MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A
DEPARTMENT OF THE ARMY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEARS 1988/1989

PROCUREMENT APPROPRIATIONS-CONSTRUCTION PROGRAM

SUBMITTED TO CONGRESS

JANUARY 1987

DD FORMS 1391

AD-A184 209

DTIC ELECTED SEPD SEP 1 6 1987
## APPROPRIATION: Procurement of Missiles, Army

<table>
<thead>
<tr>
<th>Installation</th>
<th>Project No.</th>
<th>Project Title</th>
<th>Cost Estimate ($000)</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redstone Arsenal, Alabama</td>
<td>8822290-1</td>
<td>Modernization, Propellant Deaeration</td>
<td>1.250</td>
<td>2</td>
</tr>
<tr>
<td>Redstone Arsenal, Alabama</td>
<td>8822290-2</td>
<td>Modernization, Small Motor Finishing</td>
<td>1.850</td>
<td>6</td>
</tr>
</tbody>
</table>
This project provides a propellant deaeration building for efficient production of solid rocket motors. It replaces facilities which were designed in 1938-1942 for making artillery shells.

This project is for the replacement of a building that provides the mechanical air removal from propellant prior to its casting into rocket motors. It also provides a support area for the clean up of equipment used in the casting process. The building is designed for 1.1 hazard class propellant and complies with intraline building spacing and revetment protection safety requirements.
REQUIREMENT:
This facility is required in close proximity to the rocket motor casting operation. It provides a preparation area for both propellant and equipment to assure quality of the product, cleanliness of equipment and safety during the casting process. The current facility has deteriorated to a point where it is no longer feasible to repair it to meet safety and efficiency standards. The newer 1.1 hazard class propellants required for present and future tactical rocket motors demand higher safety standards and are not compatible with current 1.3 hazard class propellants. Increased safety requirements for 1.1 class propellants specified in AMCR 385-100 will be met with the new facility.

CURRENT SITUATION:
Rocket motor manufacturing and loading is now being performed in buildings designed for artillery shell loading in 1938-1942. Some additional facilities were provided in the late 1950's. They were designed for 1.3 hazard type propellants. The new 1.1 hazard type propellant has more demanding building safety requirements, greater spacing between buildings, and is not compatible with present 1.3 hazard type propellant. The present building has deteriorated to a point where it is no longer economically feasible to maintain it to sustain a safe production capability for small rocket motors.

IMPACT IF NOT PROVIDED:
If not provided the current facility will require extensive above normal maintenance and will require evaluation for safety waivers to remain a useful production facility. Production efficiencies resulting from balanced production line capacity will not be realized. Ultimately the current facility will not be able to provide the temperature and atmospheric controls necessary to produce 1.1 class propellant.

ADDITIONAL:
This project is part of a modernization program begun in 1985 to provide upgrade the government owned capability to produce small rocket motors.
rocket systems require that 1.3 class facilities be replaced by facilities capable of housing 1.1 class operations.

THOMAS D. REESE  
Major General, USA  
Commanding

<table>
<thead>
<tr>
<th>ESTIMATED CONSTRUCTION START:</th>
<th>OCTOBER 1987</th>
<th>INDEX: 1555</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESTIMATED MIDPOINT OF CONSTRUCTION:</td>
<td>JULY 1988</td>
<td>INDEX: 1590</td>
</tr>
<tr>
<td>ESTIMATED CONSTRUCTION COMPLETION:</td>
<td>APRIL 1989</td>
<td>INDEX: 1623</td>
</tr>
</tbody>
</table>
### Component:
ARMY

### FY 1988 MILITARY CONSTRUCTION PROJECT DATA

#### Installation and Location
- **Redstone Arsenal--MICOM**, Alabama

#### Project Title
- Modernization Propellant Deaeration (K)

#### Project Number
- TEMP 2209-1

### SUPPLEMENTAL DATA

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Estimated annual cost to operate proposed facility</td>
<td>$35,000</td>
</tr>
<tr>
<td>B. Number of additional personnel necessary to carry out the function of the proposed facility</td>
<td>4</td>
</tr>
<tr>
<td>C. Estimated life-cycle cost to operate and maintain the desired facility</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>D. Estimated life-cycle cost to operate and maintain the existing facility if new facility is a replacement</td>
<td>$0</td>
</tr>
</tbody>
</table>

### Planning and Design Data (Estimate)

1. **Status**
   - a. **Date Design Started**: JUL 84
   - b. **Percent Complete as of January 15 1987**: 100%
   - c. **Percent Complete as of October 1 1987**: 100%
   - d. **Date Design Completed**: DEC 86

2. **Basis**
   - a. **Standard or Definitive Design**: YES
   - b. Where design was most recently used: 

3. **Cost (total - $000)**
   - a. **Production of Plans and Specs**: 
   - b. **All other design costs**: 
   - c. **Total Cost (c) = (a)+(b) OR (d)+(e)**: 
   - d. **Contract**: 
   - e. **In House**: 

4. **Construction Start Date (planned)**: OCT 87
1. COMPONENT

ARMY

FY 1988

MILITARY CONSTRUCTION PROJECT DATA

3. INSTALLATION AND LOCATION

REDSTONE ARSENAL

Alabama

4. PROJECT TITLE

Modernization

Small Motor Finishing (S)

