

**FY 2023 Energy Resilience and Conservation Investment Program (ERCIP)**

**Project List by State/Country**

<u>State / Country</u>	<u>Component</u>	<u>Project Title</u>	<u>Project Type</u>	<u>Authorization (\$000)</u>	<u>Page</u>
<b><u>Alabama</u></b>					
Missile and Space Intelligence Center, Redstone Arsenal	DIA	Backup Power Generation	ER	\$10,700	114
<b>AL Totals</b>		<b>1 Project</b>		<b>\$10,700</b>	
<b><u>California</u></b>					
NAVBASE Ventura County, Pt. Mugu	Navy	Ground Mounted Solar Photovoltaic System	ER	\$13,360	116
Marine Corps Mountain Warfare Training Center Bridgeport	Marine Corps	Microgrid and Backup Power	ER	\$25,560	119
<b>CA Totals</b>		<b>2 Projects</b>		<b>\$38,920</b>	
<b><u>Florida</u></b>					
Naval Air Station Jacksonville	Navy	Facility Energy Operations Center Renovation	ER	\$2,400	122
Patrick Space Force Base	Space Force	Underground Electric Distribution System	ER	\$8,400	124
Patrick Space Force Base	Space Force	Water Distribution Loop	WR	\$7,300	126
<b>FL Totals</b>		<b>3 Projects</b>		<b>\$18,100</b>	
<b><u>Georgia</u></b>					
Fort Stewart-Hunter Army Airfield	Army	Power Generation and Microgrid	ER	\$25,400	128
Naval Submarine Base Kings Bay	Navy	SCADA Modernization	ER	\$11,200	131
<b>GA Totals</b>		<b>2 Projects</b>		<b>\$36,600</b>	
<b><u>Hawaii</u></b>					
Joint Base Pearl Harbor-Hickam	Navy	Primary Electrical Distribution	ER	\$25,000	133
<b>HI Totals</b>		<b>1 Project</b>		<b>\$25,000</b>	
<b><u>Kansas</u></b>					
Fort Riley	Army	Power Generation and Microgrid	ER	\$25,780	135
<b>KS Totals</b>		<b>1 Project</b>		<b>\$25,780</b>	
<b><u>Maryland</u></b>					
Fort George G. Meade	NSA	Reclaimed Water Infrastructure Expansion	WR	\$23,310	138
<b>MD Totals</b>		<b>1 Project</b>		<b>\$23,310</b>	

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<b><u>Texas</u></b>					
Fort Hood	Army	Power Generation and Microgrid	ER	\$31,500	140
U.S. Army Reserve Center, Conroe	Army	Power Generation and Microgrid	ER	\$9,600	143
<b>TX Totals</b>		<b>2 Project</b>		<b>\$41,100</b>	
<b><u>Virginia</u></b>					
NAVSUPPORT Hampton Roads	Navy	Primary Distribution Substation	ER	\$19,000	145
NAVSUPPORT Hampton Roads	Navy	Backup Power Generation	ER	\$3,400	147
NCE Springfield, Ft Belvoir	NGA	Chilled Water Redundancy	WR	\$1,100	149
<b>VA Totals</b>		<b>3 Projects</b>		<b>\$23,500</b>	
<b>Overseas Projects</b>					
<b><u>Djibouti</u></b>					
Camp Lemonnier	Navy	Enhanced Energy Security and Control Systems	EC	\$24,000	151
<b>Djibouti Totals</b>		<b>1 Project</b>		<b>\$24,000</b>	
<b><u>Guam</u></b>					
NAVBASE Guam - Joint Region Marianas	Navy	Electrical Distribution System	ER	\$34,360	154
<b>Guam Totals</b>		<b>1 Project</b>		<b>\$34,360</b>	
<b><u>Japan</u></b>					
Kadena Air Base	DoDEA	Lighting Upgrades	EC	\$780	156
<b>Japan Totals</b>		<b>1 Project</b>		<b>\$780</b>	
<b><u>Kuwait</u></b>					
Camp Arifjan	Army	Power Generation and Microgrid	ER	\$26,850	158
<b>Kuwait Totals</b>		<b>1 Project</b>		<b>\$26,850</b>	
<b>CONUS ERCIP Construction Project Totals (16)</b>				<b>\$243,010</b>	
<b>OCONUS ERCIP Construction Project Totals (4)</b>				<b>\$85,990</b>	
<b>ERCIP Construction Project Totals (20 Projects)</b>				<b>\$329,000</b>	
<b>ERCIP P&amp;D Funds Total</b>				<b>\$224,250</b>	
<b>ERCIP Program Total</b>				<b>\$553,250</b>	

1 ER and WR is for Energy/Water Resilience projects; EC and WC is for Energy/Water Conservation projects

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**Project List by Component**

<b><u>Component</u></b>	<b><u>Location</u></b>	<b><u>State/ Country</u></b>	<b><u>Project Title</u></b>	<b><u>Project Type</u></b>	<b><u>Project Cost (\$000)</u></b>
<b><u>Army</u></b>					
98162	Fort Stewart	GA	Power Generation and Microgrid	ER	\$25,400
98161	Fort Riley	KS	Power Generation and Microgrid	ER	\$25,780
99143	Fort Hood	TX	Power Generation and Microgrid	ER	\$31,500
94849	Camp Arifjan	Kuwait	Power Generation and Microgrid	ER	\$26,850
<b>Army Program Totals</b>			<b>4 Projects</b>		<b>\$109,530</b>
<b><u>Army Reserve</u></b>					
93347	U.S. Army Reserve Center, Conroe	TX	Power Generation and Microgrid	ER	\$9,600
<b>Army Reserve Program Totals</b>			<b>1 Project</b>		<b>\$9,600</b>
<b><u>Navy</u></b>					
P-615	NAVBASE Ventura County, Pt. Mugu	CA	Ground Mounted Solar Photovoltaic System	ER	\$13,360
RM20-0515	Naval Air Station Jacksonville	FL	Facility Energy Operations Center Renovation	ER	\$2,400
P-694	Naval Submarine Base Kings Bay	GA	SCADA Modernization	ER	\$11,200
P-8005	Joint Base Pearl Harbor- Hickam	HI	Primary Electrical Distribution	ER	\$25,000
P1335	NAVSUPPORT Hampton Roads	VA	Primary Distribution Substation	ER	\$19,000
P1401	NAVSUPPORT Hampton Roads	VA	Backup Power Generation	ER	\$3,400
P-950	Camp Lemonnier	Djibouti	Enhanced Energy Security and Control Systems	EC	\$24,000
P-806	NAVBASE Guam - Joint Region Marianas	Guam	Electrical Distribution System	ER	\$34,360
<b>Navy Program Totals</b>			<b>8 Projects</b>		<b>\$132,720</b>
<b><u>Space Force</u></b>					
DBEH071588	Patrick Space Force Base	FL	Underground Electric Distribution System	ER	\$8,400
DBEH161571	Patrick Space Force Base	FL	Water Distribution Loop	WR	\$7,300
<b>Space Force Program Totals</b>			<b>2 Projects</b>		<b>\$15,700</b>

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<u>Component</u>	<u>Location</u>	<u>State/ Country</u>	<u>Project Title</u>	<u>Project Type</u>	<u>Project Cost (\$000)</u>
<b><u>USMC</u></b>					
P-481	Marine Corps Mountain Warfare Training Center Bridgeport	CA	Microgrid and Backup Power	ER	\$25,560
<b>USMC Program Totals</b>			<b>1 Project</b>		<b>\$25,560</b>
<b><u>DIA</u></b>					
DIA2023-001	Redstone Arsenal	AL	Backup Power Generation	ER	\$10,700
<b>DIA Program Totals</b>			<b>1 Project</b>		<b>\$10,700</b>
<b><u>NGA</u></b>					
40	NCE Springfield, Ft Belvoir	VA	Chilled Water Redundancy	WR	\$1,100
<b>NGA Program Totals</b>			<b>1 Project</b>		<b>\$1,100</b>
<b><u>NSA</u></b>					
40409	Fort George G. Meade	MD	Reclaimed Water Infrastructure Expansion	WR	\$23,310
<b>NSA Program Totals</b>			<b>1 Project</b>		<b>\$23,310</b>
<b><u>DoDEA</u></b>					
PACE21013	Kadena Air Base, Kadena High School	Japan	Lighting Upgrades	EC	\$780
<b>DoDEA Program Totals</b>			<b>1 Project</b>		<b>\$780</b>
<b>ERCIP Construction Project Totals</b>			<b>20 Projects</b>		<b>\$323,000</b>
<b>Energy/Water Resilience Projects (18)</b>					<b>\$304,220</b>
<b>Energy/Water Conservation Projects (2)</b>					<b>\$24,780</b>
<b>ERCIP Construction Projects Total (20)</b>					<b>\$329,000</b>
<b>ERCIP P&amp;D Funds Total</b>					<b>\$224,250</b>
<b>ERCIP Program Total</b>					<b>\$553,250</b>

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1. COMPONENT Defense Wide – DIA	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Missile and Space Intelligence Center, Redstone Arsenal Huntsville, Alabama			4. PROJECT TITLE:  Backup Power Generation	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81117	7. PROJECT NUMBER  DIA2023-1	8. PROJECT COST (\$000)  10,700	
<p>prioritized MSIC facilities. The emergency power system load capability was sufficient to power MSIC's critical systems in 1998 but is severely inadequate to support current critical systems. The current capability can only supply power for very minimal mission accomplishment and will likely endanger MSICs ability to support some new mission requirements.</p> <p>As noted above, there is limited uninterruptable emergency power provided by a reduced capacity 1 MW natural gas generator. The emergency power system only serves a very limited portion of Bldg. 4545 and the Central Plant Bldg 4543. The emergency power system is connected to a Pure Wave UPS unit (installed in 2004) which eliminates voltage disturbances and provides seamless transfer between the utility and the emergency generator. MSIC is supplied from redundant 12.470 KV feeds from two unit substations that are fed from Primary Substation 3; creating a single point of failure.</p> <p>Redundancy of service, transmission and generation to MSIC as specified above decreases the possibility of significant mission downtime and equipment damage due to loss or power, but does not prevent outages. To combat the frequent power outages, the emergency power system is automatically energized with power outage and is constantly monitored via contract with the UPS manufacturer. Any potential system conditions that might affect the availability of the system to protect critical loads are reported immediately. The contractor also provides annual preventative maintenance services and recommends any corrective or improvement measures necessary for reliable operation.</p> <p><u>IMPACT IF NOT PROVIDED:</u></p> <p>Short duration outages will continue to be frequent, along with intermittent extended outages. These outages will have a significant impact on mission critical systems and functions. These facilities contain numerous laboratories and scientific computing systems that could be damaged or degraded during power outages. Power failure to these facilities during operations risk damage to high value equipment and components, corruption of data results essential to DIA/MSIC's mission and potential delays in MSIC's ability to respond to high priority intelligence requirements.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: ENERGY RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914: The MSIC Shelby complex has a critical mission peak demand of 2.31 MW (2019 data) and only a single 1,000 kW emergency backup generator on site. The MSIC complex has experienced an average of 29 outages annually, for the last 5 years. A major outage in 2011 lasted more than a week and caused critical service disruptions across the IC. Mission availability for this facility is 99.999%; there is no tolerance for downtime. Utility reliability is notoriously low as evidenced by the frequent power outages annually. The project includes providing procurement, installation, testing, and commissioning of all electrical, control and civil work required to provide an additional 3.5MW of natural gas generation capacity, 3.75MW of UPS backup power and the ability to independently accomplish load bank testing on the seven generators and UPS without power interruption.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION NAVBASE Ventura County, Pt. Mugu, San Nicolas Island, California			4. PROJECT TITLE: Ground Mounted Solar Photovoltaic System	
5. PROGRAM ELEMENT 0904903D	6. CATEGORY CODE 81150	7. PROJECT NUMBER P615	8. PROJECT COST (\$000) 13,360	
9. COST ESTIMATES				
Item	U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>				
Ground Mounted Solar Photovoltaic System (CC81150)	KW	1,300	2,930	<b>6,590</b> (3,810)
Special Costs	LS	--	--	(2,780)
<b><u>SUPPORTING FACILITIES</u></b>				
Special Construction Features	LS	--	--	(70)
Environmental Mitigation	LS	--	--	(1,510)
Pavement Facilities	LS	--	--	(400)
Site Preparations	LS	--	--	(380)
Special Foundation Features	LS	--	--	(930)
Electrical Utilities	LS	--	--	(1,180)
Communications & Security	LS	--	--	(10)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE				0
SUBTOTAL				<b>11,070</b>
CONTINGENCY (10%)				1,110
TOTAL CONTRACT COST				<b>12,180</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)				694
DESIGN/BUILD – DESIGN COST (4%)				487
TOTAL REQUEST				<b>13,361</b>
<b>TOTAL REQUEST (ROUNDED)</b>				<b>13,360</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)				0
10. DESCRIPTION OF PROPOSED CONSTRUCTION: Project constructs a fix-tilt, ground mounted system Solar Photovoltaic System (SPVS) at San Nicolas Island (SNI), Naval Base Ventura County (NBVC) that will interface with the installation power grid. The SPVS minimum expected generation is 1,300 Kilowatts (kW) Direct Current (DC) rating at PTC (PVUSA Test Conditions) to ensure a durable, efficient and reliable system with a useful life of 25 to 40 years. The SPVS will be located within the vicinity of SNI Powerhouse, Building 114, on approximately six to nine acres of undeveloped land. The SPVS design will fully integrate operation with existing on-site generation diesel, battery energy storage system, and wind turbine generators to efficiently reduce fossil fuel generation and increase renewable energy generation, improve SNI energy security and resiliency and improve overall island power management.  Special costs include barging and flights to and from SNI and labor per diem must be included as part of the project construction. Special construction features include ten-foot-long bird spikes. The bird spike strips will be mounted atop the solar panels to keep birds off and prevent bird waste accumulation on the face of the solar modules. Heavily soiled solar modules will cause power output reduction. Special foundation features include photovoltaic array structure, reinforced concrete foundations and anchoring criteria. Electrical utilities include utility trenches, DC and alternating current (AC) cabling, underground ducts and manholes, conduit, step-up transformers with primary and secondary over-current protection and lighting. Communications and security include fiber optic cabling.				

