Washington Headquarters Services
Military Construction, Defense-Wide
FY 2010 Budget Estimates
($ in thousands)

State/Installation/Project	Authorization Request	Approp. Request	New/ Current Mission	Page No.
Virginia				
Pentagon Reservation				
Secondary Uninterruptible Power				
At Raven Rock	8,400	8,400	C	271
Pentagon Electrical Upgrade	19,272	19,272	C	274
Total	**27,672**	**27,672**		

1. COMPONENT	FY 2010 MILITARY CONSTRUCTION PROJECT DATA	2. DATE	REPORT CONTROL SYMBOL
Washington Headquarters Services		May 2009	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
Raven Rock Mountain Complex (RRMC)	Secondary Uninterruptible Power Source

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST *($000)*
	811		8,400

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST ($000)	COST ($000)
PRIMARY FACILITY				**6,942**
UNINTERRUPTABLE POWER SUPPLY COMPONENTS	LS			(6,480)
MECHANICAL COOLING COMPONENTS	LS			(308)
MISCELLANEOUS FINISHES	LS			(21)
MISCELLANEOUS MATERIALS AND HANDLING	LS			(133)
SUPPORTING FACILITIES				**13**
BUILDING FOUNDATION SYSTEM	LS			(0)
SITE UTILITIES (ELECTRIC, WATER, SEWER, GAS & STEAM)	LS			(0)
CIVIL CONDITIONS (SOIL TREATMENT/REMEDIATION)	LS			(0)
PAVING, WALKS, CURBS & GUTTERS	LS			(0)
SITE IMPROVEMENTS / DEMOLITION (D)	LS			(13)
ESTIMATED CONTRACT COST				**6,955**
SUBTOTAL 1				**6,955**
DESIGN				918
SUBTOTAL 2				**7,873**
SUPERVISION, INSPECTION & OVERHEAD (6.5%)				512
SUBTOTAL 3				8,385
TOTAL REQUEST				8,385
TOTAL REQUEST (ROUNDED)				**8,400**

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Provide a Secondary Uninterruptible Power Source (UPS) facility for Raven Rock Mountain Complex. The project will allow the facility to support Continuity of Operations Planning (COOP) for the Office of the Secretary of Defense (OSD) and the Joint Staff (JS), and provide for the 2N redundancy requirement based on current and future anticipated facility mission loads. This work will provide additional UPS for critical mission functions.

Current UPS capacity is inadequate to meet mission requirements; this project will furnish and install new UPS and associated equipment and infrastructure to meet mission redundancy requirements. Actual capacity is classified.

The project will include: Selective demolition; removal of hazardous materials; new, additional UPS in the same configuration as the existing UPS system; dedicated double-ended secondary unit substation to serve the new UPS equipment; dedicated medium voltage feeders from the East and West Power Plants; distribution; dedicated air-handling units to cool the UPS equipment room (chilled water primary cooling and direct-expansion backup cooling) – N + 1 units; condensing units; lighting; and miscellaneous power and controls requirements to support the system.

1. COMPONENT	FY 2010 MILITARY CONSTRUCTION PROJECT DATA *(Continuation)*	2. DATE	REPORT CONTROL SYMBOL
Washington Headquarters Services		May 2009	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
Raven Rock Mountain Complex (RRMC)	Secondary Uninterruptible Power Source

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST *($000)*
	811		8,400

11. REQUIREMENT: **ADEQUATE:** **SUBSTANDARD: X**

PROJECT: Construction a new Secondary UPS and associated infrastructure, lighting, power, controls, etc.

REQUIREMENT: This work is required to meet 2N redundancy requirements in support of the RRMC mission (classified).

CURRENT SITUATION: The existing UPS System does not have the required capacity to support the mission based on the projected future facility loads. RRMC must limit the connection of new computer servers to the existing UPS. Identified capacity is classified.

IMPACT IF NOT PROVIDED: The facility's emergency power systems will not be able to support the RRMC in the event of an electric power loss.

ADDITIONAL: All applicable codes will integrated into this project.