5. PROGRAM ELEMENT

6. CATEGORY CODE

7. PROJECT NUMBER

TEMP

2209-2

8. PROJECT COST ($000)

1,850

9. COST ESTIMATES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY FACILITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Motor Finishing Building</td>
<td>sf</td>
<td>4,200</td>
<td>355.95</td>
<td>1,495</td>
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<tr>
<td>SUPPORT FACILITIES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric Service</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>(29)</td>
</tr>
<tr>
<td>Water, Sewer &amp; Gas</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>(18)</td>
</tr>
<tr>
<td>Steam, Chilled Water &amp; Heat Dist</td>
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<td>--</td>
<td>(12)</td>
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<tr>
<td>Paving, Walks, Curbs &amp; Gutters</td>
<td>LS</td>
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<td>--</td>
<td>(39)</td>
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<tr>
<td>SUBTOTAL</td>
<td></td>
<td></td>
<td></td>
<td>1,593</td>
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<tr>
<td>CONTINGENCY PERCENT (10.00%)</td>
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<td></td>
<td></td>
<td>159</td>
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<tr>
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<tr>
<td>SUPERVISION, INSPECT &amp; OVHD (5.60%)</td>
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<tr>
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<td></td>
<td>1,850</td>
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<tr>
<td>TOTAL REQUEST (ROUNDED)</td>
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<td></td>
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<td>1,850</td>
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<tr>
<td>INSTALLED EQUIPMENT-OTHER APPROP</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

10. Description of Proposed Construction

This building provides small motor finishing operations for 1.1 and 1.3 hazard classification solid rocket motors. Safety requirements in AMCR 385-100 will be met. Building will be heated and air conditioned.

11. REQUIREMENT: 4,200 SF ADEQUATE: 0 SF SUBSTD: 0 SF PROJECT:

This building is needed for finishing operations for 1.1 motors loaded, cured, and assembled elsewhere in this line.
REQUEST:

This facility is the only means to support 1.1 low smoke/minimum smoke rocket motors in the north plant.

CURRENT SITUATION:

Solid rocket motors are being manufactured in modified buildings designed for artillery shell loading during 1938 to 1942 (1.3 hazard class propellants). 1.1 propellants are more demanding in safety requirements and are not compatible with 1.3 propellants. Continued impacts of safety constraints have made work arounds for 1.1 propellants unfeasible.

IMPACT IF NOT PROVIDED:

Safety requirements cannot be met for small rocket motors.

THOMAS D. REESE
Major General, USA
Commanding

ESTIMATED CONSTRUCTION START: APRIL 1988 INDEX: 1575
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1988 INDEX: 1605
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1989 INDEX: 1623
### SUPPLEMENTAL DATA

**A.** ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY

<table>
<thead>
<tr>
<th></th>
<th>150</th>
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</thead>
<tbody>
<tr>
<td>($)000</td>
<td></td>
</tr>
</tbody>
</table>

**B.** NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PEOPLE</td>
<td></td>
</tr>
</tbody>
</table>

**C.** ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY

<table>
<thead>
<tr>
<th></th>
<th>3750</th>
</tr>
</thead>
<tbody>
<tr>
<td>($)000</td>
<td></td>
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</table>

**D.** ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>($)000</td>
<td></td>
</tr>
</tbody>
</table>

**E.** PLANNING AND DESIGN DATA (ESTIMATE)

1. **STATUS**
   - a. DATE DESIGN STARTED: JUL 84
   - b. PERCENT COMPLETE AS OF JANUARY 15 1987: 100
   - c. PERCENT COMPLETE AS OF OCTOBER 1 1987: 100
   - d. DATE DESIGN COMPLETED: DEC 86

2. **BASIS**
   - a. STANDARD OR DEFINITIVE DESIGN: YES
   - b. NO X
   - WHERE DESIGN WAS MOST RECENTLY USED:

3. **COST (TOTAL - $000)**
   - a. PRODUCTION OF PLANS AND SPECS
   - b. ALL OTHER DESIGN COSTS
   - c. TOTAL COST (c) = (a)+(b) OR (d)+(e)
   - d. CONTRACT
   - e. IN HOUSE

4. **CONSTRUCTION START DATE (PLANNED): APR 88**
DEPARTMENT OF THE ARMY
JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1988/1989

FY 1988 - PRODUCTION BASE SUPPORT

APPROPRIATION: Procurement of Weapons and Tracked Combat Vehicles, Army
Activity 1 - Tracked Combat Vehicles

<table>
<thead>
<tr>
<th>Installation</th>
<th>Project No.</th>
<th>Project Title</th>
<th>Cost Estimate ($000)</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainz, Germany</td>
<td>882006</td>
<td>Facilitization at Main Army Depot</td>
<td>1.050</td>
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FY 1989 - PRODUCTION BASE SUPPORT

<table>
<thead>
<tr>
<th>Installation</th>
<th>Project No.</th>
<th>Project Title</th>
<th>Cost Estimate ($000)</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainz, Germany</td>
<td>882006</td>
<td>Facilitization at Main Army Depot</td>
<td>5.300</td>
<td>13</td>
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<tr>
<td>Lima Army, Tank Plant</td>
<td>822006</td>
<td>PSER Construction</td>
<td>6.000</td>
<td>17</td>
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</table>
Facilitization at Mainz Army Depot

3. INSTALLATION AND LOCATION

MAINZ
Germany

4. PROJECT TITLE

Facilitization at Mainz Army Depot

5. PROGRAM ELEMENT

000 00

6. CATEGORY CODE

G882006

7. PROJECT NUMBER

8. PROJECT COST ($000)

1,050

9. COST ESTIMATES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY FACILITY</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main Steam &amp; Condensate Lines (Gonsenheim)</td>
<td>LF</td>
<td>2,080</td>
<td>453.85</td>
<td>944</td>
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<tr>
<td>SUPPORT FACILITIES</td>
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</tr>
<tr>
<td>SUBTOTAL</td>
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<td>944</td>
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<tr>
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<td></td>
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<td>TOTAL CONTRACT COST</td>
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<td>991</td>
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<td>SUPERVISION, INSPECT &amp; OVHD (6.50%)</td>
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<td>64</td>
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<tr>
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<td>TOTAL REQUEST (rounded)</td>
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<td>1,050</td>
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<tr>
<td>INSTALLED EQUIPMENT-OTHER APPROP</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

10. Description of Proposed Construction

Installation of steam and condensate main lines to include excavation of ground, installation of the piping, and restoration of areas including by-works.