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  NAVBASE Ventura County, Pt. Mugu, San Nicolas Island, California			4. PROJECT TITLE:  Ground Mounted Solar Photovoltaic System	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81150	7. PROJECT NUMBER  P615	8. PROJECT COST (\$000)  13,360	
11. REQUIREMENT: N/A                                  ADQT: N/A                                  SUBSTD: N/A				
<p><u>PROJECT:</u> Project installs a photovoltaic system to provide an alternate source of electrical energy on SNI.</p> <p><u>REQUIREMENT:</u> The SPVS provides a renewable and reliable energy source that will supplement the battery storage system and wind turbine generators. The SPVS will be able to charge the battery storage and, at the same time, provide power when there is no wind. The SPVS could function as a stand-by/back-up power source for SNI when there is little to no wind, increasing the reliability of electrical power for critical facilities on the island. This project promises to provide additional flexibility, responsiveness, and capability to the islands micro-grid system.</p> <p>This project will provide a second source of renewable energy for SNI that will offset and reduce the amount of fossil fuel consumed in the SNI power plant and work in conjunction with the P613 energy storage system to provide a third independent energy source to provide electric power to critical mission loads on the island.</p> <p>Concurrent with the federal energy reduction and renewable energy goals, this project provides for the replacement of traditional, fossil-fueled energy sources with renewable energy while also reducing future facility operating costs. This reduction in Operations and Maintenance cost allows more of the limited DON financial resources to be applied to core mission requirements.</p> <p><u>CURRENT SITUATION:</u> SNI is a remote, operating Special Area of NBVC off the coast of Southern California that includes an Outlying Landing Field and RDT&amp;E facilities for Naval Air weapons systems. It is a completely self-contained operating system in regards to the supporting utility infrastructure. The island installation typically supports a continuous population of approximately 150-250 personnel on the island during high Military Readiness, Operations Tempo periods.</p> <p>Currently, a diesel power plant is the primary generation source of electricity, which requires the barging of diesel fuel to the island at significant cost and effort. There is also a limited capacity to store reserve supplies of fuel on the island. To utilize renewable energy and reduce the consumption of diesel fuel on the island, renewable generating capabilities include a 700 kW wind turbine generator farm and a planned energy storage system.</p> <p><u>IMPACT IF NOT PROVIDED:</u> Not having the SPVS will result in loss of renewable energy that could be captured and used to offset the quantity of diesel fuel that needs to be shipped to and burned on the island. Higher levels of emissions from the diesel power plant will continue rather than be reduced through a combination of capturing and utilizing more renewable energy and improved operational efficiency of the power plant. Additional redundancy for the diesel power plant will not be gained. Important operational experience and data pertinent to the operation of stand-alone micro-grid systems for the Navy and DOD could not be captured if this project is not completed.</p>				



1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  NAVBASE Ventura County, Pt. Mugu, San Nicolas Island, California			4. PROJECT TITLE:  Ground Mounted Solar Photovoltaic System	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81150	7. PROJECT NUMBER  P615	8. PROJECT COST (\$000)  13,360	
12. SUPPLEMENTAL DATA:  a. Other Appropriations or Funding Sources (\$000):  b. Project Type: ENERGY RESILIENCE  c. Rationale IAW 10 USC 2914: This project proposes to install an additional renewable energy source for the SNI electrical grid. This SPVS will augment the existing diesel generators and wind turbine generators along with the FY20 authorized P613 energy storage system (ESS). The addition of the SPVS is expected to significantly increase the ability for SNI to operate without diesel fueled generation for extended periods of time, reducing the amount of fossil fuel needed to operate the island and extend the usable duration of the limited fuel supply stored on the island. This project will improve the overall energy resilience of SNI.  <hr/> Office of the Deputy Assistant Secretary of Defense (Environment & Energy Resilience) 703-843-0159				0

1. COMPONENT Defense Wide - USMC	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION Marine Corps Mountain Warfare Training Center Bridgeport, California			4. PROJECT TITLE: Microgrid and Backup Power	
5. PROGRAM ELEMENT 0904903D	6. CATEGORY CODE 81150	7. PROJECT NUMBER P-481	8. PROJECT COST (\$000) 25,560	
<b>9. COST ESTIMATES</b>				
Item	U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>				
Primary Power Generation, PV (CC81150)	MW	2	2,150,000	<b>21,180</b> (4,300)
Backup Power Generation, Coleville (CC81110)	KW	750	2,400	(1,800)
Backup Power Generation, Bridgeport (CC81110)	KW	550	1,815	(1,000)
Battery Energy Storage System (BESS) and Inverter	LS	--	--	(2,630)
Microgrid Controls	LS	--	--	(1,950)
Building Energy Management Information Systems / Control Room	LS	--	--	(5,580)
Engineering Studies	LS	--	--	(240)
Training, Simulation, and Documentation	LS	--	--	(980)
Cybersecurity	LS	--	--	(2,700)
<b><u>SUPPORTING FACILITIES</u></b>				
				<b>0</b>
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE				0
SUBTOTAL				<b>21,180</b>
CONTINGENCY (10%)				2,118
TOTAL CONTRACT COST				<b>23,298</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)				1,328
DESIGN/BUILD – DESIGN COST (4%)				932
TOTAL REQUEST				<b>25,558</b>
<b>TOTAL REQUEST (ROUNDED)</b>				<b>25,560</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)				7,229
<b>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</b>				
<p>This project will install a 2 MW ground-and roof-mount solar photovoltaic (PV) system, a 3 MWh battery energy storage system (BESS), energy expansion only, and a generator on the main Bridgeport base. It will provide electrical infrastructure for the microgrid, microgrid controls that will automatically control generation and storage assets during normal and emergency operations, and an Energy Management Information System (EMIS). The project will also build a central control room; install a generator, a generator building, and a generator circuit at the Coleville housing area; and conduct engineering studies to support the microgrid. In addition, this project will provide a robust operation, maintenance, and sustainment plan that includes training, simulations programs, and documentation. The facility related control systems (FRCs) will be cyber-secured.</p>				
<b>11. REQUIREMENT: N/A                      ADQT: N/A                      SUBSTD: N/A</b>				
<b><u>PROJECT:</u></b> Provide generation, storage, electrical upgrades, controls, communication, system training and documentation, studies, and cybersecurity to address the MWTC's resilience requirements.				
<b><u>REQUIREMENT:</u></b> The Marine Corps Mountain Warfare Training Center Bridgeport (MWTC) is a mountain warfare training center whose mission is to conduct Marine Air Ground Task Force exercises, develop warfighting doctrine, and support research,				

1. COMPONENT Defense Wide - USMC	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Marine Corps Mountain Warfare Training Center  Bridgeport, California			4. PROJECT TITLE:  Microgrid and Backup Power	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81150	7. PROJECT NUMBER  P-481	8. PROJECT COST (\$000)  25,560	
<p>development, testing, and evaluation (RDT&amp;E) of equipment for use in mountain warfare operations. Readiness is dependent on having a reliable and resilient energy infrastructure.</p> <p>The project will enhance energy security (e.g., reliability, resilience, and efficiency) in accordance with DoDI-4170.11 and MCICOM Energy Security Policy Letter 9-19. It will also ensure cybersecurity of the microgrid in accordance with the FRCS in accordance with the Department of Defense Risk Management Framework (RMF), DoDI 8500.01, DoDI 8510.01, UFCs, and other Marine Corps cybersecurity certification and accreditation requirements. The end state of this project is a reliable, resilient, efficient, and cybersecure microgrid that will operate critical installation services and mission essential functions off the grid for several weeks with N+1 redundancy.</p> <p><u>CURRENT SITUATION:</u></p> <p>The installation is the last customer on the Southern California Edison utility feed and the base is located in a remote area of the Sierra mountains in California. Every year, the base experiences power outages due to extreme snowfall, sub-zero temperatures, forest fires, heat waves, power quality issues, and other planned and unplanned utility grid events. The base regularly operates, from minutes up to weeks, off a single generator with aged infrastructure and inadequate controls. This is a significant vulnerability. There is no natural gas (the closest connection option is over 60 miles away), so the base trucks in propane for heating and domestic hot water, and diesel for backup generators. Bridgeport started addressing its energy vulnerabilities through the FY2019 ERCIP project P-480: Resilience Phases 1 and 2. That project focuses on enhancing the reliability and redundancy of the electrical distribution system.</p> <p>Currently, MWTC performs around six training cycles per year. With temperatures that drops below -20°F, all base activities are reliant upon consistent access to energy. Without energy planned training may be compromised due to facility infrastructure failure or possibly destruction at these extreme temperatures, base personnel will be unable to perform any work or meet minimum standards for first responders, and infrastructure aboard base is at risk.</p> <p>Annually, the base experiences multiple utility outages whose duration ranges from one minute to two months. Outages occur because of routine maintenance/repair work, equipment failures, natural disasters (primarily wild fires and earthquakes), public safety power shut downs, requests to participate in demand reduction response, and extreme weather events. During the winter season (October - April) snow accumulation can reach 6 to 8 feet. Annual temperatures range from -20 degrees to +90 degrees Fahrenheit. Additionally, wildfires have burned up to 30+ utility poles directly supporting the power transmission to the MCMWTC. These extreme weather conditions oftentimes result in utility disruptions.</p> <p>The MWTC was established in 1951. While some upgrades have been done, most existing building and utility infrastructure is 30 to 40 years old. While the FY19 ERCIP Project P-480: Resilience Phase 1 and 2 will provide upgrades to the existing electrical infrastructure, but the base still has significant energy gaps. The existing 1 MW generator is the primary backup power supply for the base. If it goes down, the base will utilize the distribution center disconnect switches installed in P-480 Phase 1 and 2 project to rotate trailer mounted generators throughout the base camp. This is an emergency solution not intended to be used for extended outages. The existing solar photovoltaic systems and the P-480 BESS do not provide enough power to meet installation loads throughout the day and generate enough energy to store for use during the evening during emergencies. The existing FRCSs are not cybersecure or centrally monitored or controlled and are largely passive in nature; therefore, the systems do not provide the required information to automatically operate, control, and optimize use of the microgrid. The Coleville Housing area, which is 24 miles from the main Bridgeport base and also fed by a single feed, does not have any backup power. When there is a loss of grid power or a voltage fluctuation event (common), the entire housing community and supporting facilities are impacted.</p>				

1. COMPONENT Defense Wide - USMC	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Marine Corps Mountain Warfare Training Center  Bridgeport, California			4. PROJECT TITLE:  Microgrid and Backup Power	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81150	7. PROJECT NUMBER  P-481	8. PROJECT COST (\$000)  25,560	
<p><b><u>IMPACT IF NOT PROVIDED:</u></b>          Bridgeport will continue to rely on a single fossil fuel generator to be the primary microgrid energy resource. The generator will have basic transfer capability, but will have no real “smart” or “advanced” microgrid capability to allow use of onsite solar PV or battery resources. Bridgeport will struggle to continuously sustain its mission because a reliable source of power is critical for winter training, doctrine development, and RTD&amp;E in Bridgeport's unforgiving, remote, and arduous location in California's Sierra mountains.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p style="padding-left: 40px;">(a) FY19 ERCIP P-480</p> <p style="padding-left: 40px;">(b) Furniture, Fixtures, and Equipment</p> <p>b. Project Type: ENERGY RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914:          MCMWTC Bridgeport's readiness is dependent on having a reliable and resilient energy infrastructure. This project supports mission assurance and readiness by providing the entire base with a reliable, resilient, and cybersecure microgrid that enables islanding and continuity of operations for 14+ days. This project supports mission critical functions by allowing all functions, including mission critical training, to continue operations without disruption since 100% of the base will be powered by the systems constructed in FY19 ERCIP P-480 and this project (FY23 ERCIP P-481). This project addresses known vulnerabilities associated with aging infrastructure, potential climate impacts (forest fires, blizzards, earthquakes), and manmade threats (terrorist attack, cyberattack, etc.). Vulnerabilities are mitigated by hardening the electrical infrastructure, increasing energy reliability by replacing aged infrastructure, enhancing the resilience by adding redundant onsite power systems, and improving cybersecurity by securing accrediting the system. All this work positions MCMWTC Bridgeport to operate without the commercial power for extended durations.</p>				<p>4,729</p> <p>2,500</p>
<p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022	
3. INSTALLATION AND LOCATION  Naval Air Station Jacksonville Jacksonville, Florida		4. PROJECT TITLE:  Facility Energy Operations Center Renovation			
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  89051	7. PROJECT NUMBER  RM 20-0515	8. PROJECT COST (\$000)  2,400		
9. COST ESTIMATES					
Item		U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b> Facility Energy Operations Center for Regional ICS, FAC#506 (CC89051) Operations and Maintenance Support Info (OMSI) and Commissioning Cybersecurity		SF LS LS	4,196 -- --	418.02 -- --	<b>1,920</b> (1,750) (70) (100)
<b><u>SUPPORTING FACILITIES</u></b>					<b>0</b>
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE					0
SUBTOTAL					<b>1,920</b>
CONTINGENCY (10%)					192
TOTAL CONTRACT COST					<b>2,112</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)					120
DESIGN/BUILD – DESIGN COST (4%)					92
TOTAL REQUEST					<b>2,335</b>
<b>TOTAL REQUEST (ROUNDED)</b>					<b>2,400</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)					556
<p>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</p> <p>Project renovates and reconfigures the Facility Energy Operations Center (FEOC) operational workspace. Reconfiguration will include but is not limited to the relocation of interior walls to provide private offices, open offices, breakroom, bathrooms, janitorial and communications rooms. Renovation of interior finishes shall be provided in this project. This project will reconfigure HVAC, electrical, plumbing, fire suppression and telecommunication utilities to support the FEOC operational functions. Security requirements for FEOC will be provided and integrated into existing BLDG 506 requirements. Specific coordination with Naval Computer and Telecommunications Area Master Station (NCTAMS) shall be required to ensure that NAS JACKSONVILLE secure communications and operations will not be impacted during or after renovation of second floor spaces.</p>					
<p>11. REQUIREMENT: N/A                              ADQT: N/A                              SUBSTD: N/A</p> <p><u>PROJECT:</u> Project renovates the FEOC operational workspace.</p> <p><u>REQUIREMENT:</u> This project invests in energy resilience to conserve energy, decrease utility costs, and increase Navy’s climate resilience. Requirement was calculated using UFC 2-000-05N Facility Planning Criteria for Navy/Marine Corps Shore Installations for Category Code 89051 and was calculated to support a Regional ICS Monitoring Station. The ICS Monitoring Station is the utility support facility that houses the operational components of the ICS as well as the personnel that operate the system.</p> <p><u>CURRENT SITUATION:</u> Currently the ICS Monitoring Station and staff occupy one office in BLDG 103. As the staffing and systems to be monitored grow, the current space will not be able to accommodate the operation.</p>					