12. SUPPLEMENTAL DATA:

a. ESTIMATED DESIGN DATA:

(1) STATUS:

(a) DATE DESIGN STARTED	NOV 2009
(b) PERCENT COMPLETE AS OF JANUARY 2010	15%
(c) DATE DESIGN EXPECTED TO BE 35% COMPLETE	FEB 2010
(d) DATE DESIGN EXPECTED TO BE 100% COMPLETE	APR 2010
(e) PARAMETRIC COSTS TO DEVELOP COSTS	MODIFIED DESIGN/BUILD
(f) TYPE OF DESIGN CONTRACT	

(g) AN ENERGY STUDY AND LIFE CYCLE COST ANALYSIS WILL BE DOCUMENTED DURING FINAL DESIGN.

(2) BASIS:

(a) STANDARD OR DEFINITIVE DESIGN	**NOT APPLICABLE**
(b) WHERE DESIGN WAS MOST RECENTLY USED	**NOT APPLICABLE**

(3) TOTAL DESIGN COST (c)=(a)+(b)+(e)

(a) PRODUCTION OF PLANS AND SPECIFICATIONS	3.5%	546 K
(b) ALL OTHER DESIGN COSTS	3.0%	294 K
(c) TOTAL		252 K
(d) CONTRACT		0 K
(e) IN-HOUSE		0 K

COST OF REPRODUCTION OF PLANS AND SPECIFICATIONS 1.1 M

(4) CONSTRUCTION AWARD DATE NA

(5) CONSTRUCTION START APR 10

(6) CONSTRUCTION COMPLETION DATE MAR 11

b. EQUIPMENT ASSOCIATED WITH THIS PROJECT WHICH WILL BE PROCURED FROM OTHER APPROPRIATIONS:

none

13. SIGNATURES:

_____ **Date** _____	_____ **Date** _____
DEBORAH A. MEREDITH Acting Director, Engineering	HUGH T. SMITH Colonel, USA Commanding

1. COMPONENT	FY 2010 MILITARY CONSTRUCTION PROGRAM	2. DATE
DoD		May 2009

3. INSTALLATION AND LOCATION	4. COMMAND	5. AREA CONSTRUCTION COST INDEX
Raven Rock Mountain Complex	Washington Headquarters Services	1.02

6. PERSONNEL	(1) PERMANENT			(2) STUDENTS			(3) SUPPORTED			(4) TOTAL
	OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	
a. AS OF										
b. END FY										

7. INVENTORY DATA *($000)*

a. TOTAL ACREAGE	N/A
b. INVENTORY TOTAL AS OF	N/A
c. AUTHORIZATION NOT YET IN INVENTORY	N/A
d. AUTHORIZATION REQUESTED IN THIS PROGRAM	8.4
e. AUTHORIZATION INCLUDED IN FOLLOWING PROGRAM	N/A
f. PLANNED IN NEXT THREE PROGRAM YEARS	N/A
g. REMAINING DEFICIENCY	N/A
h. GRAND TOTAL	8.4

8. PROJECTS REQUESTED IN THIS PROGRAM

a. CATGEGORY			b. COST *($000)*		
(1) CODE	(2) PROJECT TITLE	(3) SCOPE		DESIGN START	STATUS COMPLETE
811	Secondary UPS	1 EA	8.4	11/2009	04/2010

9. FUTURE PROJECTS

Power Plant Modernization, Phase III
Power Plant Modernization, Phase IV

10. MISSION OR MAJOR FUNCTIONS

Provide a Secondary Uninterruptible Power Source (UPS) facility for Raven Rock Mountain Complex. The project will allow the facility to support Continuity of Operations Planning (COOP) for the Office of the Secretary of Defense (OSD) and the Joint Staff (JS), and provide for the 2N redundancy requirement based on current and future anticipated facility mission loads. This work will provide additional UPS for critical mission functions

11. OUTSTANDING POLLUTION AND SAFETY DEFICIENCIES

		($000)
A.	Air Pollution	0
B.	Water Pollution	0
C.	Occupational Safety and Health	0

1. COMPONENT	FY 2010 MILITARY CONSTRUCTION PROJECT DATA	2. DATE	REPORT CONTROL SYMBOL
Washington Headquarters Services		May 2009	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
Pentagon Reservation, Virginia	Upgrade Electrical System