11. REQUIREMENT:

ADEQUATE: 
SUBSTD: 
PROJECT: 
Installation of new steam and condensate lines at the Gonsenheim facility. This project will preclude the need to purchase replacement small individual boilers for facilities not located near to existing steam lines.

REQUIREMENT:
Because some facilities at the Gonsenheim site are not located next to existing steam lines, they require small individual boilers for steam supplies. The existing boiler plant has sufficient capacity to support these facilities but requires some new steam and condensate return lines.
### 1. COMPONENT
**ARMY**

### 2. DATE
FY 1988 MILITARY CONSTRUCTION PROJECT DATA

### 3. INSTALLATION AND LOCATION
**MAINZ**
Germany

### 4. PROJECT TITLE
Facilitization at Mainz Army Depot

### 5. PROJECT NUMBER
TEMP G882006

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**CURRENT SITUATION:**
Facilities not located near to existing steam lines require individual boilers for steam supply. Connection to the existing central boiler is the most economically favorable solution.

**IMPACT IF NOT PROVIDED:**
Failure to provide this project will require a larger life-cycle cost for providing steam to facilities not located near to the existing steam distribution system.

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**WILLIAM S. LITTLEFIELD**
**COL**
Commander

**ESTIMATED CONSTRUCTION START:** APRIL 1988 INDEX: 1575
**ESTIMATED MIDPOINT OF CONSTRUCTION:** OCTOBER 1988 INDEX: 1605
**ESTIMATED CONSTRUCTION COMPLETION:** APRIL 1989 INDEX: 1623
### 1. COMPONENT
ARMY

### 2. DATE
FY 1988 MILITARY CONSTRUCTION PROJECT DATA JAN 1987

### 3. INSTALLATION AND LOCATION
MAINZ
Germany

### 4. PROJECT TITLE
Facilitization at Mainz Army Depot

### 5. PROJECT NUMBER
G882006

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#### SUPPLEMENTAL DATA

<table>
<thead>
<tr>
<th>A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY</th>
<th>($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY</td>
<td></td>
</tr>
<tr>
<td>OUT THE FUNCTION OF THE PROPOSED FACILITY..........</td>
<td></td>
</tr>
<tr>
<td>C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN</td>
<td></td>
</tr>
<tr>
<td>THE DESIRED FACILITY................................</td>
<td></td>
</tr>
<tr>
<td>D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN</td>
<td></td>
</tr>
<tr>
<td>THE EXISTING FACILITY IF NEW FACILITY IS A</td>
<td></td>
</tr>
<tr>
<td>REPLACEMENT.......................................</td>
<td></td>
</tr>
<tr>
<td>E. PLANNING AND DESIGN DATA (ESTIMATE)</td>
<td></td>
</tr>
</tbody>
</table>

1. STATUS
   a. DATE DESIGN STARTED............................ sep 86
   b. PERCENT COMPLETE AS OF JANUARY 15 1987.. 35
   c. PERCENT COMPLETE AS OF OCTOBER 1 1987.. 100
   d. DATE DESIGN COMPLETED........................ oct 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN YES X NO
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS ..................
   b. ALL OTHER DESIGN COSTS.........................
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e)........
   d. CONTRACT......................................
   e. IN HOUSE.....................................

4. CONSTRUCTION START DATE (PLANNED)............... apr 88
The primary facility to support combat vehicle maintenance at MZAD will require dismantling of existing buildings and erection of new facilities. Basic construction will be of reinforced concrete skeleton and in all cases will be site adapted to existing facilities. In addition, the project will include required utility services, emergency lighting, water purification treatment, compressed air, fire alarm and extinguishing system, partition walls and roof modifications. The hardstands and foundations will be of reinforced concrete.

REQUIREMENT: ADEQUATE; SUBSTD:
As the Army's Force Modernization Program continues to be implemented throughout USAREUR, the workload in depot level maintenance will also increase. This is due to the increased sophistication of the new systems, the increased equipment density within the Theater, the numerous items displaced to War Reserve or POMCUS status, and conversion to new equipment configurations. This will occur in all commodity areas. For most
REQUIREMENT:

Commodities, shipment to CONUS for repair is extremely costly. This is particularly true of Combat Vehicles which are bulky and heavy. In addition, CONUS repair requires that additional items, either end items or secondary items, be procured to increase the repair cycle float by the amount of the turn around required. The most economical approach to accomplish the expanding depot level workload for combat vehicles in USAREUR (and meet AMC's concept for depot level maintenance support in Europe) is to facilitate the MZAD site, thereby providing sufficient space to overhaul/repair combat vehicles.

CURRENT SITUATION:
The Mainz Army Depot is a very physically constrained facility. The workload required for the repair/overhaul of new systems cannot be met without modernizing the existing depot by replacing existing temporary facilities with permanent structures and modernizing and expanding support facilities. Mainz is tasked with maintaining, at depot level, Army Combat/Tactical vehicles, missiles and Communication and Electronics in Europe. The only reasonable alternatives to utilizing Mainz is to transfer all repairable combat vehicles and components of vehicles in Europe to a CONUS depot or contractor for the repair/overhaul. These alternatives and the extremely costly maintenance float requirement for combat vehicles and components would cause the US Government to lose all benefits to be gained from existing facilities and IPE at MZAD in relation to the combat vehicle fleet.

IMPACT IF NOT PROVIDED:
Should this project not be approved, Mainz would be unable to satisfy the repair/overhaul requirements. Failure to provide for the OCONUS maintenance of the USAREUR combat vehicle fleet will result in a significant degradation in the combat readiness of USAREUR or require costly second destination transportation of vehicles and components and necessitates having an extensive maintenance float in Europe. This facility project is necessary to meet an imminent demand for repair/overhaul capability. Delay of the project...
**Facilitization at Mainz Army Depot**

will require that interim inefficient (and therefore costly) means be employed to attempt to satisfy the repair/overhaul requirements.