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Naval Air Station Jacksonville Jacksonville, Florida			4. PROJECT TITLE:  Facility Energy Operations Center Renovation	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  89051	7. PROJECT NUMBER  RM 20-0515	8. PROJECT COST (\$000)  2,400	
<u>IMPACT IF NOT PROVIDED:</u> NAVFAC SE will not have the required facility to provide ICS Monitoring and the installation will not be able to achieve the increased reliability and energy resiliency and conservation this project affords.				
12. SUPPLEMENTAL DATA:  a. Other Appropriations or Funding Sources (\$000): (a) Facility-Related Controls System (FRCS)  b. Project Type: ENERGY RESILIENCE  c. Rationale IAW 10 USC 2914: This project improves responses to disruptions by identifying and prioritizing needed utility and equipment O&M support for critical missions and loads within the installations. It enables near real-time monitoring and control of Commander, Navy Region Southeast (CNRSE) Installations' Utility Supervisory Control and Data Acquisition (SCADA) and FRCS systems at the regional level. This project supports all 17 CNRSE's installations which include CNIC, NAVAIR, NAVSEA, TRIDENT Refit Facility (TRF), TRIDENT Training Facility (TTF), Strategic Weapons Facility Atlantic (SWFLANT), and other non-Navy or Non-DoD (e.g. USCG and USCBP) critical missions and operations.				556
<hr/> Office of the Deputy Assistant Secretary of Defense (Environment & Energy Resilience) 703-843-0159				

1. COMPONENT Defense Wide - USSF	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION Patrick Space Force Base Cape Canaveral Space Force Station Site #1 Cape Canaveral, Florida			4. PROJECT TITLE: Underground Electric Distribution System	
5. PROGRAM ELEMENT 0904903D	6. CATEGORY CODE 812225	7. PROJECT NUMBER DBEH071588	8. PROJECT COST (\$000) 8,400	
9. COST ESTIMATES				
Item	U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>				
Primary Distribution Line Underground (CC812225)	LF	10,000	596.32	5,970 (5,960)
Cybersecurity	LS	--	--	(10)
<b><u>SUPPORTING FACILITIES</u></b>				
Site Preparation	LS	--	--	1,540 (1,410)
Pavements	LS	--	--	(20)
Demolition	LS	--	--	(110)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE				0
SUBTOTAL				<b>7,510</b>
CONTINGENCY (5%)				376
TOTAL CONTRACT COST				<b>7,886</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)				449
TOTAL REQUEST				<b>8,335</b>
<b>TOTAL REQUEST (ROUNDED)</b>				<b>8,400</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)				0
10. DESCRIPTION OF PROPOSED CONSTRUCTION: Replaces the East Z-Line, the overhead electric distribution line to the Poseidon Wharf, with an underground electric distribution system in approximately the same geographical location. Replaces the main line and all laterals; replaces overhead transformers with new correctly sized pad mount transformers. Replaces the West Z-Line, the overhead electric distribution line to the Army Docks, with a new underground electric distribution system. All overhead transformers to be replaced with new correctly sized pad mount transformers. All transformers, laterals and other electrical components will be sized and installed per the study/design in accordance with all applicable UFC's, AFI's, NFPA and other standards codes.				
11. REQUIREMENT: N/A                      ADQT: N/A                      SUBSTD: N/A				
<u>PROJECT:</u> This project replaces the overhead electric distribution line with an underground electric distribution system.				
<u>REQUIREMENT:</u> Cape Canaveral Space Force Station (CCSFS) is the premier gateway to space and the Space Launch Delta 45's primary mission is command and control of the Eastern Range Weapons systems and supporting National Security DoD payloads, commercial, and human space flight launches. One of the critical requirements for successful rocket launches is a reliable electrical distribution infrastructure. Reliable and resilient electrical distribution infrastructure is required at CCSFS supporting critical launch functions. Additionally, this will provide reliable launch infrastructure, launch teams, and seamless partnership with launch and satellite programs.				
This project will update the electrical line infrastructure to use current equipment and part spares that are available in industry. Current infrastructure maintenance may be impeded due to lack of spares based on the age of the electrical line.				

1. COMPONENT Defense Wide - USSF	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Patrick Space Force Base Cape Canaveral Space Force Station Site #1 Cape Canaveral, Florida			4. PROJECT TITLE:  Underground Electric Distribution System	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  812225	7. PROJECT NUMBER  DBEH071588	8. PROJECT COST (\$000)  8,400	
<p>This project would decrease downtime for repair and unanticipated costs by using current spares, as opposed to antiquated or phased-out spares.</p> <p><u>CURRENT SITUATION:</u> The components on Z-line are over 45 years old and past their useful life cycle. Z-line is currently an overhead system and is subject to damage from lightning, high winds, hurricanes, animal entrapment. The CCSFS installation location is less than one mile from a salt water source, causing all metal components to deteriorate at an increased rate. Maintenance on the overhead lines is very costly and time consuming. There have been 4 unscheduled outages on Z-line in the past year and 10 in the past 2.5 years. Unscheduled electrical outages and power fluctuations are becoming more common due to the above conditions as Z-line is one of the last remaining areas of overhead electric on CCSFS. In addition to rocket launches, CCSFS and Z-line also support Strategic Weapons Systems for the Navy including Test and Evaluation of the Ballistic Missile submarines that require reliable power while in port. Another key component for installing the new lines underground is potential impact to rockets, boosters, missiles, satellites and other payloads. These mission critical assets are transported along CCSFS roadways and have a strict separation distance between the assets and the overhead power lines. This is becoming an issue since the rockets/boosters/missiles are getting larger.</p> <p><u>IMPACT IF NOT PROVIDED:</u> Failure to replace the current overhead Z-line electrical distribution system with an underground distribution system could result in major impacts to mission milestones including launch scrubs, delays, or aborts. A scrubbed launch due to an electrical issue will result in complete mission failure. Depending on the payload and proposed orbit, these payloads have a very tight window to launch. Some launch windows only come once or twice a year, so a scrubbed launch could result in major delays to national security or manned spaceflight missions. These adverse mission impacts would result in extra costs to the government and/or its mission partners. These additional costs due to unplanned outages or power fluctuations could range from several thousand to several millions of dollars depending on when the launch was aborted. These unplanned events could potentially affect port schedules and the overall mission of CCSFS.</p>				
12. SUPPLEMENTAL DATA:  a. Other Appropriations or Funding Sources (\$000):  b. Project Type: ENERGY RESILIENCE  c. Rationale IAW 10 USC 2914: Project directly remediates disruption risk by providing new undergrounded electrical circuits in the vicinity of critical loads and outside of biologically sensitive areas. The area is susceptible to hurricane and storm damage, as exhibited by past tropical storm activity impacting the county (e.g., Charley, Frances, and Jeanne in 2004, Matthew in 2016, Irma in 2017). This project would eliminate vulnerability to critical loads supporting Falcon 9 launches, Navy missions, and port operations.				0
Office of the Deputy Assistant Secretary of Defense (Environment & Energy Resilience) 703-843-0159				



1. COMPONENT Defense Wide - USSF		<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022		
3. INSTALLATION AND LOCATION  Patrick Space Force Base Cape Canaveral Space Force Station Site #1 Cape Canaveral, Florida				4. PROJECT TITLE:  Water Distribution Loop			
5. PROGRAM ELEMENT  0904903D		6. CATEGORY CODE  842245	7. PROJECT NUMBER  DBEH161571	8. PROJECT COST (\$000)  7,300			
9. COST ESTIMATES							
Item				U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>							<b>5,630</b>
Water Distribution Mains (CC842245)				LF	41,505	129.15	(5,360)
Water Pump Station (CC842249)				KG	1.5	180,000	(270)
<b><u>SUPPORTING FACILITIES</u></b>							<b>910</b>
Pavements				LS	--	--	(30)
Utilities				LS	--	--	(20)
Site Preparation				LS	--	--	(840)
Demolition				LS	--	--	(20)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE							0
SUBTOTAL							<b>6,540</b>
CONTINGENCY (5%)							327
TOTAL CONTRACT COST							<b>6,867</b>
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)							391
DESIGN DURING CONSTRUCTION (DDC)							36
TOTAL REQUEST							<b>7,294</b>
<b>TOTAL REQUEST (ROUNDED)</b>							<b>7,300</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)							0
10. DESCRIPTION OF PROPOSED CONSTRUCTION: The scope of the proposed project is to install 41,505 linear feet of new high density polyethylene (HDPE) potable water mains, with booster pumps with variable frequency drive (VFD) motors and controls and isolation valves, to provide looped water systems to the Integrate-Transfer-Launch (ITL) and north areas at Cape Canaveral Space Force Station (CCSFS). Construct a new pump house and install a new circulation pump with VFD motor and associated controls, power, and components in support of the looped water systems. All water mains, pumps, and electrical components will be sized and installed in accordance with all applicable standards and codes.							
11. REQUIREMENT: N/A		ADQT: N/A		SUBSTD: N/A			
<b><u>PROJECT:</u></b> This project installs a new water distribution loop at CCSFS.							
<b><u>REQUIREMENT:</u></b> Space Launch Delta 45's (45 SLD) mission is to provide the activities and resources for safety of flight, range instrumentation, infrastructure, and scheduling required to support and assure space and ballistic launches, and other operations. 45 SLD must also provide reliable launch infrastructure, launch teams, and seamless partnership with launch and satellite programs. The placement of new water mains to form a water loop for the ITL and North Launch Areas of CCSFS will create an additional potable water supply path for mission-critical facilities. Potable water supply for these facilities is critical for indoor environmental control to process payloads and deluge water to conduct launch missions. This project would decrease the likelihood of infrastructure-driven launch mission delays and scrubbed launch missions. This project will eliminate the need to flush 20.9 million gallons (MGal) per year while ensuring that potable water delivered to facilities meets drinking standards as required by the Clean Water Act. This reduction of water consumption for flushing will also remove costs and labor associated with increased water treatment and equipment.							

1. COMPONENT Defense Wide - USSF	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  Patrick Space Force Base Cape Canaveral Space Force Station Site #1 Cape Canaveral, Florida			4. PROJECT TITLE:  Water Distribution Loop	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  842245	7. PROJECT NUMBER  DBEH161571	8. PROJECT COST (\$000)  7,300	
<p><u>CURRENT SITUATION:</u> CCSFS is the premier gateway to space and the 45 SLD primary mission is command and control of the Eastern Range Weapons systems and supporting National Security DoD payloads, commercial, and human space flight launches. One of the critical requirements for successful rocket launches is a reliable water distribution infrastructure. The multiple stakeholders at this installation all have high water demand. These customers include Space Exploration Technologies (SpaceX), Space Florida, and United Launch Alliance (ULA). Furthermore, CCSFS must flush 1.5 to 3 million gallons of water every month to maintain drinking water quality throughout the installation. Re-circulating and re-chlorinating potable water in the ITL and North Cape areas would significantly reduce flushing, thereby reducing energy and water usage.</p> <p><u>IMPACT IF NOT PROVIDED:</u> The existing mains would fail and directly impact launch capability. The ITL and North Cape areas have a single source of potable water supplied, in part, through 10,560 linear feet of 12 inch transite pipe on Phillips Parkway from Titan III Road to Patrol Road. The transite pipes were installed in the 1950s and are beyond its useful life. Most of the facilities in the ITL and North Cape areas are launch critical. A failure of the existing mains would directly impact launch capability. Further, CCSFS must flush 1.5 to 3 million gallons of water every month to maintain drinking water quality throughout the Installation, which would continue should this project not be implemented.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: WATER RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914: Project directly remediates disruption risk by providing a redundant potable water supply to critical facilities in the ITL and North Areas of CCSFS. Lack of potable water supply has prompted immediate installation response to provide potable water from filled deluge tanks and water towers in order to provide water for cooling tower and chiller systems of critical facilities. This project would result in the potable water system being able to function while having an unscheduled outage in one path of the potable water pathway.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0

1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022	
3. INSTALLATION AND LOCATION Fort Stewart-Hunter Army Airfield Fort Stewart, Georgia			4. PROJECT TITLE: Power Generation and Microgrid		
5. PROGRAM ELEMENT 0904903D	6. CATEGORY CODE 81117	7. PROJECT NUMBER 98162	8. PROJECT COST (\$000) 25,400		
9. COST ESTIMATES					
Item		U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>					<b>20,650</b>
Primary Power Generation (CC81117)		KW	8,300	1,837	(15,250)
Microgrid Controls, Switchgear, Switches, and Breakers		LS	--	--	(3,610)
Building Information Systems, Integration, and Commissioning		LS	--	--	(520)
Interconnection, Engineering Studies, and Load Bank Testing		LS	--	--	(630)
Cybersecurity		LS	--	--	(610)
<b><u>SUPPORTING FACILITIES</u></b>					<b>1,250</b>
Gas Distribution		LS	--	--	(350)
Electric Utility Connection		LS	--	--	(170)
Water Utility Connection		LS	--	--	(40)
Site Improvements		LS	--	--	(690)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE					0
SUBTOTAL					<b>21,900</b>
CONTINGENCY (10%)					2,190
TOTAL CONTRACT COST					<b>24,090</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)					1,373
TOTAL REQUEST					<b>25,410</b>
<b>TOTAL REQUEST (ROUNDED)</b>					<b>25,400</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)					0
10. DESCRIPTION OF PROPOSED CONSTRUCTION: Construct a natural gas (NG) generation plant, with existing Reciprocating Internal Combustion Engines (RICE) generators, connected to the installation's distribution switching station, owned by Canoochee Electric Membership Cooperative (CEMC), and to the installation's natural gas infrastructure. In addition to the generating equipment, the plant will consist of generators, a newly installed microgrid control system, and a paralleling switchgear. The microgrid control system will provide smart switching capabilities at the feeder level providing power to meet the needs of the entire installation. In addition, the project will install unit transformers, switchgear, and microgrid control systems, along with fire protection and detection systems. The microgrid control system includes transfer switches, automated circuit breakers, interface and protection relays, generation transformer, microgrid controller, and fiber optic communication connections. Supporting facilities include water, sewer, and natural gas utility connections, site preparation, security lighting, paving, walkways, curbs, storm drainage, site clearing and grading, fencing, landscaping, and signage.					
11. REQUIREMENT: N/A                      ADQT: N/A                      SUBSTD: NA					
<u>PROJECT:</u> This project constructs a microgrid, to include a NG generation plant and interconnection with the installation's natural gas supply.					
<u>REQUIREMENT:</u> The September 2019 Project Feasibility Assessment (PFA) conducted by the National Renewable Energy Laboratory (NREL) recommended Hunter Army Airfield (HAAF) install an 8 MW microgrid to provide redundant backup to support					