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST *($000)*
	811		19,272

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST ($000)	COST ($000)
PRIMARY FACILITY via Dominion Virginia Power Utility Contract				**12,441**
69kV Substation Building and transmission feeder (High Side)	LS			(11,849)
CONTINGENCY (5%)				(592)
PRIMARY FACILITY via Design-Build Contract				**3,994**
15kV Switchgear Building and distribution feeder to loads (Low Side)	LS			(3,804)
CONTINGENCY (5%)				(190)
SUBTOTAL (HIGH SIDE AND LOW SIDE)				**16,435**
DESIGN/BUILD FEE				1,644
SUBTOTAL				**18,079**
SUPERVISION, INSPECTION & OVERHEAD (6.6%)				1,193
TOTAL REQUEST (ROUNDED)				**19,272**

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Primary facility is a new electrical substation housed in a partially underground reinforced concrete enclosure, a 69kVA utility supply feeder, 13kV switchgear, and electrical service to the Pentagon. Supporting work includes demolition of an existing retaining wall and paved surface; remediation of excavated soil; site utilities; replacement of existing paving, walks, curbs, and gutters disturbed by construction; and site improvements above and adjacent to the enclosure structure (required to blend with existing infrastructure). Anti-terrorism/force protection measures shall be incorporated in accordance with criteria prescribed in the current UFC regulations. Facility shall be designed in accordance with the National Electrical Code, National Fire Protection Association Life Safety Code, Standards of Seismic Safety for Federally Owned Buildings, Unified Facilities Criteria, and the Uniform Federal Accessibility Standards (for site improvements).

High Side will be contracted through Dominion Virginia Power (DVP- local electric utility) to design and install the 69kV transmission line, 69kV switchgear, the 69-13.8kV transformer, 13.8kV underground ducts to the 13.8kV switchgear and high voltage substation.

Low Side will be constructed by a separate Design-Build Contractor who will design and install the 13.8kV switchgear, downstream distribution and underground medium voltage substation including power to the H&RP to be provided via spare empty conduits in the existing 3/17 duct bank.

1. COMPONENT	FY 2010 MILITARY CONSTRUCTION PROJECT DATA *(Continuation)*	2. DATE	REPORT CONTROL SYMBOL
Washington Headquarters Services		May 2009	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
Pentagon Reservation, Virginia	Upgrade Electrical System

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST *($000)*
	811		19,272

11. REQUIREMENT: 1 Substation Each **ADEQUATE:** N/A **SUBSTANDARD:** N/A

PROJECT: This project will provide enhanced reliability to the electrical system supplying the Pentagon Reservation.

REQUIREMENT: The details of this project are divided into two parts: The high voltage substation portion of the project is unclassified and the medium voltage distribution is classified SECRET. In classified references “Electrical Upgrade" dated March 31, 2005 and related "Balanced Survivability Assessment", copies of which can be provided upon request, detailed requirements are provided. These studies examined all aspects of the Pentagon reservation's electrical systems and recommended a strategic plan to enhance them.

CURRENT SITUATION: The existing electrical system does not provide the level of reliability recommended in the above studies.

IMPACT IF NOT PROVIDED: To understand the impact of not providing this facility, the reviewer should refer to the classified studies. Without constructing this facility, the Pentagon Reservation will be unable to achieve the level of reliability recommended in the studies.

ADDITIONAL INFORMATION: All cost items on Page 1 (to include escalation, design/build fee, SIOH, and contingency) other than "supporting facilities" are extracted from the study's parametric cost estimate. The TERF line item refers to "Tax Effect Recovery Factor" and is intended to reimburse a utility for taxes incurred on income generated by their portion of construction. This is a mandatory cost, since a utility firm must complete a portion of this project. TERF is further explained in the study and is regulated by the Federal Energy Regulatory Commission (FERC).

12. SUPPLEMENTAL DATA:

b. ESTIMATED DESIGN DATA:

(1) STATUS:

(a) DATE DESIGN STARTED	Jan 2010
(b) PERCENT COMPLETE AS OF JANUARY 2010	0%
(c) DATE DESIGN EXPECTED TO BE 35% COMPLETE	April 2010
(d) DATE DESIGN EXPECTED TO BE 100% COMPLETE	June 2010
(e) PARAMETRIC COSTS TO DEVELOP COSTS (ESTIMATE INCLUDED IN CLASSIFIED STUDY)	YES
(f) TYPE OF DESIGN CONTRACT	DESIGN/BUILD

(g) AN ENERGY STUDY AND LIFE CYCLE COST ANALYSIS WILL BE DOCUMENTED DURING FINAL DESIGN.