WILLIAM S. LITTLEFIELD  
COL  
Commander

**ESTIMATED CONSTRUCTION START:** APRIL 1990 INDEX: 1666  
**ESTIMATED MIDPOINT OF CONSTRUCTION:** OCTOBER 1990 INDEX: 1690  
**ESTIMATED CONSTRUCTION COMPLETION:** APRIL 1991 INDEX: 1709
### COMPONENT
ARMY

### DATE
FY 1989 MILITARY CONSTRUCTION PROJECT DATA
JAN 1987

### INSTALLATION AND LOCATION
MAINZ
Germany

### PROJECT TITLE
Facilitization at Mainz Army Depot

### PROJECT NUMBER
TEMP
G892006

---

**SUPPLEMENTAL DATA**

A. **ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY**
   ($000)

B. **NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY**
   (PEOPLE)

C. **ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY**
   ($000)

D. **ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT**
   ($000)

---

**E. PLANNING AND DESIGN DATA (ESTIMATE)**

1. **STATUS**
   a. **DATE DESIGN STARTED**
      DEC 86
   b. **PERCENT COMPLETE AS OF JANUARY 15 1988**
      100
   c. **PERCENT COMPLETE AS OF OCTOBER 1 1988**
      100
   d. **DATE DESIGN COMPLETED**
      DEC 87

2. **BASIS**
   a. **STANDARD OR DEFINITIVE DESIGN**
      YES
   b. **WHERE DESIGN WAS MOST RECENTLY USED**

3. **COST (TOTAL - $000)**
   a. **PRODUCTION OF PLANS AND SPECS**
   b. **ALL OTHER DESIGN COSTS**
   c. **TOTAL COST**
      \[ (a) + (b) \]
   d. **CONTRACT**
   e. **IN HOUSE**

4. **CONSTRUCTION START DATE (PLANNED)**
   apr 90

---

**DD FORM 1391c**
PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED
PAGE NO. 16
1. COMPONENT
   ARMY
2. DATE
   J. in. 1987

3. INSTALLATION AND LOCATION
   Lima Army Tank Plant
   Ohio

4. PROJECT TITLE
   PSEE Construction

5. PROGRAM ELEMENT
6. CATEGORY CODE
   6037
7. PROJECT NUMBER
   893067
8. PROJECT COST ($000)
   6,000

9. COST ESTIMATES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY FACILITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Water Main System Upgrade</td>
<td>LS</td>
<td>- - -</td>
<td>- - -</td>
<td>(1,339)</td>
</tr>
<tr>
<td>2. Lighting System Upgrade</td>
<td></td>
<td></td>
<td></td>
<td>(1,900)</td>
</tr>
<tr>
<td>3. Addition to Bldg. 317</td>
<td>SF</td>
<td>21,800</td>
<td>99.72</td>
<td>(2,174)</td>
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<tr>
<td>SUPPORT FACILITIES</td>
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</tr>
<tr>
<td>SUBTOTAL</td>
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<tr>
<td>CONTINGENCY PERCENT (5.0%)</td>
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<tr>
<td>TOTAL CONTRACT COST</td>
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<td></td>
<td>5,683</td>
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<td>S10H (5.6%)</td>
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<td>313</td>
</tr>
<tr>
<td>TOTAL REQUEST</td>
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<tr>
<td>TOTAL REQUEST ROUNDED</td>
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<td></td>
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<td>6,000</td>
</tr>
</tbody>
</table>

10. Description of Proposed Construction

Upgrades water main system capacity by replacement of inadequate piping and fixtures, separating domestic and fire water supply systems, and expanding existing water system to provide fire protection to production support buildings throughout the installation.

Upgrades lighting system in the main production building by providing emergency lighting, replacement of existing light fixtures, and corrects electrical power factor.
Provides addition to existing building #317. New construction will be insulated metal roof and walls and reinforced concrete floor. Requires heating and ventilation systems, exhaust system, electrical, plumbing, telephone, and fire sprinkler systems. Includes vehicle wash booth, overhead cranes, and locomotive service pit.

II. REQUIREMENT
Project: Upgrades water main system and electrical lighting to correct OSHA, NFPA, and DOD Safety deficiencies. Completes plant fire loop to provide 150 psi for fire protection. Improves lighting in production area and provides emergency lighting for egress from production building during power failure. Consolidates maintenance area for plant support equipment and upgrades battery and corrosives storage area.

Requirement:

For expansions during FY85 to present have added production space. Water system has not expanded with the rest of the facility and is in violation of NFPA codes which specify that domestic and fire water systems be separate. Electrical lighting provides inadequate illumination to the production floor with no means of emergency lighting to illuminate egress routes from the production area. Space to maintain plant support equipment and vehicles is inadequate. These vehicles include forklifts, diesel and gasoline powered trucks, and a locomotive. Batteries are maintained for rebuild and/or recharge and exchange for electrical powered vehicles. Corrosives are stored for maintenance operations.

Current Situation:
The current water system does not meet NFPA codes. Piping and fixtures are inadequate to meet fire protection requirements. Domestic and fire water systems are combined and are "dead end" systems with only a single source of water. The electrical lighting system requires maintenance and relamping to provide adequate light to the production floor. No emergency
1. COMPONENT
   ARMY

2. DATE
   JAN 1987

3. INSTALLATION AND LOCATION
   Lima Army Tank Plant Ohio

4. PROJECT TITLE
   PSER Construction

5. PROJECT NUMBER
   393/476037

lighting exists. Maintenance for plant vehicles is done at various locations throughout the plant and outside on hardstands. Battery storage and corrosive storage areas are in violation of OSHA, NFPA, and DOD Safety codes.