1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  Fort Stewart-Hunter Army Airfield Fort Stewart, Georgia			4. PROJECT TITLE:  Power Generation and Microgrid	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81117	7. PROJECT NUMBER  98162	8. PROJECT COST (\$000)  25,400	
<p>one hundred percent of mission critical facilities and cover nominal base load. The benefits of constructing a second electric supply point to HAAF include supplying HAAF with generation for 100% of mission critical facilities, including 3MW of critical loads. Additionally, deploying a microgrid system will substantially mitigate impacts to critical missions during power outages by maintaining power, and will also increase energy resilience and surety. Compared to traditional back-up power, the microgrid system will provide better operational reliability, maintenance sustainability, safety, and intelligent management to more loads utilizing both new and existing systems. This project enhances mission assurance by providing standby power to support energy delivery to mission critical facilities during power outage events.</p> <p>This project provides energy resilience in times of grid outage to allow the critical missions to continue operation at HAAF. The project will support mission critical activities by providing emergency power for the following facilities: Headquarters for 3rd Combat Aviation Brigade (3CAB), Bulk Fuel (JP-8) Storage and fueling, DAAG/Ready Building, Ammo Supply Points, and shelter locations for families. Sectionalization at the circuit level to serve only critical loads would be cost prohibitive, therefore the project is designed to power the entire installation.</p> <p><u>CURRENT SITUATION:</u> HAAF, a sub-installation of Fort Stewart is the headquarters of the 3CAB. Additionally, HAAF supports Fort Stewart as the staging area for mass deployment. During a mass deployment from Fort Stewart, Armored Brigade Combat Teams (ABCTs) from the 3rd Infantry, 1st and 2nd Armored Brigade, pass through HAAF, including its soldier processing facilities (e.g. DAAG/Ready Building).</p> <p>The installation mission critical load is approximately 3MW. Mission critical facilities and operations are currently served with numerous building attached back-up diesel generators. Generators are currently installed at the following configurations: 300, 250, 150, 100, 175, two 60, and 80 kW. In an emergency situation, if the commercial electric power grid is down, there are insufficient staff to purchase, arrange transport, fuel and maintain the many back-up generators. The fuel storage supply on the installation is limited for existing generators, and it is incapable of sustained emergency operations for any extended period of time. Between January 1, 2017 to January 1, 2020, HAAF has suffered several distribution level outages, totaling 81 hours. Currently Canoochee EMC owns the electrical distribution system. The installation and CEMC are hardening feeder level distribution under the Utilities Privatization contract to address on-post outages. Utility connections are required for electric distribution, electric generation, natural gas, and water system(s). The Army intends to have CEMC make and own the necessary connections up to the facility service disconnect or other defined point of demarcation and will examine future ownership of the completed ERCIP project.</p> <p><u>IMPACT IF NOT PROVIDED:</u> Fort Stewart – HAAF will continue to be susceptible to electrical grid outages which disrupt operation of critical mission facilities. Readiness and deployment capabilities will be adversely impacted by a commercial grid outage and will drastically increase the risk of mission delays and failures. Even assuming no unforeseen maintenance or operational issues occur with facility-level backup generators, in the event of an outage critical mission functions will be impacted within days.</p>				

1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  Fort Stewart-Hunter Army Airfield Fort Stewart, Georgia			4. PROJECT TITLE:  Power Generation and Microgrid	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81117	7. PROJECT NUMBER  98162	8. PROJECT COST (\$000)  25,400	
12. SUPPLEMENTAL DATA:  a. Other Appropriations or Funding Sources (\$000):  b. Project Type: ENERGY RESILIENCE  c. Rationale IAW 10 USC 2914: This project will provide a microgrid control system that will enhance the protection and resilience of critical assets and capabilities by providing smart switching capabilities at the feeder level, providing critical power to meet the needs of the Hunter AAF. This project will support 100% of critical missions and critical facilities at Hunter AAF, including the 3CAB BDE HQ, aircraft and vehicle fueling points, the Ammo Supply Point, and critical infrastructure such as water wells and the wastewater treatment plant.  <hr/> Office of the Deputy Assistant Secretary of Defense (Environment & Energy Resilience) 703-843-0159				0

1. COMPONENT Defense Wide - Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION Naval Submarine Base Kings Bay Kings Bay, Georgia			4. PROJECT TITLE: SCADA Modernization	
5. PROGRAM ELEMENT <p style="text-align: center;">0904903D</p>	6. CATEGORY CODE <p style="text-align: center;">89051</p>	7. PROJECT NUMBER <p style="text-align: center;">P694</p>	8. PROJECT COST (\$000) <p style="text-align: center;">11,200</p>	
<b>9. COST ESTIMATES</b>				
Item	U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>				
Overhead Electrical Distribution Lines (CC81231)	LF	34,000	134.64	(4,580)
Industrial Control Systems (ICS)/SCADA Infrastructure (CC89051)	SF	42,000	77.19	(3,240)
ICS Infrastructure Network (CC89050)	MI	7	191,611.45	(1,340)
Electric Systems Maintenance Shops (CC21910)	SF	1,000	70.59	(70)
<b><u>SUPPORTING FACILITIES</u></b>				
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE				0
SUBTOTAL				<b>9,230</b>
CONTINGENCY (10%)				923
TOTAL CONTRACT COST				<b>10,153</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)				579
DESIGN/BUILD – DESIGN COST (4%)				443
TOTAL REQUEST				<b>11,175</b>
<b>TOTAL REQUEST (ROUNDED)</b>				<b>11,200</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)				0
<b>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</b>				
<p>Upgrades the passive and active infrastructure for the Supervisory Control and Data System (SCADA) network with the latest monitoring and control equipment and increases interconnectivity by repairing existing connection points. Control Center spaces in Building 2025 shall be upgraded to accommodate the building's HVAC systems to meet the demands of SCADA equipment. The project reconfigures and repairs Sub-Base Kings Bay existing Integrated Digital Network (IDN) infrastructure. The project will repair passive and active infrastructure for the SCADA network. The project upgrades main distribution nodes (MDN), intermediate distribution nodes (IDN) and edge network nodes (EDN) located throughout Kings Bay Naval Submarine Base. Electrical feeder distribution relays will be upgraded from outdated electromechanical devices to solid-state processor controlled models needed for adequate distribution system reliability and resiliency. The relay system will be integrated into the SCADA network for viewing and historical trending. Relays will be programmed and updated per latest electrical coordination study. The SCADA system will utilize the latest software as its interface, replacing outdated software. It will provide control, alarming, and data logging functionality. Existing client software will be upgraded to the latest version and will be installed on new PC workstations. The architecturally reconfigured room shall include ergonomically designed workstations with sufficient workspace for multiple monitor viewing by up to three seated operators. All telecommunication hardware and software for the Control Center shall be supplied including SCADA view nodes, color printers.</p>				
11. REQUIREMENT: N/A                              ADQT: N/A                              SUBSTD: N/A				
<u>PROJECT:</u> Modernize SCADA and electrical distribution protection for an accredited industrial controls network.				
<u>REQUIREMENT:</u> This project supports energy resilience by providing more reliable communications and control from any one point in the system to any other point. It replaces obsolete equipment and reduce latency throughout the Industrial Controls Network and creates centralized server architecture to allow management of any part of the SCADA system from any workstation to apply system updates and security patches. This project also improves electrical distribution reliability and redundancy through				

1. COMPONENT Defense Wide - Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  Naval Submarine Base Kings Bay Kings Bay, Georgia			4. PROJECT TITLE:  SCADA Modernization	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  89051	7. PROJECT NUMBER  P694	8. PROJECT COST (\$000)  11,200	
<p>installation of programmable solid-state protective relays. It repairs SCADA central control room HVAC to meet NAVFAC standards, integrates and updates SCADA software throughout the ICS network, and integrates Sub-4 Bldg. 5199A into existing SCADA architecture. This project connects, terminates, and tests 96-strand single mode fiber through several buildings, and updates the lift station radio infrastructure to reduce outages from annual vegetation cycles.</p> <p><u>CURRENT SITUATION:</u> The existing SCADA system was last modified in 1997 to include new passive infrastructure, pathways, and SCADA monitoring, processing, and network devices. The existing infrastructure is using a combination of twisted pair, multimode, serial/pinned, RF, and wireless with various interface protocols. The existing infrastructure includes limited single mode fiber optic cable. Remote utility service plants operate unmanned and are monitored and controlled locally from the Utilities control center. The buried multi-mode fiber is severely degraded and causes data loss and throughput reductions thereby reducing utility service reliability. The SCADA Equipment and software is not in compliance with DoD cyber-security accreditation requirements. Electrical distribution circuits are protected using electromechanical relays that are no longer manufactured. These devices contain moving, wearing components that can no longer be sourced economically. The relay settings have been reviewed and require revision due to changes in base facility loadings.</p> <p><u>IMPACT IF NOT PROVIDED:</u> The existing SCADA system will continue to degrade and cause loss of data and utility reliability. If the electromechanical relays degrade or break, those parts will not be able to be replaced as they are no longer manufactured. The SCADA Equipment and software will also not be in compliance with DoD cyber-security accreditation requirements, and will be vulnerable to cyber-attacks.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: ENERGY RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914: The project aligns energy security gaps with the requirements of critical missions and improves the component's ability to reduce and recover from distribution failures. This project supports energy resilience by providing more reliable communications and systems control. The project updates electrical feeders and integrates SCADA network software ICS infrastructure.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022		
3. INSTALLATION AND LOCATION Joint Base Pearl Harbor-Hickam Wahiawa, Hawaii			4. PROJECT TITLE: Primary Electrical Distribution			
5. PROGRAM ELEMENT 0904903D	6. CATEGORY CODE 81320	7. PROJECT NUMBER P8005	8. PROJECT COST (\$000) 25,000			
<b>9. COST ESTIMATES</b>						
Item			U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>						<b>22,560</b>
Substation Replacement (CC81320)			KV	12.47	1,224,538	(15,270)
Primary Underground Electric Distribution Lines (CC81232)			LF	22,510	324.06	(7,290)
<b><u>SUPPORTING FACILITIES</u></b>						<b>0</b>
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE						0
SUBTOTAL						<b>22,560</b>
CONTINGENCY (5%)						1,128
TOTAL CONTRACT COST						<b>23,688</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)						1,350
TOTAL REQUEST						<b>25,038</b>
<b>TOTAL REQUEST (ROUNDED)</b>						<b>25,000</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)						0
<b>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</b>						
<p>This project replaces existing primary 4.16KV feeders (circuits F1 and F3) with 12.47KV feeders located in the Naval Computer and Telecommunications Area Master Station (NCTAMS) Pacific in Wahiawa, Joint Base Pearl Harbor Hickam (JBPHH). Work will include replacing existing deteriorated underground conductors, underground conduits and electrical substations. Where possible, the existing underground conduits will be replaced between the existing electrical manholes. All 4.16KV conductors within the scope of this project will be disconnected and removed. The new 12.47KV circuits will be connected to the existing 12.47KV switchgear in Switching Station S262. The project will also replace existing old and deteriorated pad mounted 4.16KV primary switches and transformers with 12.47KV pad mounted primary switches and transformers in NEMA 3R stainless steel enclosures. Secondary switchboards will be replaced as needed. Replacement electrical equipment will be installed adjacent to existing electrical equipment where possible to minimize down time. The existing electrical equipment will be demolished after cut-over. The project will transfer existing S8 and B446 electrical load to circuits F5 and F6. B401 and B432 electrical load will be transferred to circuit F5 since they are single circuit fed. This project also proposes to transfer 12.47KV to 4.16KV step-down transformer at existing Switch NCT-SW1. This will supply power to the existing loop-fed housing transformers. The building's two 4.16KV 1500KVA transformers and two primary breakers will be replaced with new 12.47KV 1500KVA transformers and primary breakers. The two 12.47KV circuits (P10 and P11) will be extended from electrical manhole NC22 to serve the new equipment. The 4.16KV cables and electrical equipment will be disconnected and removed.</p>						
<b>11. REQUIREMENT: N/A                      ADQT: N/A                      SUBSTD: N/A</b>						
<b><u>PROJECT:</u></b> The project replaces the existing electrical distribution system that services facilities throughout NCTAMS Pacific, Wahiawa, JBPHH.						
<b><u>REQUIREMENT:</u></b> This project increases resiliency by providing replacement of deteriorated and obsolete circuits and associated infrastructure and provides additional redundancy and reliability for the installation. Naval Facilities Engineering Command (NAVFAC)						



1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Joint Base Pearl Harbor-Hickam Wahiawa, Hawaii			4. PROJECT TITLE:  Primary Electrical Distribution	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81320	7. PROJECT NUMBER  P8005	8. PROJECT COST (\$000)  25,000	
<p>Hawaii Utilities is required to provide adequate, reliable and uninterrupted electrical power throughout the installation. Existing Wahiawa Annex primary 4.16kV feeders are old, deteriorated, and need replacement. Reliability, resilience, and power security will be provided for C5ISR OPS – Command &amp; Control and MMDS C5IRS OPS - Network Operations/Telecommunications critical missions and multiple facilities located at NCTAMS.</p> <p><u>CURRENT SITUATION:</u> The existing 4.16KV primary feeders, F1 and F3, provide electrical power to various facilities at NCTAMS Pacific Wahiawa, JBPHH. The existing 4.16KV electrical system is old and deteriorated. Bldg 409's electrical service equipment is also old and severely deteriorated. The older 4.16 kV South distribution circuit is a mismatch to the newer North 12 kV circuit so neither circuit can back up the other. In addition, the existing 4.16kV deteriorated distribution system had 39 separate outages over the past 10 years and the total duration exceeded 166 hours. The majority, 50%, occurred over the past 3 years, some lasting up to 16 hours.</p> <p><u>IMPACT IF NOT PROVIDED:</u> The Navy will be unable to support the mission of NCTAMS Pacific, Wahiawa, JBPHH. The normal service life for this equipment has been exceeded and system failures have already been experienced. The forecast is that outages and duration will continue to increase the equipment goes without any replacements or updates.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: ENERGY RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914: This project increases resiliency by providing replacement of deteriorated and obsolete circuits and associated infrastructure and provides additional redundancy and reliability for the installation. The current 4.16kV feeders are undersized and inconsistent with the newer 12.47kV grid, eliminating JBPHH's ability to connect to the older grid for added resiliency. Reliability, resilience, and power security will be provided for C5ISR OPS – Command &amp; Control and MMDS C5IRS OPS - Network Operations/Telecommunications critical missions and multiple facilities located at NCTAMS, Wahiawa Annex, Joint Base Pearl Harbor Hickam.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0