(2) BASIS:

(a) STANDARD OR DEFINITIVE DESIGN	**NOT APPLICABLE**
(b) WHERE DESIGN WAS MOST RECENTLY USED	**NOT APPLICABLE**

(3) TOTAL DESIGN COST (c)=(a)+(b)+(e)

(a) PRODUCTION OF PLANS AND SPECIFICATIONS 6%	0.986 M
(b) ALL OTHER DESIGN COSTS 4%	0.658 M
(c) TOTAL	1.644M
(d) CONTRACT	DESIGN/BUILD
(e) IN-HOUSE	NO
COST OF REPRODUCTION OF PLANS AND SPECIFICATIONS	0.050 M

(4) CONSTRUCTION AWARD DATE NA

(5) CONSTRUCTION START (Design/Build starting 35%) April 2010

(6) CONSTRUCTION COMPLETION DATE December 2011

b. EQUIPMENT ASSOCIATED WITH THIS PROJECT WHICH WILL BE PROCURED FROM OTHER APPROPRIATIONS:

none

13. SIGNATURES:

_____ **Date** _____	_____ **Date** _____
Bob Cox Director of Engineering	Wade Shankle, PE Engineering Manager

1. COMPONENT	FY 2010 MILITARY CONSTRUCTION PROGRAM	2. DATE
Washington Headquarters Services		May 2009

3. INSTALLATION AND LOCATION	4. COMMAND	5. AREA CONSTRUCTION COST INDEX
Pentagon Reservation, Arlington, Virginia 20301-1155	OSD/DAM	1.042 (Pentagon Renovation CI)

6. PERSONNEL	(1) PERMANENT			(2) STUDENTS			(3) SUPPORTED			(4) TOTAL
	OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	
a. AS OF										
b. END FY										

7. INVENTORY DATA *($000)*

a. TOTAL ACREAGE	N/A
b. INVENTORY TOTAL AS OF	N/A
c. AUTHORIZATION NOT YET IN INVENTORY	N/A
d. AUTHORIZATION REQUESTED IN THIS PROGRAM	19,272
e. AUTHORIZATION INCLUDED IN FOLLOWING PROGRAM	N/A
f. PLANNED IN NEXT THREE PROGRAM YEARS	N/A
g. REMAINING DEFICIENCY	N/A
h. GRAND TOTAL	19,272

8. PROJECTS REQUESTED IN THIS PROGRAM

a. CATGEGORY			b. COST *($000)*		
(1) CODE	(2) PROJECT TITLE	(3) SCOPE		DESIGN START	STATUS COMPLETE
811	Upgrade Electrical System		19,272	01/10	12/11
					Anticipates 2.0 Years for Construction

9. FUTURE PROJECTS

N/A

10. MISSION OR MAJOR FUNCTIONS

Project Description: This project enhances reliability for the electrical system supplying the Pentagon Reservation. The existing electrical system does not provide an adequate level of reliability. The studies Electrical Upgrade and Balanced Survivability Assessment examined all aspects of the Pentagon reservation's electrical systems, recommended a strategic plan to enhance them, and contain detailed requirements to accomplish upgrades. The details of this project are divided into two parts: The high voltage substation portion of the project is unclassified and the medium voltage distribution is classified SECRET.

The primary facility is a new electrical substation housed in a partially underground reinforced concrete enclosure, a 69kVA utility supply feeder, 13kV switchgear, and electrical service to the Pentagon. Supporting work includes demolition of an existing retaining wall and paved surface; remediation of excavated soil; site utilities; replacement of existing paving, walks, curbs, and gutters disturbed by construction; and site improvements above and adjacent to the enclosure structure (required to blend with existing infrastructure). Anti-terrorism/force protection measures shall be incorporated in accordance with criteria prescribed in the current UFC regulations. Facility shall be designed in accordance with the National Electrical Code, National Fire Protection Association Life Safety Code, Standards of Seismic Safety for Federally Owned Buildings, and the Uniform Federal Accessibility Standards (for site improvements).

11. OUTSTANDING POLLUTION AND SAFETY DEFICIENCIES

		($000)
A.	Air Pollution	0
B.	Water Pollution	0
C.	Occupational Safety and Health	0