Impact If Not Provided:
   Plant will remain in violation of OSHA, NFPA, and DOD Safety codes. The water system will require extensive maintenance to remain useful. Water for fire protection will not be available at sufficient pressures. Lighting will remain inadequate.

ELTON J. MINNEY
LTC, OrdC
Commanding
<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARMY</td>
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</table>

<table>
<thead>
<tr>
<th>INSTALLATION AND LOCATION</th>
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<tr>
<td>Lima Army Tank Plant Ohio</td>
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<tr>
<th>PROJECT TITLE</th>
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</thead>
<tbody>
<tr>
<td>PSER Construction</td>
</tr>
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</table>

### SUPPLEMENTAL DATA

**A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY ($000)**

**B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY (PEOPLE)**

**C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY ($000)**

**D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT ($000)**

**E. PLANNING AND DESIGN DATA (ESTIMATE)**

1. **STATUS**
   a. DATE DESIGN STARTED ................. DEC 86
   b. PERCENT COMPLETE AS OF JANUARY 15 1988 .. 100
   c. PERCENT COMPLETE AS OF OCTOBER 1 1988 .. 100
   d. DATE DESIGN COMPLETED .................... DEC 87

2. **BASIS**
   a. STANDARD OR DEFINITIVE DESIGN (YES) NO
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. **COST (TOTAL - $000)**
   a. PRODUCTION OF PLANS AND SPECS .............
   b. ALL OTHER DESIGN COSTS ....................
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e) ........
   d. CONTRACT ..................................
   e. IN HOUSE ..................................

4. **CONSTRUCTION START DATE (PLANNED)** .......... APR 89
### Army Ammunition Installation

<table>
<thead>
<tr>
<th>Installation</th>
<th>Project No.</th>
<th>Project Title</th>
<th>Cost Estimate ($000)</th>
<th>Page No.</th>
</tr>
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<tr>
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<td>Replacement Repl Bridge &amp; Trestles</td>
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<td>New 700 Line Steam Gen Plant</td>
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<td>Addition Overfire Systems</td>
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<td>Twin Cities Army PT, Minnesota</td>
<td>5882800-8</td>
<td>Modernization Igloo Storage</td>
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</table>
## DEPARTMENT OF THE ARMY
JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1988/1989

**FY 1988 - PRODUCTION BASE SUPPORT**
(Cont'd)

### APPROPRIATION: Procurement of Ammunition, Army

**ACTIVITY 2 - Production Base Support**

<table>
<thead>
<tr>
<th>Army Ammunition Installation</th>
<th>Project No.</th>
<th>Project Title</th>
<th>Cost Estimate ($000)</th>
<th>Page No.</th>
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<tr>
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<td>Security Improvements</td>
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<td>Missouri</td>
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</table>
1. COMPONENT
ARMY

2. DATE
JAN 1997

3. INSTALLATION AND LOCATION
LOUISIANA ARMY AMMUNITION PT
Louisiana

4. PROJECT TITLE
Mobile Group 1
REPLACEMENT
REPL BRIDGE & TRESTLES

5. PROGRAM ELEMENT

6. CATEGORY CODE
TEMP
860 30

7. PROJECT NUMBER
5314-13

8. PROJECT COST ($000)
1,250

9. COST ESTIMATES

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<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>COST</th>
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<tr>
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<td>1,082</td>
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<tr>
<td>BRIDGES &amp; TRESTLES</td>
<td>LS</td>
<td>--</td>
<td>(1,082)</td>
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<tr>
<td>SUPPORT FACILITIES</td>
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<td>SUBTOTAL</td>
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<td>TOTAL CONTRACT COST</td>
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<td>INSTALLED EQUIPMENT-OTHER APPROP</td>
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</table>

10. Description of Proposed Construction

Replace four wooden highway bridges. New bridges will be concrete or concrete boxed culverts as appropriate. Bridges will meet AASHO capacity rating of HS 20-44. Replace eight rawooden railroad trestles. New trestles will be steel or concrete as appropriate. Trestles will meet COOPER E45 rating per TM 5-370.

11. REQUIREMENT: 25 MI ADEQUATE: 6 MI SUBSTD: 19 MI
PROJECT:

THIS PROJECT IS TO PROVIDE REPLACEMENT FOR FOUR BRIDGES AND EIGHT TRESTLES INCLUDING HEADWALLS, WING WALLS, AND APPROACH AS NECESSARY TO PROVIDE STRUCTURES WITH APPROPRIATE LOAD CARRYING CAPABILITY.
1. COMPONENT

ARMY

2. DATE

FY 1988 MILITARY CONSTRUCTION PROJECT DATA

3. INSTALLATION AND LOCATION

LOUISIANA ARMY AMMUNITION PT
Louisiana

4. PROJECT TITLE

Replacement

REPL BRIDGE & TRESTLES

5. PROJECT NUMBER

TEMP

5314-13

REQUIREMENT:

EXISTING BRIDGES AND TRESTLES ARE WOOD STRUCTURES OF 1941-42 VINTAGE. THESE UNITS ARE DECAYING. INSPECTIONS BY THE CONSULTING FIRM OF AILLET, FENNER, JOLLY AND MCCLELLAND, INC AND FESA SHOW THAT THERE IS ADVANCED STAGES OF DECAY IN THE MAIN STRUCTURE AND THE PILING.

CURRENT SITUATION:

LOAD CARRYING CAPACITY ON EXISTING STRUCTURES HAS BEEN REDUCED. EACH STRUCTURE WILL BE REVIEWED ANNUALLY AND LOAD CARRYING CAPACITY ADJUSTED ACCORDING TO THE SAFE LOADING CAPACITY.