1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022		
3. INSTALLATION AND LOCATION  Fort Riley Fort Riley, Kansas			4. PROJECT TITLE:  Power Generation and Microgrid			
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81117	7. PROJECT NUMBER  98161	8. PROJECT COST (\$000)  25,780			
<b>9. COST ESTIMATES</b>						
Item			U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>						<b>21,430</b>
Primary Power Generation (CC81117)			KW	7,500	1,830	(13,730)
Microgrid Controls, Switchgear, Switches, and Breakers			LS	--	--	(3,890)
Building Information Systems, Integration, SCADA, and Commissioning			LS	--	--	(1,850)
Interconnection, Engineering Studies, and Load Bank Testing			LS	--	--	(660)
Cybersecurity			LS	--	--	(300)
Gas Pipeline			LF	100	750	(80)
Interconnection Agreement			LS	--	--	(110)
Environmental and Air Permitting			LS	--	--	(810)
<b><u>SUPPORTING FACILITIES</u></b>						<b>740</b>
Site Improvements			LS	--	--	(660)
Information Systems			LS	--	--	(50)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE						0
SUBTOTAL						<b>22,170</b>
CONTINGENCY (10%)						2,217
TOTAL CONTRACT COST						<b>24,387</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)						1,390
TOTAL REQUEST						<b>25,777</b>
<b>TOTAL REQUEST (ROUNDED)</b>						<b>25,780</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)						0
<b>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</b> Construct a microgrid with controls and automatic switching for isolating and powering up to 35% of the installation's critical load. The microgrid includes the installation of multiple natural gas (NG) centralized generators located at substation #7 to perform peak shaving which will produce savings that can be reinvested to increase the resilience posture of the installation. The microgrid will power up to 46 critical facilities located on feeders connected to substations #1, 2, and 7 with an estimated critical load of 5.2MW. The project involves installing a 6-inch natural gas line to service the new generation plant. The proposed site of the NG generator is within 100 feet of an existing natural gas line. Each generator will have a unit step-up transformer to match the distribution voltage. 12.47 kV circuit breakers and conductors will be installed to isolate the generators from the distribution system. The microgrid control system will include, but not limited to, the following: transfer switches, interface relays, microgrid controllers, automatic switches for isolating critical loads, and fiber optic communication connections. Connect/Install and integrate microgrid control system with SCADA system to allow remote read, write and control of the management, communication, and operation of protective devices.						
<b>11. REQUIREMENT: N/A</b> <b>ADQT: N/A</b> <b>SUBSTD: N/A</b>						
<b><u>PROJECT:</u></b> This project will construct a microgrid connected to the electrical distribution system with modular natural gas generation.						
<b><u>REQUIREMENT:</u></b>						

1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  Fort Riley Fort Riley, Kansas			4. PROJECT TITLE:  Power Generation and Microgrid	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81117	7. PROJECT NUMBER  98161	8. PROJECT COST (\$000)  25,780	
<p>Fort Riley supports training, assembly, and deployment missions associated with the FORSCOM units located on the installation, particularly, the 1st Infantry Division (1ID). The 1ID is one of only six heavy divisions in the Army designed to deter conflict, but if deterrence fails, to rapidly deploy, fight and win our nation's wars. Currently, the division must rely on its portable warfighting equipment and power generation capability to maintain installation operations should there be a prolonged loss of power.</p> <p>Once operational, the microgrid will provide Fort Riley the ability to island up to 35% of its critical load from the external power grid in times of a grid outage and continue those mission critical operations for a minimum of 14 days. This microgrid project will mitigate that vulnerability and greatly improve the installation's ability to support the Army's mission. The installation's mission critical load is approximately 15MW with an annual peak load of 44MW. This project will provide up to 7.5MW on selected critical circuits. The project will also support the installation in capturing energy savings so that the installation can invest in additional resilience projects. Developing a microgrid at Fort Riley will greatly improve the energy security and resilience of the installation and will significantly increase the ability to ensure the continuity of operations and mission essential functions of Fort Riley as a Power Projection Platform (PPP), Mobilization Force Generation Installation (MFGI) Contingency Inactive, and Regional Collective Training Capability (RCTC) installation. The microgrid project will support all the critical missions connected to Substations 1, 2 and 7 which include the 1ID division and garrison command. The generation is sized (7.5MW) to optimize the savings from peak shaving.</p> <p><u>CURRENT SITUATION:</u></p> <p>The installation is not currently compliant with near-term energy resilience requirements. There is an inadequate number of backup generators and onsite fuel storage to sustain critical facilities across the installation beyond 14 days. Of the 129 critical facilities, 57 have no backup power. There are 60 generators (35 NG, 22 diesel, and 3 propane) serving one or more critical facilities. The average run time on day tanks located at the diesel back-up generators is three days. To run the diesel generators for 14 days, 35,000 gallons of diesel would be needed for existing generators. Bulk diesel storage capacity on Fort Riley is 38,000 gallons. This 38,000 gallon fuel capacity is meant to provide fuel for both generators and vehicles, so this limits the ability to dedicate 35,000 gallons solely to generators. In an emergency situation, with the commercial electric power grid down, the installation's current power generation infrastructure would not be sufficient to support its energy resilience needs in order to carry out its critical missions. Fort Riley experiences electrical outages regularly. Data from the utility privatization (UP) provider, City, Light &amp; Power (CLP), indicates that three to five outages per month is typical for the past year. All of these outages occurred on-post and they were not a result of loss of the outside utility service. These outages are typically localized and only impacting a few facilities. The installation and CLP are hardening the distribution grid under the UP contract to address on-post outages. Utility connections are required to a privatized electric distribution, electric generation, natural gas, water, wastewater, central heating and/or cooling system(s). The Army intends to have CLP make and own the necessary connections up to the facility service disconnect or other defined point of demarcation and will examine future ownership of the completed ERCIP project.</p> <p><u>IMPACT IF NOT PROVIDED:</u></p> <p>If the critical missions of training, assembly, and deployment were to fail at Fort Riley, the Army's ability to maintain and rapidly deploy combat ready forces would be negatively impacted. The loss of one of the Army's six heavy divisions would jeopardize the ability of the Army to effectively respond to an external threat. A grid outage would impede the rapid deployment of combat ready forces. Training would halt, certifications would be suspended, and deployment would be impeded. It is estimated that a prolonged grid outage would cost \$1.2M per day in lost productivity and delays in training and deployment. Divisional units cannot prepare and pack-out their warfighting equipment if it is being used to maintain the installation's operational capability.</p>				

1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  Fort Riley Fort Riley, Kansas			4. PROJECT TITLE:  Power Generation and Microgrid	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81117	7. PROJECT NUMBER  98161	8. PROJECT COST (\$000)  25,780	
12. SUPPLEMENTAL DATA:  a. Other Appropriations or Funding Sources (\$000):  b. Project Type: ENERGY RESILIENCE  c. Rationale IAW 10 USC 2914:  This project provides emergency power and will enhance the protection and resilience of mission critical facilities and capabilities located on feeders connected to three (3) electrical substations. Over half of the facilities do not currently have emergency generators. Facilities served include First Infantry Division Headquarters, Four (4) Brigade Headquarters Buildings, and five (5) training and training support centers. Project will allow these facilities to operate under emergency power in the event of a power outage caused by local events or grid serving the installation.				0
Office of the Deputy Assistant Secretary of Defense (Environment & Energy Resilience) 703-843-0159				

1. COMPONENT Defense Wide – NSA		<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022		
3. INSTALLATION AND LOCATION  Fort George G. Meade Fort Meade, Maryland				4. PROJECT TITLE: Reclaimed Water Infrastructure Expansion			
5. PROGRAM ELEMENT  0904903D		6. CATEGORY CODE  84510	7. PROJECT NUMBER  40409		8. PROJECT COST (\$000)  23,310		
9. COST ESTIMATES							
Item				U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>							<b>18,320</b>
Water Distribution Line (CC84510)				LF	21,635	276.40	(5,980)
Equipment				LS	--	--	(3,700)
HVAC				LS	--	--	(4,120)
Chiller Coating				LS	--	--	(4,200)
Operation & Maintenance Supplemental Info (OMSI)				LS	--	--	(90)
Special Costs				LS	--	--	(230)
<b><u>SUPPORTING FACILITIES</u></b>							<b>1,610</b>
Site Work				LS	--	--	(1,320)
Traffic Management				LS	--	--	(290)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE							0
SUBTOTAL							<b>19,930</b>
CONTINGENCY (10%)							1,993
TOTAL CONTRACT COST							<b>21,923</b>
SUPERVISION, INSPECTION & OVERHEAD (SIOH) (5.7%)							1,250
DESIGN DURING CONSTRUCTION (DDC)							140
TOTAL REQUEST							<b>23,313</b>
<b>TOTAL REQUEST (ROUNDED)</b>							<b>23,310</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)							0
10. DESCRIPTION OF PROPOSED CONSTRUCTION: This project will construct reclaimed water system expansion for cooling tower makeup water for the facilities on West Campus and Central Campus at National Security Agency – Washington (NSAW). The reclaimed water will provide a redundant utility for mission-critical operations. Using reclaimed water in the cooling towers will also reduce water costs and drawdown from the capacity-constrained wells that serve Fort George G. Meade (Ft. Meade) and NSAW. New reclaimed water distribution will be extended from the existing system to additional buildings. The additional mains will be installed using a methodology to minimize campus impact. Inside the mechanical rooms of the buildings, the reclaimed water system will be tied into the cooling tower makeup water system. The system will provide the appropriate levels of pressure and ensure no cross-contamination between the potable and reclaimed water systems. Chemical treatment systems and chiller tubes will be modified to ensure water quality causes no degradation of downstream equipment. The system will be tied into the existing campus Energy Management Control System (EMCS) to allow for the automated control of water source for cooling tower makeup between potable water and reclaimed water. Special costs associated with construction in a secure perimeter are included for construction escorts. Supporting facilities include traffic management for road crossings, piping along roadways, and parking lots. The supporting facilities cost also includes site work for utility location and testing pits, road crossings, parking lots, staging/laydown areas, and the restoration of staging/lay down areas.							
11. REQUIREMENT: N/A		ADQT: N/A		SUBSTD: N/A			
<b><u>PROJECT:</u></b> Construct reclaimed water distribution piping and building service connections at NSAW.							

1. COMPONENT Defense Wide – NSA	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  Fort George G. Meade Fort Meade, Maryland			4. PROJECT TITLE: Reclaimed Water Infrastructure Expansion	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  84510	7. PROJECT NUMBER  40409	8. PROJECT COST (\$000)  23,310	
<p><u>REQUIREMENT:</u> This project was developed from the Energy and Sustainability Plan (ESP) for the NSAW Campus. This project will achieve identified sustainability and resiliency goals through efficiency and sustainability improvements for the campus including a 36% reduction of campus water use intensity from a 2007 baseline, while maintaining or enhancing the resiliency of the existing infrastructure and facilities.</p> <p><u>CURRENT SITUATION:</u> Potable water consumption at NSAW comes from wells and a water treatment plant located on Ft Meade. The campus averages an annual potable water consumption of over 250,000,000 gallons and approximately 50 percent of that usage is from cooling tower makeup water for the buildings on West Campus and Central Campus. The potable water system is the single source of water that is required for the cooling towers which are part of the process to provide the essential cooling required for mission operations. The cooling systems at West Campus and Central Campus facilities, including critical facilities, rely upon water to provide critical cooling required for continuing their missions. The current arrangement provides a single source of water, meaning the system currently doesn't have the appropriate redundancy to ensure uninterrupted operations. Recently reclaimed water was brought on to the campus from the Howard County Reclaimed Water Pump Station located just west of the NSAW campus. Reclaimed water is successfully being used in the cooling towers serving new facilities located on East Campus. Cooling towers do not require the higher quality of water so they can use other water sources such as reclaimed water which has a much lower unit cost.</p> <p><u>IMPACT IF NOT PROVIDED:</u> Building cooling relies on cooling towers which require a constant source of makeup water. At the campus facilities, potable water is the only source of makeup water. If the potable water system fails or is shut down, cooling can no longer be provided and could force the shutdown of mission operations to prevent overheating. The current use of potable water represents a high cost of operation alternative. Since potable water is also for human consumption, the water must be highly treated which increases the unit cost of the water.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: ENERGY RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914:</p> <p>The NSA will apply a campus wide solution to provide a fully independent source of make-up water to mission-critical facilities and decrease its potable water consumption on the local aquifer through the installation of the Reclaimed Water Phase II system. This infrastructure will interconnect to the existing East Campus reclaimed water infrastructure network to enhance resiliency by providing reclaimed makeup water for mechanical cooling across its West and Central campuses, shifting existing potable water loads to a non-potable water source, lessening the demand on the aquifer. This project is essential to build mechanical cooling redundancy and energy and water resiliency as required to ensure the continued operations of critical Signals Intelligence (SIGINT) and Cybersecurity missions and priorities supported by the National Defense Strategy.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0

1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022	
3. INSTALLATION AND LOCATION  Fort Hood, Texas			4. PROJECT TITLE:  Power Generation and Microgrid		
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81122	7. PROJECT NUMBER  99143	8. PROJECT COST (\$000)  31,500		
<b>9. COST ESTIMATES</b>					
Item		U/M	Quantit y	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>					
Primary Power Generation, PV (CC81122)		KW	1,500	6,589.76	24,570 (9,890)
Primary Power Generation (CC81117)		KW	3,000	1,917.74	(5,760)
Battery Energy Storage System		KW	1,000	5,050	(5,050)
Microgrid Controls, Switchgear, Switches, and Breakers		LS	--	--	(2,030)
Building Information Systems, Integration, and Commissioning		LS	--	--	(550)
Transformers		LS	--	--	(430)
Environmental and Air Permitting		LS	--	--	(610)
Cybersecurity		LS	--	--	(250)
<b><u>SUPPORTING FACILITIES</u></b>					
Electric Service		LS	--	--	2,250 (1,450)
Water, Sewer, and Gas		LS	--	--	(240)
Site Improvements		LS	--	--	(360)
Demolition		LS	--	--	(200)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE					
SUBTOTAL					
CONTINGENCY (10%)					
TOTAL CONTRACT COST					
SUPERVISION, INSPECTION & OVERHEAD (5.7%)					
TOTAL REQUEST					
<b>TOTAL REQUEST (ROUNDED)</b>					
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)					
250					
<b>27,070</b>					
2,707					
<b>29,777</b>					
1,697					
<b>31,474</b>					
<b>31,500</b>					
0					
<b>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</b>					
<p>This project provides electricity to a cluster of multiple critical loads (2.12MW) and multiple non-critical loads (0.79MW) to serve a total of 2.9MW of load. The microgrid system will include 3MW of natural gas fueled reciprocating internal combustion engines (RICE), 1.5MW solar photovoltaic (PV) parking canopy array, 1MW battery energy storage system (BESS), automated switches required to isolate, island and blackstart the system, and microgrid controls. These pieces of equipment will connect to the 12.47kV distribution system. In non-emergency situations, the RICE will be disconnected and the solar will offset load on feeder 2. The isolating switches will isolate a portion of the grid on feeder 2 and 14. This will power multiple critical facilities as well as non-critical loads in the isolation. Once the system is engaged, these loads will continue to receive power from the installation distribution system as usual.</p>					
<p>The microgrid will be installed to operate as a stand-alone autonomous electrical power system with capability to provide data link connection to the installation monitoring and control system. The RICE will meet the basic requirement for dispatchable generation at any time as well as establish the voltage and frequency reference for the solar array. The solar array will assist the generators in meeting the power requirements during daylight hours, provide the installation with power daily, and shade vehicles from the sun. This solar generation, totaling 1.5MW AC, will be constructed on canopies above the parking lots behind Building 1001.</p>					

