and hired a substantial number of the affected Federal employees. See Hearings on H.R. 3802 and H.R. 3189 Before the Subcomm. on Government Management, Information, and Technology of the House Comm. on Government Reform and Oversight, 104th Cong., 2d Sess. 104-11 (1996) (Testimony of James R. King, Director, OPM) (copy attached at Tab 22). In addition, the OPM awarded the contract to perform the background investigations on a sole-source basis pursuant to one of the exemptions to CICA, see id., a decision that was subsequently upheld in Federal court. See Varicon International v. Office of Personnel Management, 934 F. Supp. 440 (D.D.C. 1996) (copy attached at Tab 23).

However, even assuming that the project is not otherwise exempt from the Circular, we believe that it is eligible for a waiver in accordance with the waiver provisions of the Circular. In considering a possible waiver, it is important to recall that when the Administration published the revised Supplement to the Circular in March 1996 (excerpt attached at Tab 21), one of the key features of that revision was the expansion of the authority to waive the cost-comparison requirements of the Circular in order to facilitate and encourage waivers in appropriate cases.¹⁹ In particular, the OMB stated that a waiver may be justified if an agency undertakes an independent business analysis and determines that significant cost savings or improvements in performance are likely to be achieved. See id.

The specific provisions governing waivers of the cost-comparison process are at Part 1, § E.3 of the 1996 Supplement, which authorizes waivers where:

- Conversion will result in a significant financial or service quality improvement and will not significantly reduce future competition in award or performance of the work; or
- The agency can establish that the in-house operation has no reasonable expectation of receiving award.

While further discussion of a waiver may be necessary, again we believe that there would be no adverse impact on future competition in this situation because, as a practical matter, the only way to achieve the energy-cost reductions and related environmental benefits is through the use of an existing, efficiently operating steam plant with sufficient capacity to meet the Government's steam requirements. For similar reasons, the dependence of the project on access to PEPCO's existing power plant means that the project could not realistically be performed in-house. Further, we believe that the GSA could reasonably establish the project's potential to reduce the Government's energy costs and provide related benefits relative to the current in-house operation without a formal A-76 cost comparison. Again, the recent OPM experience discussed above is instructive and, we submit, supports a waiver on the particular facts presented here.

Finally, we note that even if the cost-comparison process were waived, the provisions of the Supplement to the Circular which address the interests of affected Federal employees, including the requirement that they be given a right of first refusal, still apply, and, as noted above, the project developers are prepared to work with the GSA to address those interests, including recognition of a right of first refusal. See 1996 Supplement, Ch. 1 ¶ H, Personnel Considerations (Tab 21).

¹⁹ See 61 Fed. Reg. 14338, 14340 (copy attached at Tab 24). In its comments accompanying the 1996 revisions to the Supplement, the OMB specifically noted that waiver provisions under the former (1983) version of the Supplement were "too narrow," with "only one waiver having been issued in over 12 years." Id. at 14340.

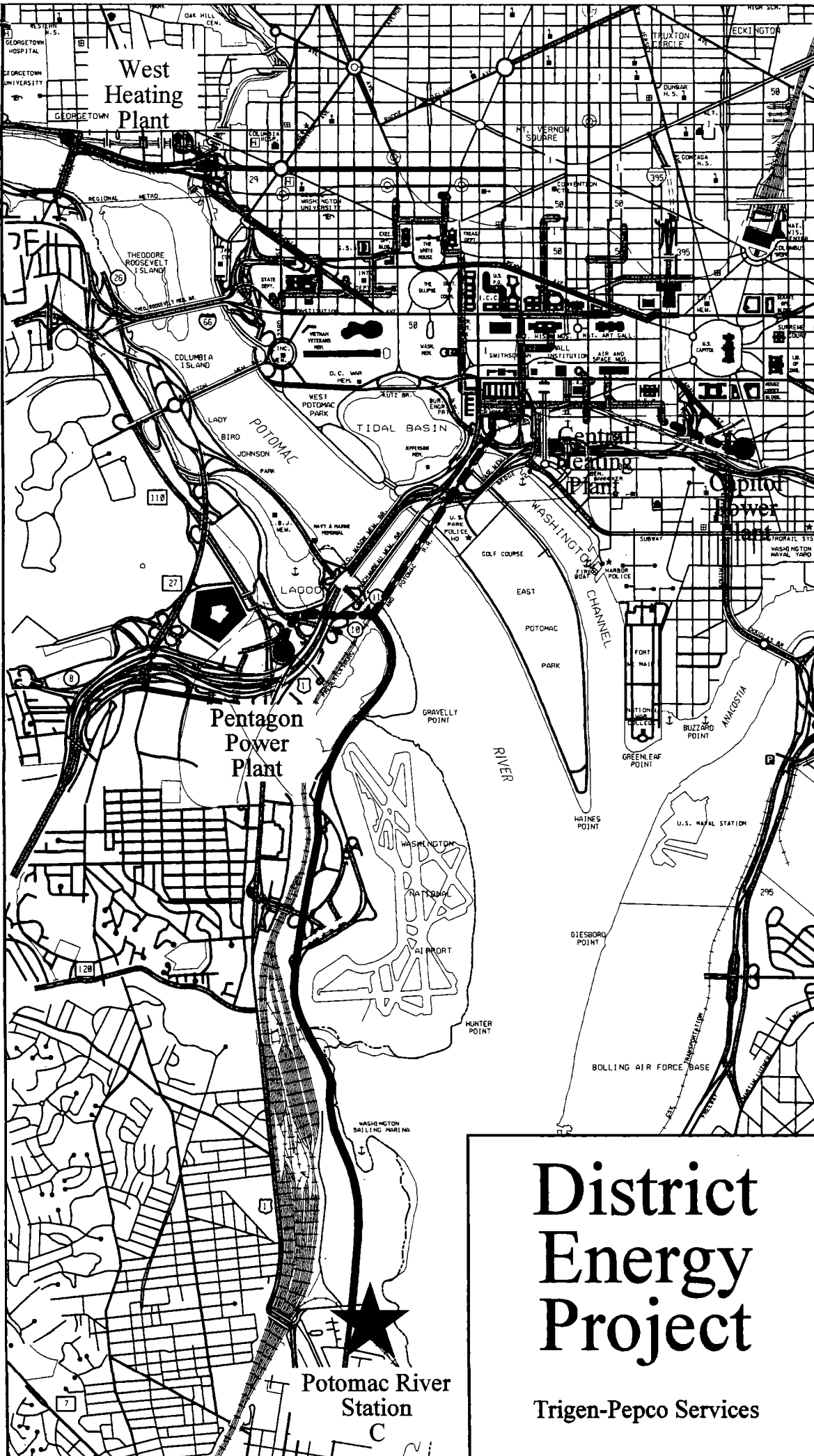
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District Energy Project

Trigen-Pepco Services

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