IMPACT IF NOT PROVIDED:

FAILURE TO APPROVE THIS PROJECT WILL RESULT IN BRIDGES AND TRESTLES FAILING TO THE POINT THEY ARE UNSAFE TO CROSS. IF A BRIDGE OR TRESTLE FAILS IT MAY ELIMINATE ACCESS TO THE SECTION OF THE INSTALLATION WHICH THAT STRUCTURE SERVES.

ADDITIONAL:

AN ECONOMIC ANALYSIS FORMAT B HAS BEEN SUBMITTED.

CARY F. ANDREW
LTC, OrdC
COMMANDING

ESTIMATED CONSTRUCTION START: MAY 1988 INDEX: 1580
ESTIMATED MIDPOINT OF CONSTRUCTION: MAY 1989 INDEX: 1627
ESTIMATED CONSTRUCTION COMPLETION: JUNE 1990 INDEX: 1674
1. COMPONENT
   ARMY
   FY 1988

2. DATE
   JAN 1987

3. INSTALLATION AND LOCATION
   LOUISIANA ARMY AMMUNITION PT
   Louisiana

4. PROJECT TITLE
   RECEPTION
   REPL BRIDGE & TRESTLES

5. PROJECT NUMBER
   TEMP
   5314-13

SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY
   4,000 ($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY
   (PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY
   $100,000 ($000)

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT
   ($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

   1. STATUS
      a. DATE DESIGN STARTED
         ........................................ 010885
      b. PERCENT COMPLETE AS OF JANUARY 15 1987
         ........................................ 100
      c. PERCENT COMPLETE AS OF OCTOBER 1 1987
         ........................................ 100
      d. DATE DESIGN COMPLETED
         ........................................ 301287

   2. BASIS
      a. STANDARD OR DEFINITIVE DESIGN
         YES NO
      b. WHERE DESIGN WAS MOST RECENTLY USED:
         NOT USED

   3. COST (TOTAL - $000)
      a. PRODUCTION OF PLANS AND SPECS
         ........................................
      b. ALL OTHER DESIGN COSTS
         ........................................
      c. TOTAL COST (c) = (a)+(b) OR (d)+(e)
         ........................................
      d. CONTRACT
         ........................................
      e. IN HOUSE
         ........................................

   4. CONSTRUCTION START DATE (PLANNED)
      ........................................ 300388
1. COMPONENT
ARMY

2. DATE
JAN 1997

3. INSTALLATION AND LOCATION
KANSAS ARMY AMMUNITION PLANT
Kansas

4. PROJECT TITLE
NEW 700 LINE STEAM GEN PLT

5. PROGRAM ELEMENT
821 22

6. CATEGORY CODE
821 22

7. PROJECT NUMBER
532921

8. PROJECT COST ($000)
560

9. COST ESTIMATES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
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<tr>
<td>PRIMARY FACILITY</td>
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<tr>
<td>Steam Generating Plant</td>
<td>LS</td>
<td>--</td>
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<td>505</td>
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<tr>
<td>SUPPORT FACILITIES</td>
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</tbody>
</table>

| | | | | |
| SUBTOTAL | | | | 505 |
| CONTINGENCY PERCENT (5.00%) | | | | 505 |
| TOTAL CONTRACT COST | | | | 25 |
| SUPERVISION, INSPECT & OVHD (5.50%) | | | | 530 |
| TOTAL REQUEST | | | | 29 |
| TOTAL REQUEST (ROUNDED) | | | | 559 |
| INSTALLED EQUIPMENT-OTHER APPROP | | | | 560 |

10. Description of Proposed Construction
Construct a new metal boiler house in 700 Area complete with new boilers and related equipment.

11. REQUIREMENT: 27,000,000 MB ADEQUATE: 0 MB
PROJECT:
Construct new boiler house, 700 Area.

REQUIREMENT:
This project is required to replace the old 1941-42 steam generating system with a high energy, multiple pass, steam generators capable of producing a total of 27,000,000 BTU per hour. Project to include all ancillary equipment.
1. COMPONENT: MILITARY CONSTRUCTION PROJECT DATA

2. DATE: JAN 1987

3. INSTALLATION AND LOCATION
KANSAS ARMY AMMUNITION PLANT
Kansas

4. PROJECT TITLE
NEW 700 LINE STEAM GEN PLT

5. PROJECT NUMBER
TEMP
532921

CURRENT SITUATION:
This old boiler house and steam generating equipment is deteriorated to a condition which is no longer feasible to repair.

IMPACT IF NOT PROVIDED:
If not replaced the aging system will continue to require prohibitive maintenance costs to remain in service. System failure results in insufficient process steam to sustain production.

/S/ CHARLES T. WALLSCHLAEGER
CHARLES T. WALLSCHLAEGER
LTC, OrdC
Commanding

ESTIMATED CONSTRUCTION START: APRIL 1988 INDEX: 1575
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1988 INDEX: 1605
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1989 INDEX: 1623
### MILITARY CONSTRUCTION PROJECT DATA

**FY 1988**

<table>
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<tr>
<th>1. COMPONENT</th>
<th>2. DATE</th>
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<tr>
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<td>01 1987</td>
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<tr>
<th>3. INSTALLATION AND LOCATION</th>
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<tbody>
<tr>
<td>KANSAS ARMY AMMUNITION PLANT</td>
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<tr>
<td>NEW 700 LINE STEAM GEN PLT</td>
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<tr>
<th>5. PROJECT NUMBER</th>
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<tbody>
<tr>
<td>TEMP</td>
</tr>
<tr>
<td>532921</td>
</tr>
</tbody>
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**SUPPLEMENTAL DATA**

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY .......................... ($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY ........... (PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY........................ ($000)

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT ............................................... ($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED ......................... Mar 86
   b. PERCENT COMPLETE AS OF JANUARY 15 1987.. 70
   c. PERCENT COMPLETE AS OF OCTOBER 1 1987.. 100
   d. DATE DESIGN COMPLETED ..................... Mar 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN YES NO
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS .............
   b. ALL OTHER DESIGN COSTS ....................
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e)........
   d. CONTRACT ..................................
   e. IN HOUSE ..................................