1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  Fort Hood, Texas			4. PROJECT TITLE:  Power Generation and Microgrid	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81122	7. PROJECT NUMBER  99143	8. PROJECT COST (\$000)  31,500	
11. REQUIREMENT: N/A                                  ADQT: N/A                                  SUBSTD: N/A				
<p><b>PROJECT:</b> Construct photovoltaic, natural gas, and battery energy power generation with microgrid for Phantom Warrior Central.</p> <p><b>REQUIREMENT:</b> Fort Hood is a mobilization and demobilization station for Army Reserve and National Guard units, a Power Projection Platform (PPP) and a primary active mobilization force generation installation (MFGI). It is also the Army’s premier Regional Collective Training Center, and the only post in the United States capable of stationing and training two armored divisions. Home to four brigade combat teams, Fort Hood has the ability to maintain up to 50,000 soldiers and has immediate access to 197,000 acres of maneuver training areas. Fort Hood has an average annual peak demand of 94.3 MW (2019 IEWP), and the mission critical load is 15.3 MW (2018 SRA). This project will support 2.12 MW of critical load or 14% of the total installation critical load.</p> <p>The microgrid will provide resiliency for multiple critical missions at Fort Hood for a minimum of 14 days through backup power generators, battery storage and new power generation. The microgrid will enable the continuity of mission command for critical commanders and staff in III Corps Headquarters (HQ), Garrison HQ, Network Enterprise Center (NEC), Directorate of Plans, Training, Mobilization and Security (DPTMS), Directorate of Emergency Services (DES), and the Blood Donor Center. Furthermore, the installation intends to use the solar to offset electric consumption/load, which will lower the Installation’s energy costs from the Renewable Energy Supply Agreement (RESA) and the Transmission and Distribution charges. The installation will use the BESS to shift electric consumption/load from high priced energy to low priced energy purchased under the RESA. The BESS will provide instantaneous responses to spikes or dips in the load, assist in blackstarting the system, and reduce demand. The distribution level control system will be capable of islanding for continuous power to support mission critical facilities.</p> <p><b>CURRENT SITUATION:</b> Fort Hood is unable to meet its resiliency requirement to sustain all of its mission critical facilities for 14 days. In the event of a short-term grid outage, the critical facilities in Phantom Warrior Central are equipped with numerous small back-up diesel generators. Fuel supplies for these generators provide only a few days of continuous operation without refueling, assuming average loading per the FY19 Security and Resilience Assessment. The bulk diesel stores onsite provide limited capability.</p> <p>Since the electrical and natural gas systems on Fort Hood were privatized under 10 U.S Code § 2688 in 2017, utility connections to the privatized electrical and natural gas systems are required. The Army intends to have the respective Utilities Privatization System Owner (UPSO) perform all necessary utility connections up to the facility service disconnect or other defined point of demarcation.</p> <p><b>IMPACT IF NOT PROVIDED:</b> The III Corps HQ ability to provide command and control of all assigned units at five installations would be at significant risk without this project. In addition, Fort Hood will be at significant risk for not being able to effectively perform other mission critical functions including those of the NEC HQ switch and Century Link, medical operations at the Robertson Blood Bank, various operations of the DPTMS, operations of Fort Hood HQ, and multiple DES facilities necessary for the recovery and restoration of Fort Hood’s infrastructure. There are existing deficiencies in generator coverage and the current cost of contingency power, to include the cost and resources needed to refuel diesel systems, without this project. The installation would be at risk from electrical interruptions without improved, longer-term energy resilience.</p>				



1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  Fort Hood, Texas			4. PROJECT TITLE:  Power Generation and Microgrid	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81122	7. PROJECT NUMBER  99143	8. PROJECT COST (\$000)  31,500	
12. SUPPLEMENTAL DATA:  a. Other Appropriations or Funding Sources (\$000):  b. Project Type: Energy Resilience  c. Rationale IAW 10 USC 2912:  The proposed microgrid will power multiple mission critical facilities with an estimated critical load of 2.12 MW at the Phantom Warrior Central campus. The project reduces risk by providing electricity to critical Logistics Readiness Center loads. PV and battery storage reduce fuel supply risk.				0
<hr/> Office of the Deputy Assistant Secretary of Defense (Environment & Energy Resilience) 703-843-0159				

1. COMPONENT Defense Wide - USAR	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  U.S. Army Reserve Conroe, Texas		4. PROJECT TITLE:  Power Generation and Microgrid		
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81122	7. PROJECT NUMBER  93347	8. PROJECT COST (\$000)  9,600	
<b>9. COST ESTIMATES</b>				
Item	U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>				
Primary Power Generation, PV (CC81122)	KW	750	4,265	<b>8,250</b> (3,200)
Backup Power Generation (CC81117)	KW	680	794	(540)
Battery Energy Storage System and Inverter	KW	750	1,066	(800)
Microgrid Controls and Distribution Switch	LS	--	--	(2,320)
Building Information Systems, Integration, and Commissioning	LS	--	--	(130)
Interconnection Agreement	LS	--	--	(160)
Cybersecurity	LS	--	--	(260)
<b><u>SUPPORTING FACILITIES</u></b>				
				<b>0</b>
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE				
SUBTOTAL				
CONTINGENCY (10%)				
TOTAL CONTRACT COST				
SUPERVISION, INSPECTION & OVERHEAD (5.7%)				
TOTAL REQUEST				
<b>TOTAL REQUEST (ROUNDED)</b>				
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)				
<b>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</b>				
Construct a carport mounted PV solar array with solar panels, mounts, inverters, transformers, controls and communication, AC/DC wiring with conduit, low voltage switchgear, and security measures. The PV system will be designed to utilize PV power on-site prior to feeding into the local grid. Ensure net metering and interconnection agreements are approved by the utility. Buildings at this site are Organizational Maintenance Shop (OMS), storage, hangers, administration, Global Simulation Capability (GSC), Canopy. Also, construct a microgrid system that will have full islanding capability. The microgrid system will incorporate a new carport mounted photovoltaic (PV) solar array, battery energy storage system (BESS), and natural gas backup generator systems, with load-balancing controllers to reduce fuel use. The microgrid system will include master microgrid controller, and an automated distribution switch to disconnect the Army Reserve Center from local electrical utility grid during grid outages.				
<b>11. REQUIREMENT: N/A</b>				
<b>ADQT: N/A</b>		<b>SUBSTD: N/A</b>		
<b><u>PROJECT:</u></b>				
This project will construct PV power generation and a microgrid at the U.S. Army Reserve Center, Conroe, TX.				
<b><u>REQUIREMENT:</u></b>				
The U.S. Army Reserve Center (ARC) is a critical facility and supports multiple facilities with approximately 110,000 square feet of mission critical operations for the 63rd Readiness Division. This project will directly and positively impact mission assurance of the 63rd Readiness Division by providing about 96% of its average annual energy consumption with on-site renewable energy generation, thereby ensuring continuity of operations and mission command during planning, alert,				

1. COMPONENT Defense Wide - USAR	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  U.S. Army Reserve Conroe, Texas			4. PROJECT TITLE:  Power Generation and Microgrid	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81122	7. PROJECT NUMBER  93347	8. PROJECT COST (\$000)  9,600	
<p>assembly, preparation and deployments of Soldiers in support of federal or state missions during emergencies. A BESS will provide electrical power resilience/quality in addition to the PV.</p> <p><u>CURRENT SITUATION:</u> The Reserve Center at Conroe supports the Army Reserve UH-60 Black Hawk medium lift transport aviation mission. The facility includes a large aviation pad, OMS, canopy, storage building, hangers and the associated supporting facilities to provide all required functions for typical ongoing aviation operations, training, and administration/drill hall. Operational elements that support flight operations – including flight administration and dispatch, flight planning, flight safety, mission command, flight crew supply, communications, maintenance, fire suppression, ground operations, and airframe wash down – are dispersed throughout the buildings that comprise the Conroe facility. This operational dispersion makes all buildings on the facility, except storage, essential for typical operations. In addition to normal training activities, the site served a support role during Hurricane Harvey and is anticipated to be used as a Federal Emergency Management Agency (FEMA) operations center for future Defense Support of Civil Authorities (DSCA) missions to include sheltering of civilians in a disaster. Future master plans include additional flight line operations through the purchase of additional land adjacent to the aircraft parking area. All buildings on the Conroe site are deemed critical to support mission needs. All functions at Conroe must be operational for emergencies and outages.</p> <p>Current average annual demand at the one meter at Conroe ARC is 1084 MWh consumed by the Training Center. Peak demand at the Training Center is 276 kW. The meter incurs demand charges. The Conroe ARC currently does not have on-site energy generation capability; it is fully reliant on the local utility grid. This reliance presents an energy security vulnerability to Conroe ARC’s critical missions</p> <p><u>IMPACT IF NOT PROVIDED:</u> Reliance on the local utility power grid will remain a significant vulnerability to critical ARC missions. Additionally, energy costs and consumption will remain unchanged without on-site renewable energy generation.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: ENERGY RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914:</p> <p>Conroe ARC is a critical facility based on the critical assets supported by the facility. OCAR/ARIMD vulnerability analysis lists this facility as critical. Conroe ARC is part of the 63rd Readiness Division and supports a total of approximately six facilities with approximately 110,000 square feet of mission critical operations. This project will directly and positively impact mission assurance of the 63rd Readiness Division by providing about 96% of its average annual energy consumption with on-site renewable energy generation, thereby ensuring continuity of operations and mission command during planning, alert, assembly, preparation, and deployments of Soldiers in support of federal or state missions during emergencies.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0

1. COMPONENT Defense Wide - Navy		<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022		
3. INSTALLATION AND LOCATION  NAVSUPPORT Hampton Roads Norfolk, Virginia				4. PROJECT TITLE:  Primary Distribution Substation			
5. PROGRAM ELEMENT  0904903D		6. CATEGORY CODE  81320	7. PROJECT NUMBER  P1335		8. PROJECT COST (\$000)  19,000		
<b>9. COST ESTIMATES</b>							
Item				U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>							<b>11,650</b>
Unit Substations (CC81320)				KV	60	176,667	(10,600)
Cybersecurity Features				LS	--	--	(100)
Special Costs				LS	--	--	(600)
Operation & Maintenance Supplemental Information (OMSI)				LS	--	--	(350)
<b><u>SUPPORTING FACILITIES</u></b>							<b>4,020</b>
Site Preparations				LS	--	--	(310)
Special Foundation Features				LS	--	--	(450)
Paving and Site Improvements				LS	--	--	(1,090)
Anti-Terrorism/Force Protection				LS	--	--	(60)
Electrical Utilities				LS	--	--	(1,890)
Mechanical Utilities				LS	--	--	(220)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE							0
SUBTOTAL							<b>15,670</b>
CONTINGENCY (10%)							1,567
TOTAL CONTRACT COST							<b>17,237</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)							983
DESIGN/BUILD – DESIGN COST (4%)							689
TOTAL REQUEST							<b>18,909</b>
<b>TOTAL REQUEST (ROUNDED)</b>							<b>19,000</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)							0
<b>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</b>							
<p>Replace Substation with Transformers and Switchgear at NH-95. The unit replacement requires the existing NH-95 site fence line to be relocated and adjacent road to be realigned. Remove the existing fence, modify the existing road, and remove parking. Provide temporary substations during construction. Provide new road, curbing gutters, security fence and gates, modify existing parking lot, provide new parking to offset the loss at an adjacent location. Includes all signage, temporary security requirements and other miscellaneous items. Demolish existing units when new units are complete. Facility-related control systems include cybersecurity features in accordance with current DoD criteria. This project will repair/replace leaking transformers, bushings, switchgear, primary and secondary duct banks with required cabling and structure. During construction, temporary support for the individual systems are required. Systems must remain operational when components are offline for repairs. The temporary support may require evaluation to determine requirements for uninterrupted service.</p>							
<b>11. REQUIREMENT: N/A</b>							
		ADQT: N/A		SUBSTD: N/A			
<b><u>PROJECT:</u></b>							
This project replaces a substation, four transformers, and switchgear to create redundant unit pairs capable of carrying full electrical loads.							
<b><u>REQUIREMENT:</u></b>							
The Maritime Operations Center (MOC) provides critical service and command operations to the Atlantic Fleet working operationally out of Building NH-95. These substations are required to provide redundancy backup electrical service to critical loads for the MOC and other operational support of the missions in NH-95.							