4. CONSTRUCTION START DATE (PLANNED) ............ Apr 88
Project will provide intrusion detection system for 49 magazines in Area L-3. Each magazine will be equipped to provide a signal to guard headquarters by multiplexed equipment which will monitor over hardwire and fiber optic cable. Primary electrical power and an external light will be provided to each igloo.

**Requirement:**

- **Adequate:** 49 BX
- **Substd:** 0 BX
- **Total:** 174 BX

AR 190-11, Para 3-13 requires magazines to be equipped with intrusion detectors if not under continuous surveillance by approved means. This project upgrades security protection for sensitive munitions storage.
REQUIREMENT: (CONT)

Project is required to prevent unauthorized entry of individuals in the sensitive storage areas for purpose of theft, sabotage, or other similar criminal acts.

CURRENT SITUATION:

Current need is being met by alternative measures allowed by AR 190-11.

Security is currently accomplished by measures required in the absence of an IDS system.

Currently, a guard checks each igloo; however, approximately two hours is required to make a full inspection. This means that an intrusion can go undetected for approximately 2 hrs. Current operation is under waiver PWS-SMLA-1-84.

IMPACT IF NOT PROVIDED:

If this project is not approved, compliance with AR 190-11 cannot be achieved.

ADDITIONAL:

SPECIFIC MOBILIZATION REQUIREMENT:

This scope of work is a current requirement to comply with references in Para 11.M

An exemption to the requirements of an economic analysis is requested in accordance with provisions of AR 11-28, Para 1-3D(3). Regulations which support this request are listed in Para 11.M.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1988 MILITARY CONSTRUCTION PROJECT DATA</th>
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<tr>
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<table>
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<tr>
<th>2. DATE</th>
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<tr>
<th>4. PROJECT TITLE</th>
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<tr>
<td>Utilization Group 1</td>
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<tr>
<td>Intrusion Alarm System</td>
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<th>5. PROJECT NUMBER</th>
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</thead>
<tbody>
<tr>
<td>TEMP</td>
</tr>
<tr>
<td>2800-1R</td>
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</table>

PROVISIONING OF THESE FACILITIES HAS BEEN DIRECTED BY GOVERNMENT; THEREFORE, PROPER IDS FACILITIES MUST ACCOMPANY THE DIRECTIVE.

/S/ GARY F. ANDREW
GARY F. ANDREW
LTC, ORDC
COMMANDING

ESTIMATED CONSTRUCTION START: APRIL 1988 INDEX: 1575
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1988 INDEX: 1605
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1989 INDEX: 1623
# Military Construction Project Data

## Component
- Army

## Date
- FY 1988
- 1987

## Installation and Location
- Louisiana Army Ammunition PT
- Louisiana

## Project Title
- Utilization Group 1 Intrusion Alarm System

## Project Number
- TEMP 2800-1B

### SupPLEMENTAL DATA

**A. Estimated Annual Cost to Operate Proposed Facility**
- ($000)

**B. Number of Additional Personnel Necessary to Carry Out the Function of the Proposed Facility**
- (PEOPLE)

**C. Estimated Life-Cycle Cost to Operate and Maintain the Desired Facility**
- ($000)

**D. Estimated Life-Cycle Cost to Operate and Maintain the Existing Facility if New Facility is a Replacement**
- ($000)

**E. Planning and Design Data (Estimate)**

1. **Status**
   - a. Date Design Started: OCT 86
   - b. Percent Complete as of January 15 1987: 100
   - c. Percent Complete as of October 1 1987: 100
   - d. Date Design Completed: DEC 86

2. **Basis**
   - a. Standard or Definitive Design: YES
   - b. Where Design was Most Recently Used: N/A

3. **Cost (Total - $000)**
   - a. Production of Plans and Specs
   - b. All Other Design Costs
   - c. Total Cost (c) = (a)+(b) OR (d)+(e)
   - d. Contract
   - e. In House

4. **Construction Start Date (Planned)**
- APR 88
1. **COMPONENT**
   - **ARMY**: MILITARY CONSTRUCTION PROJECT DATA
2. **DATE**: JAN 1987

3. **INSTALLATION AND LOCATION**
   - HOLSTON ARMY AMMUNITION PT
   - Tennessee

4. **PROJECT TITLE**
   - Addition
   - Overfire Air Systems

5. **PROGRAM ELEMENT**
   - 621.01

6. **CATEGORY CODE**
   - 10

7. **PROJECT NUMBER**
   - TEMP 5328-17

8. **PROJECT COST (DOLLARS)**
   - 800

9. **COST ESTIMATES**

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<tr>
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<th>Description</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST (DOLLARS)</th>
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<tbody>
<tr>
<td>PRIMARY FACILITIES</td>
<td>OVERFIRE AIR SYSTEMS</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>719</td>
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<tr>
<td>SUPPORT FACILITIES</td>
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10. **Description of Proposed Construction**

   Install overfire air systems on Boilers #4, #5, and #6, Building #8, Area A; and on Boiler #4, Building #200, Area B (Steam Plants). Each system will consist of an air mover (fan), piping, nozzles, and controls to provide independent operation for each stoker fired boiler. A steam turbine driver will be installed on the overfire air fan of Boiler #4, Bldg 200 as an energy saving measure. Because of equipment peculiarities, the energy saving measure is only economical on Boiler #4. This is the last of an ongoing program to install overfire air on each of the Holston ANN stoker fired boilers.