1. COMPONENT Defense Wide - Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  NAVSUPPORT Hampton Roads Norfolk, Virginia			4. PROJECT TITLE:  Primary Distribution Substation	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81320	7. PROJECT NUMBER  P1335	8. PROJECT COST (\$000)  19,000	
<p><u>CURRENT SITUATION:</u> These substations provide electrical service for the MOC. The substations provide various levels of service including redundancy and capacity loading. The substations are old (1970-1975) and past their expected life (estimated +/- 35 years). Replacement parts are proving to be difficult, if not impossible to find, and repair time is increasing because of equipment wear and age fatigue. The wear on the equipment places a danger to all maintenance personnel because of the inherent arc flash hazards associated with equipment that no longer performs as specified by the manufacturer. Of note in 2019/2020, Units K and then G had unanticipated failures and this gives cause and reason that this may occur to other old units without warning or detection.</p> <p><u>IMPACT IF NOT PROVIDED:</u> Failure creates immediate loss of this provisional service and puts at risk those loads serviced by the equipment. Loss can overload redundancy in the old equipment thus fostering further permanent damage or total failure of equipment in the electrical distribution system. Most importantly, equipment used to service loads in the MOC can fail and not be replaced. Immediate replacement of the equipment is not possible because of the equipment arrangement, and lag in construction (non-standard items- usually custom built) to include the number of service feeders. Maintenance of old faltering equipment requires full time technician's observance of operation of the NH-95 stand-by generators to avoid failure.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: Energy Resilience</p> <p>c. Rationale IAW 10 USC 2914:</p> <p>The MOC provides critical service and command operations to the Atlantic Fleet working operationally out of NH-95. These substations are required to provide redundancy backup electrical service to critical loads for the MOC and other operational support of the missions in NH-95. This will create a "true" redundancy of this project's unit pairs so that if one unit goes down or is brought down for maintenance the other unit in the pair carries the full load.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022	
3. INSTALLATION AND LOCATION NAVSUPPACT Hampton Roads Norfolk, Virginia			4. PROJECT TITLE: Backup Power Generation		
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81330	7. PROJECT NUMBER  P1401	8. PROJECT COST (\$000)  3,400		
9. COST ESTIMATES					
Item		U/M	Quantity	Unit Cost	Cost (\$000)
<b>PRIMARY FACILITIES</b>					<b>2,620</b>
Backup Power Generation and Paralleling Controls (CC81330)		KV	14	175,000	(2,450)
Joint Use Intelligence Center Renovation (CC14380)		SF	84,994	1.01	(90)
Information Systems		LS	--	--	(20)
Special Costs		LS	--	--	(50)
Operation & Maintenance Supplemental Information (OMSI)		LS	--	--	(10)
<b>SUPPORTING FACILITIES</b>					<b>170</b>
Site Preparations		LS	--	--	(30)
Demolition		LS	--	--	(60)
Anti-Terrorism/Force Protection		LS	--	--	(30)
Electrical Utilities		LS	--	--	(50)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE					0
SUBTOTAL					<b>2,790</b>
CONTINGENCY (10%)					279
TOTAL CONTRACT COST					<b>3,069</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)					175
DESIGN/BUILD – DESIGN COST (4%)					123
TOTAL REQUEST					<b>3,367</b>
<b>TOTAL REQUEST (ROUNDED)</b>					<b>3,400</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)					0
10. DESCRIPTION OF PROPOSED CONSTRUCTION: This project renovates the Joint Use Intelligence Center (NH139) and replaces the emergency generator and paralleling controls, replaces two of the uninterrupted power source (UPS) system back-ups and associated panels, and provides new mounting pads. Project will replace programmable logic controller (PLC) including latest software programs, PLC bases and processors, and create PLC redundancy. Project adds automatic transfer switch (ATS) status to distributed input/output (DIST I/O), updates human machine interfaces (HMI) communications and Ethernet protocols to current software, provides operational manuals, testing, and training on use and processing, provides new batteries, generator, generator engine and utility controls with protection, replaces two aged (past useful life) UPSs and provides a much needed communication/alarm link to NH95 for power system failure or events. Project implements current antiterrorism measures and security requirements. Project provides demolition, installation, testing, and commissioning of all work.					
11. REQUIREMENT: N/A                      ADQT: N/A                      SUBSTD: N/A					
<u>PROJECT:</u> Project upgrades and makes repairs to NH139 Emergency Generator/Paralleling Controls and replaces two of the UPS system back-ups and associated panels.					
<u>REQUIREMENT:</u> This project improves energy resilience. NH139 services the Atlantic Fleet with facility space and supports critical missions of the tenant agency. The Public Works Directorate (PWD) Naval Support Activity (NSA) Hampton Roads (HR) is repairing and upgrading NH139 to meet tenant needs and requirements, to address failing or faltering systems, and to maintain NH139					

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. Date Mar 2022
3. INSTALLATION AND LOCATION  NAVSUPPACT Hampton Roads Norfolk, Virginia			4. PROJECT TITLE:  Backup Power Generation	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81330	7. PROJECT NUMBER  P1401	8. PROJECT COST (\$000)  3,400	
<p>facility readiness.</p> <p><u>CURRENT SITUATION:</u> NH139 emergency generator, the paralleling controls, and portions of the UPS back-up system are past useful life requiring upgrade/replacement. PLC's are failing and past their useful life, requiring replacement. Building lacks a communication link to NH95 to alert facility technicians, who are located at NH95, of any system issues or failure. NH139 suffers from an aging control system, lack of UPS reliability, failing generator, and failing PLCs that are aging and past their useful life. NH139 also lacks an alarm system communication link to NH95 for technicians in the event of issues or failure.</p> <p><u>IMPACT IF NOT PROVIDED:</u> Power interruptions and failures will continue, bringing risk to critical NH139 tenant agency missions.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: ENERGY RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914:  This project will provide adequate facilities and service, repair, and upgrade NH139 to address failing or faltering electrical backup systems. Operations occurring at Building NH139 service the Atlantic Fleet for critical missions.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0

1. COMPONENT Defense Wide - NGA		<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>				2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Fort Belvoir Springfield, Virginia			4. PROJECT TITLE:  Chilled Water Redundancy			
5. PROGRAM ELEMENT  0904903D		6. CATEGORY CODE  8132	7. PROJECT NUMBER  NGA - 040		8. PROJECT COST (\$000)  1,100	
9. COST ESTIMATES						
Item			U/M	Quantity	Unit Cost	Cost (\$000)
<u><b>PRIMARY FACILITIES</b></u> Chilled Water Piping (CC8132)			LF	1,120	803.57	<b>900</b> (900)
<u><b>SUPPORTING FACILITIES</b></u> Commissioning			LS	--	--	<b>10</b> (10)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE						0
SUBTOTAL						<b>910</b>
CONTINGENCY (5%)						46
TOTAL CONTRACT COST						<b>956</b>
SUPERVISION, INSPECTION & OVERHEAD (5.7%)						54
DESIGN/BUILD – DESIGN COST (4%)						38
TOTAL REQUEST						<b>1,048</b>
<b>TOTAL REQUEST (ROUNDED)</b>						<b>1,100</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)						0
10. DESCRIPTION OF PROPOSED CONSTRUCTION: Project provides for appropriate N+1 configuration for the existing chill water supply to NGA Campus East (NCE) data center/technology center. This is accomplished by installing overhead piping through the facilities from the Central Utility plant (CUP) to a designated mechanical room in the Technology Center (TC). The general provisioning infrastructure allowing for future chill water piping pathways to the data center has already been laid out in the initial construction of the facility. Future piping will run in parallel operations with existing piping system.						
11. REQUIREMENT: N/A						
ADQT: N/A		SUBSTD: N/A				
<u>PROJECT:</u> This project reconfigures the existing chill water-cooling network by installing additional overhead supply and return piping.						
<u>REQUIREMENT:</u> This supports a continuous data center equipment cooling service in support of critical operational functions during scheduled and unscheduled maintenance activities or system failure events. Establishing an N+1 cooling configuration with multiple points of failure is essential for continuity of operations at NCE. Resiliency of the campus's data center cooling system must be improved by creating a parallel, multiple point of failure system to maintain capabilities to the end users during potential unexpected equipment maintenance activities or critical failure events.						
<u>CURRENT SITUATION:</u> During potential critical maintenance or equipment failure events, cooling capacity to the data/technology center at NCE is partially or completely interrupted. Currently no viable temporary mitigation measures are implemented to keep these critical operations functioning during the duration of the maintenance/failure activity.						



1. COMPONENT Defense Wide - NGA	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Fort Belvoir Springfield, Virginia			4. PROJECT TITLE:  Chilled Water Redundancy	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  8132	7. PROJECT NUMBER  NGA - 040	8. PROJECT COST (\$000)  1,100	
<u>IMPACT IF NOT PROVIDED:</u> NCE may lose partial or full cooling potential to data center operations in the event of a failure at any point along the subterranean chill water piping system				
12. SUPPLEMENTAL DATA:  a. Other Appropriations or Funding Sources (\$000):  b. Project Type: ENERGY RESILIENCE  c. Rationale IAW 10 USC 2914:  Project will provide continuous data center equipment cooling service in support of critical operational functions during scheduled and unscheduled maintenance activities or system failure events. Establishing an N+1 cooling configuration with multiple points of failure is essential for continuity of mission critical operations at NCE.  Office of the Deputy Assistant Secretary of Defense (Environment & Energy Resilience) 703-843-0159				0

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Camp Lemonnier Djibouti			4. PROJECT TITLE:  Enhanced Energy Security and Control Systems	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  89050	7. PROJECT NUMBER  P950	8. PROJECT COST (\$000)  24,000	
<b>9. COST ESTIMATES</b>				
Item	U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>				
Communications Infrastructure (CC89050)	LF	33,144	92.91	17,360 (3,080)
Operations Center & Integration (CC89051)	SF	200	4,509.45	(900)
Energy Conservation Measures	LS	--	--	(6,590)
Information Systems	LS	--	--	(720)
Built-In Equipment	LS	--	--	(4,930)
Special Costs	LS	--	--	(920)
Operation & Maintenance Supplemental Info (OMSI)	LS	--	--	(220)
<b><u>SUPPORTING FACILITIES</u></b>				
Special Construction Features	LS	--	--	1,130 (1,120)
Site Preparations	LS	--	--	(10)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE				0
<b>SUBTOTAL</b>				<b>18,490</b>
CONTINGENCY (10%)				1,849
<b>TOTAL CONTRACT COST</b>				<b>20,339</b>
SUPERVISION, INSPECTION & OVERHEAD (SIOH) (6.5%)				1,332
DESIGN/BUILD – DESIGN COST (10%)				2,034
<b>TOTAL REQUEST</b>				<b>23,695</b>
<b>TOTAL REQUEST (ROUNDED)</b>				<b>24,000</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)				0
<b>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</b>				
<p>This project installs and integrates secured Facility Related Controls System (FRCS), cyber secures and integrates existing FRCSs, and designs and builds several energy conservation measures (ECMs) for Camp Lemonnier, Djibouti (CLDJ) to reduce fuel consumption and O&amp;M costs at the Prime Power plant in CLDJ. This project also will repair and modernize various existing facilities for the purpose of energy savings and reducing maintenance costs. The project includes a Building Control System and retro-commissioning of multiple buildings. Utility Control System work includes installing monitoring and control equipment at water tanks water wells and wastewater lift stations. The project updates the Human Machine Interface (HMI) screens to reflect the system changes/upgrades; to share monitoring records; and to allow specialized personnel to identify discrepancies and/or abnormal operations. This project will install duct bank with fiber optic cable, modify existing fiber cabling to create a secure network infrastructure with all hardware, cabling, tubing, and terminations. It will also install copper cabling for cabling within buildings and create a Work Desk within facility 604, to include work-station environmental controls, equipment, and ICS staff working space.</p> <p>ECMs will implement lighting and lighting controls; install programmable thermostats; install ventilation system upgrades; perform electrical load balancing at multiple buildings on panelboards; install water equipment upgrades at multiple buildings, including assessing and providing energy efficient pumping equipment, increasing the efficiency by repair of the solar hot water system, and evaluating and reducing the domestic hot water system for appropriate size; install building envelope upgrades at multiple buildings to include weather stripping windows and doors; and install Advanced Metering Infrastructure electric metering upgrades at multiple buildings.</p>				

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Camp Lemonnier Djibouti			4. PROJECT TITLE:  Enhanced Energy Security and Control Systems	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  89050	7. PROJECT NUMBER  P950	8. PROJECT COST (\$000)  24,000	
11. REQUIREMENT: N/A                                      ADQT: N/A                                      SUBSTD: N/A				
<p><u>PROJECT:</u> This project will install and integrate FRCS, cyber-secure existing FRCS, and repair and modernize various existing facilities for the purpose of energy savings.</p> <p><u>REQUIREMENT:</u> CLDJ is a forward operating site and the primary base of operations for U.S. Africa Command in the Horn of Africa. Its location also has strategic significance for U.S. Central Command, U.S. Transportation Command, U.S. Special Operations Command, and other mission support functions. CLDJ is a strategic global posture supporting various classified air operations.</p> <p>The project provides reliability in the form of cyber secure FRCS, with the facility to monitor and respond to outages and power quality issues quicker, ensuring less interruption in mission. This project improves energy resilience, decreases utility costs, and increases Navy's climate resilience. Energy security is especially important for CLDJ, given its isolated location and complete self-reliance for electric power production. This project will reduce the energy intensity for each affected facility, reduce occupancy comfort issues, and provide for an environment of peak performance to meet varying demand loads from these facilities. It will produce savings in energy consumption, fuel consumption and will also result in lower maintenance costs both at the Prime Power Plant and other facilities. Modern and secured system operations are required to provide immediate notification when systems fail, streamline, assist, and expedite the process of identifying system failures, and reduce time in the field troubleshooting and scoping repairs. This project will provide cybersecurity by performing the Risk Management Framework process for the systems as required in the Joint Letter "Cybersecurity Tasking for Ashore Control Systems, Serial 2".</p> <p><u>CURRENT SITUATION:</u> Initially, Camp Lemonnier was intended to be a temporary installation; therefore, many of the buildings were built for economy instead of longevity and energy efficiency. The site is hot and humid most of the year. The hot season begins in June and lasts through the beginning of September. Average daily high temperatures during the hot season are above 38.3 degrees Celsius (101 degrees Fahrenheit). The cool season lasts from November through December with an average daily high temperature of 31.1 Celsius (88 degrees Fahrenheit). Due to the high temperatures and humidity, near constant air conditioning is required for basic comfort. The combination of energy inefficient buildings, high-cost electricity generation, onsite water purification, and extreme climate results in high costs for energy use. Camp Lemonnier generates its own power using diesel generators. There is no supplementary connection to an off-base electric distribution grid. The camp purifies underground water reserves for all water supply needs through the process of reverse osmosis, which requires significant energy use. CLDJ presently has some facility systems that are functional, but are not fully interconnected, are not maximizing efficiency, and periodically breakdown which impacts facility missions. The existing direct digital controls and locations do not have sufficient points to adequately monitor and control all HVAC systems, as well as enough points to control lighting. There is no common fiber optic network loop for control systems. Due to cyber security requirements, the existing systems do not meet compliance requirements in order to continue operations.</p> <p><u>IMPACT IF NOT PROVIDED:</u> The installation will continue to pay high amounts for the electricity used on the installation. The inability to reduce energy use of facilities results in lower energy security. Meeting various energy reduction goals will not be realized and fuel consumption and O&amp;M costs will not be reduced. This project will reduce CLDJ's energy intensity. Improvements in monitoring and control of building systems through the upgrade of controls in facilities will not be realized. The continuous commissioning of the facilities by continuously monitoring the operations and the status/condition of the building equipment and performing data analytics to identify and predict equipment malfunctions will not be possible. Therefore, the benefits</p>				

1. COMPONENT Defense Wide – Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Camp Lemonnier Djibouti			4. PROJECT TITLE:  Enhanced Energy Security and Control Systems	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  89050	7. PROJECT NUMBER  P950	8. PROJECT COST (\$000)  24,000	
<p>resulting from re-commissioning will start to diminish rapidly after three to four years going to zero benefits within 10 years. The integration of the different operation systems into a common system, establishing a common database, developing analytics and dashboards, and developing a standard graphical interface will not occur. As a result, the Navy will not be able to reduce system losses, accurately understand the need for system upgrades to meet increasing loads, and reduce the need for maintenance. The Navy will not be able to respond to service outages much faster, reduce the number of tenants/customers impacted by the outages that occur, or be able to avoid service outages.</p>				
12. SUPPLEMENTAL DATA:  a. Other Appropriations or Funding Sources (\$000):  b. Project Type: ENERGY CONSERVATION  c. Estimated Energy Conservation data: (1) Expected Savings-to-Investment Ratio: (2) Simple Payback Estimate: (3) Measurement & Verification (M&V) Cost: (4) M&V Plan: Utilize the smart grid to analyze and report savings (5) M&V Planned Funding Source: OMN  Office of the Deputy Assistant Secretary of Defense (Environment & Energy Resilience) 703-843-0159				0    2.32 6.9 years \$600,000

1. COMPONENT Defense Wide - Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022	
3. INSTALLATION AND LOCATION NAVBASE Guam - Joint Region Marianas Guam			4. PROJECT TITLE: Electrical Distribution System		
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81232	7. PROJECT NUMBER  P806	8. PROJECT COST (\$000)  34,360		
<b>9. COST ESTIMATES</b>					
Item		U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b>					<b>15,280</b>
Distribution System (CC81232)		LF	7,055	2,018.43	(14,240)
Special Costs		LS	--	--	(810)
Operation & Maintenance Supplemental Information (OMSI)		LS	--	--	(220)
Sustainability and Energy Features		LS	--	--	(10)
<b><u>SUPPORTING FACILITIES</u></b>					<b>11,530</b>
Site Preparations		LS	--	--	(2,370)
Electrical Utilities		LS	--	--	(7,330)
Mechanical Utilities		LS	--	--	(910)
Environmental Mitigation		LS	--	--	(920)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE					0
SUBTOTAL					<b>26,810</b>
CONTINGENCY (10%)					2,681
TOTAL CONTRACT COST					<b>29,491</b>
SUPERVISION, INSPECTION & OVERHEAD (6.5%)					1,917
DESIGN/BUILD – DESIGN COST (10%)					2,949
TOTAL REQUEST					<b>34,357</b>
<b>TOTAL REQUEST (ROUNDED)</b>					<b>34,360</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)					0
<b>10. DESCRIPTION OF PROPOSED CONSTRUCTION:</b>					
<p>Project constructs a new electrical distribution system connecting Polaris Point to Orote Power Plant. The scope of work includes design and construction of: approximately 2,575 feet of new electrical duct bank from the new Polaris Point Substation (P-676) to the East side disconnect switch at Polaris Point, approximately 1,230 feet of horizontal directional drill duct bank to the West side disconnect switch (Lima Wharf), and approximately 3,250 feet of new duct bank from west side disconnect switch to Ship Retrofit Facilities (SRF) substation. The distribution system includes new underground cables, pad-mounted transformers, pad mounted high Fire Point Insulated liquid-filled switchgears equipped with Vacuum Fault Interrupter (VFI) with Supervisory Control and Data Acquisition (SCADA) provision, concrete encased conduits, counterpoise ground wires, primary manholes, equipment concrete pad, and equipment grounding system. The improvements include installation of a dedicated 4 MW of emergency/standby back up power generation and SCADA to create a microgrid between Polaris Point and Orote at building 309 Orote Power Plant. Special costs include Post Construction Contract Award Services (PCAS) and cybersecurity commissioning for OMSI is included. Electrical Utilities include power/communication duct bank, facility power connection, electrical grounding, PVC conduit, SCADA control of electrical distribution with Human Machine Interface (HMI) and accessories and two multi-way oil type medium voltage pad mounted isolation switches. Mechanical Utilities include fuel tanks that can replenish each generator (2 MW each) daily and associated lines, tie-ins, new diesel fuel storage tanks, emission control equipment, load bank, remote radiators and lube tank.</p>					
<b>11. REQUIREMENT: N/A</b>					
		ADQT: N/A		SUBSTD: N/A	
<b><u>PROJECT:</u></b>					
This project constructs an electrical distribution system loop to enable microgrid islanding capability, maintain power to critical port operation missions, and provide operational flexibility for power generation and fuel storage.					

1. COMPONENT Defense Wide - Navy	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  NAVBASE Guam - Joint Region Marianas Guam			4. PROJECT TITLE:  Electrical Distribution System	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81232	7. PROJECT NUMBER  P806	8. PROJECT COST (\$000)  34,360	
<p><u>REQUIREMENT:</u> This project improves energy resilience, decreases utility costs, increases Navy’s climate resilience, and reduces Navy’s effect on climate change. This project aligns with ERCIP requirements to improve power and energy reliability and resiliency by directly providing a redundant source of power for Polaris Point and Naval Base Guam (NBG) by improving power quality and upgrades to the electrical power distribution system to meet mission requirements. Any additional generation that can be installed as part of this project will help increase power resilience by providing additional backup in the event of an outage.</p> <p><u>CURRENT SITUATION:</u> At Polaris Point and NBG, grid-wide frequency drops and voltage spikes/sags are adversely affecting the mission. In addition, the existing power plant generators at Orote substation are undersized and incapable of supplying reliable backup power to Polaris Point during utility power outages utilizing the current distribution system.</p> <p><u>IMPACT IF NOT PROVIDED:</u> Unexpected power outages and/or power quality issues, will continue to effect Polaris Point resulting in an immediate stoppage of mission critical activities. Failure to provide this project would be inconsistent with DoD policy, which states, components shall take necessary steps to ensure energy resilience on military installations.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: ENERGY RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914:</p> <p style="padding-left: 40px;">This project aligns with ERCIP requirements to improve power and energy reliability and resiliency by directly providing a redundant source of power for Polaris Point and NBG by improving power quality and upgrades to the electrical power distribution system to meet mission requirements.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0

1. COMPONENT Defense Wide - DoDEA		<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022		
3. INSTALLATION AND LOCATION  Kadena Air Base Japan				4. PROJECT TITLE:  Lighting Upgrades			
5. PROGRAM ELEMENT  0904903D		6. CATEGORY CODE  730787	7. PROJECT NUMBER  PACE21013		8. PROJECT COST (\$000)  780		
9. COST ESTIMATES							
Item				U/M	Quantity	Unit Cost	Cost (\$000)
<b><u>PRIMARY FACILITIES</u></b> Replace Lighting (CC 730787)				SF	157,263	4.07	<b>640</b> (640)
<b><u>SUPPORTING FACILITIES</u></b>							<b>0</b>
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE							0
SUBTOTAL							<b>640</b>
CONTINGENCY (10%)							64
TOTAL CONTRACT COST							<b>704</b>
SUPERVISION, INSPECTION & OVERHEAD (6.5%)							46
DESIGN/BUILD – DESIGN COST (4%)							28
TOTAL REQUEST							<b>778</b>
<b>TOTAL REQUEST (ROUNDED)</b>							<b>780</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)							0
10. DESCRIPTION OF PROPOSED CONSTRUCTION: This project replaces the lighting at multiple Kadena High School buildings with dimmable LED luminaires. The project scope includes removal and disposal of all existing overhead light fixtures in office spaces, classrooms, restrooms, hallways/corridors, information center, cafeteria, kitchen, storage rooms, and all other occupied spaces.							
11. REQUIREMENT: N/A                      ADQT: N/A                      SUBSTD: N/A							
<b><u>PROJECT:</u></b> This project will replace the lighting at Kadena High School with dimmable LED luminaires to conserve energy and deliver savings.							
<b><u>REQUIREMENT:</u></b> Modernize existing buildings' lighting to reduce overall energy consumption.							
<b><u>CURRENT SITUATION:</u></b> The existing lighting installed at Kadena High School is in poor condition. The lighting uses outdated T-8 fluorescent technology which requires significant efforts to operate and maintain. The existing lighting levels are substandard and do not meet current UFC requirements.							
<b><u>IMPACT IF NOT PROVIDED:</u></b> The substandard environment will continue to hamper the educational program for students. The required maintenance and repair of expired and failing systems will continue to strain maintenance capabilities and budgets. If not funded, an anticipated energy savings of 125,000 kwh per year will not be realized.							

1. COMPONENT Defense Wide - DoDEA	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Kadena Air Base Japan			4. PROJECT TITLE:  Lighting Upgrades	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  730787	7. PROJECT NUMBER  PACE21013	8. PROJECT COST (\$000)  780	
<b>12. SUPPLEMENTAL DATA:</b>				
a. Other Appropriations or Funding Sources (\$000): b. Project Type: ENERGY CONSERVATION c. Estimated Energy Conservation data: (1) Expected Savings-to-Investment Ratio: (2) Simple Payback Estimate: (3) Measurement & Verification (M&V) Cost: (4) M&V Plan: Measurement and Verification (if required) will be in accordance with the International Performance Measurement and Verification Protocol (IPMVP) utilizing Option A, Retrofit Isolation Approach, as described in the Measurement and Verification Guidelines for Federal Energy Projects. (5) M&V Planned Funding Source: Construction Contract				0      1.58 14 years 0
Office of the Deputy Assistant Secretary of Defense (Environment & Energy Resilience) 703-843-0159				



1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022	
3. INSTALLATION AND LOCATION  Camp Arifjan Kuwait			4. PROJECT TITLE:  Power Generation and Microgrid		
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81122	7. PROJECT NUMBER  94849	8. PROJECT COST (\$000)  26,850		
9. COST ESTIMATES					
Item		U/M	Quantity	Unit Cost	Cost (\$000)
<b>PRIMARY FACILITIES</b>					<b>18,515</b>
Primary Power Generation, PV (CC81122)		KW	1,250	3,074	(3,500)
Electrical Switching Stations (CC81350)		KV	11	827,278	(9,000)
Battery Energy Storage System		LS	--	--	(800)
Distribution Line		LS	--	--	(2,900)
Microgrid Controls and Switchgear		LS	--	--	(1,200)
Distribution Line		LS	--	--	(900)
Building Information Systems		LS	--	--	(15)
Cybersecurity		LS	--	--	(200)
<b>SUPPORTING FACILITIES</b>					<b>4,400</b>
Electric Service		LS	--	--	(4,400)
PRIVATIZED UTILITY CONNECTION AND SERVICE FEE					0
SUBTOTAL					<b>22,915</b>
CONTINGENCY (10%)					2,292
TOTAL CONTRACT COST					<b>25,207</b>
SUPERVISION, INSPECTION & OVERHEAD (6.5%)					1,638
TOTAL REQUEST					<b>26,845</b>
<b>TOTAL REQUEST (ROUNDED)</b>					<b>26,850</b>
OTHER APPROPRIATIONS OR FUNDING SOURCES (NON ADD)					0
10. DESCRIPTION OF PROPOSED CONSTRUCTION: Install a grid tie from Zone 4 Power Plant (Z4PP) with an underground feeder electric cable conductor feed from Z4PP to Theater Intelligence Platform-Central (TIP-C) then continuing to Main Communications Facility (MCF) Signal Compound to power critical facilities. Install rooftop mount solar photovoltaic (PV) array, and 1.0 MW/2.0 MWH battery energy storage system (BESS). Install Automatic Transfer Switches and microgrid controls. Install electric meters at facilities and PV systems. Upgrade zone 4 power plant generator controls with microgrid controls to incorporate solar PV and battery storage with BESS controller. This project will also make provisions for a new 10 MW dedicated feeder line from Z4PP to the new Host Nation zone 4 substation, and install a 11kV distribution line from Z4PP to TIP-C compound and continue on to the MCF signal compound. Install new dual feed substations at both TIP-C and MCF Signal Compound, 11kV to 415/230V transformers, breakers and switchgear.					
11. REQUIREMENT: N/A                      ADQT: N/A                      SUBSTD: N/A					
<u>PROJECT:</u> Installs solar Photovoltaics, dual-feed substations, and a BESS at critical facilities in TIP-C and MCF.					
<u>REQUIREMENT:</u> Critical loads at Camp Arifjan are required for 24/7 operations, and this system would cover a major portion of these loads with improved resilient power supply architecture for two critical facility compound areas: (1) The TIP-C compound and (2) The MCF signal compound. It will install new dual feed substations at both TIP-C and MCF Signal Compounds connecting them to Host Nation power and Zone 4.					

1. COMPONENT Defense Wide - Army	<b>FY 2023 ENERGY RESILIENCE AND CONSERVATION MILITARY CONSTRUCTION PROJECT DATA</b>			2. DATE Mar 2022
3. INSTALLATION AND LOCATION  Camp Arifjan Kuwait			4. PROJECT TITLE:  Power Generation and Microgrid	
5. PROGRAM ELEMENT  0904903D	6. CATEGORY CODE  81122	7. PROJECT NUMBER  94849	8. PROJECT COST (\$000)  26,850	
<p><u>CURRENT SITUATION:</u> The US Army-owned central generation plant is providing redundant and resilient power to these critical facilities. Both compounds are powered by aged and failing diesel generators which will continue to allow for electricity costs to remain unnecessarily high and dependent on truck-delivered diesel fuel. Maintenance calls will remain frequent, and replacement parts for older gensets will be harder to find and critical missions will be compromised in case of fuel shortages. The Z4PP currently consists of six diesel gensets rated at 1,000 kW each, and serves multiple mission essential facilities with total load of 2.4 MW. Most essential missions are on the Host Nation power grid, receive Assistance-in-Kind power, and have conventional diesel genset back-up power. Host Nation grid power does not meet 8 months of summer demand and the gap is filled by spot diesel generation, resulting in lack of resiliency and high costs for diesel purchase and generator rental. In addition, two major facilities with large electric loads, TIP-C and MCF compounds, are not currently connected to the Host Nation grid. Currently, both TIP-C and MCF are served primary power and backup power by diesel generators. TIP-C and MCF are critical facilities and large consumers of diesel and lack resiliency.</p> <p><u>IMPACT IF NOT PROVIDED:</u> Army facility operations will continue to require and be dependent upon truck-delivered diesel fuel. Electricity costs will remain unnecessarily high. Existing genset replacement parts will be harder to find and equipment maintenance will steadily increase. Host Nation power and fuel supply interruptions will compromise critical missions. Grid management issues will remain unchanged. Critical facilities will require spot generation, require significant maintenance, and will lack resiliency.</p>				
<p>12. SUPPLEMENTAL DATA:</p> <p>a. Other Appropriations or Funding Sources (\$000):</p> <p>b. Project Type: ENERGY RESILIENCE</p> <p>c. Rationale IAW 10 USC 2914:</p> <p>Camp Arifjan requires resilient power supply architecture for 24/7 operations. This new system will provide significant cost savings and resiliency benefits. It will provide redundant grid-tie feeds to the critical facilities. With a new dedicated feed between the two most critical compounds outlined in the detailed project description, islanding for any possible lengthy Host Nation grid outages will be much more simplified and faster than utilizing existing distribution feeders/substations/Utility Distribution Systems.</p> <p>Office of the Deputy Assistant Secretary of Defense (Environment &amp; Energy Resilience) 703-843-0159</p>				0