11. **REQUIREMENT:** ADEQUATE: SUFFICIENT: MBS PROJECT:
1. COMPONENT | FY 1988 MILITARY CONSTRUCTION PROJECT DATA |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>ARMY</td>
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</tbody>
</table>

2. DATE | JAN 1987 |

3. INSTALLATION AND LOCATION
HOLSTON ARMY AMMUNITION PT
Tennessee

4. PROJECT TITLE
Addition
Overfire Air Systems

5. PROJECT NUMBER
TEMP
5328-17

PROJECT:

This project is to install overfire air systems on four steam boilers at Holston AAP and to add a steam turbine driver on one system.

REQUIREMENT:

This project is required to reduce air pollution (visible stack emissions), to improve efficiency of boiler operations, and in one case (Boiler 4) to save energy.

CURRENT SITUATION:

Presently insufficient overfire air results in incomplete combustion of fuel (coal); thereby increasing fly ash load on electrostatic precipitators that result in air pollution. Based on evaluation of existing overfire air systems the advantages are: reduced carbon carryover; reduced particle dust loading in precipitator hoppers; reduced probability of fire in fly ash silos and increased boiler efficiency.

IMPACT IF NOT PROVIDED:

Particulate emissions will occasionally exceed allowable EPA limitations at loads between 80 and 100 percent boiler capacity. Also, boiler efficiency will not be improved if this project is not funded.

/S/ JAMES F. BALD, JR
JAMES F. BALD, JR
LTC, OD
Commander

ESTIMATED CONSTRUCTION START:
APRIL 1988
INDEX: 1575

ESTIMATED MIDPOINT OF CONSTRUCTION:
JANUARY 1989
INDEX: 1616

ESTIMATED CONSTRUCTION COMPLETION:
OCTOBER 1989
INDEX: 1650
**SUPPLEMENTAL DATA**

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY ........................................... UNK ($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY............ 0 (PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY .......................... UNK ($000)

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT.......................... NA ($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED............................... NOV 85
   b. PERCENT COMPLETE AS OF JANUARY 15 1987.. 95
   c. PERCENT COMPLETE AS OF OCTOBER 1 1987.. 100
   d. DATE DESIGN COMPLETED........................... NOV 86

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN YES NO X
   b. WHERE DESIGN WAS MOST RECENTLY USED:
      HOLSTON

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS .................
   b. ALL OTHER DESIGN COSTS.......................... 45
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e)........... 45
   d. CONTRACT........................................ 45
   e. IN HOUSE.......................................

4. CONSTRUCTION START DATE (PLANNED).............. APR 88
Phase IV will provide for the building of access roads, the purchase of one portable ramp and the reinforcing of floors to sixteen (16) rail shiphouses.

11. REQUIREMENT: 155,283 SF ADEQUATE: 81,712 SF SUBSTD: 73,571 SF PROJECT:
To convert sixteen (16) limited access Rail shiphouses to prime explosive storage locations.
REQUIREMENT:
Access roads are needed for trailer truck access to existing shiphouses that have only rail access, for end-product storage requirements.
CURRENT SITUATION:
Currently, the shiphouses are loaded in two stages. First, by manual transfer of propellant from an intraplant trailer to a rail jitney car and then by manual transfer from the jitney car into the shiphouse. Direct
1. COMPONENT  | FY 1988 MILITARY CONSTRUCTION PROJECT DATA  
<table>
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2. DATE: 1987

3. INSTALLATION AND LOCATION
INDIANA ARMY AMMUNITION PT
Indiana

4. PROJECT UTILIZATION
- Group 1
- Addition
Shiphse/Rds-Phase IV

5. PROJECT NUMBER
TEMP 5320/15

CURRENT SITUATION:

Trailer access eliminates one transfer operation. Floor reinforcement is required for forklift transfer of goods.

IMPACT IF NOT PROVIDED:
Failure to provide this project will necessitate the continued costly manipulating and rewarehousing of explosive inventories. Additional hiring of material handling personnel will be required to keep up with the rate of Class 1.3 storage turnover and more people than necessary will be exposed to hazards of manually handling explosives. Critically needed prime explosive storage space to comply with the ballistic acceptance procedures in SB 742-1, ammunition surveillance procedures for finished goods produce will be lacking at INAAP if this project is not provided.

ADDITIONAL:
It is estimated that an annual savings of $355,972 will be realized. Presently, INAAP has 238 Class 1.3 facilities. Increased production schedules for 1986-88 will require that all 238 Class 1.3 facilities be utilized equally and that an estimated 1,217 load or unload operations will be required annually. Additionally, approximately 150 hours will be saved for quality assurance, content surveillance, inventory check and maintenance personnel.

/5/ TRANNIE W. SANDERSON
TRANNIE W. SANDERSON
LTC, CM
Commanding

ESTIMATED CONSTRUCTION START:
APRIL 1988 INDEX: 1575

ESTIMATED MIDPOINT OF CONSTRUCTION:
OCTOBER 1988 INDEX: 1605

ESTIMATED CONSTRUCTION COMPLETION:
APRIL 1989 INDEX: 1623
1. COMPONENT

| AMMY |

2. DATE

| 1987 |

3. INSTALLATION AND LOCATION

| INDIANA ARMY AMMUNITION PT |

4. PROJECT

| Miltlization Group 1 Addition | Shigmse/Rds-Phase IV |

5. PROJECT NUMBER

| TEMPI 5330/15 |

SUPPLEMENTAL DATA

| A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY | 0 ($000) |

| B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY | 0 (PEOPLE) |

| C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY | 0 ($000) |

| D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT | 0 ($000) |

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS

| a. DATE DESIGN STARTED | FEB 86 |

| b. PERCENT COMPLETE AS OF JANUARY 15 1987 | 100 |

| c. PERCENT COMPLETE AS OF OCTOBER 1 1987 | 100 |

| d. DATE DESIGN COMPLETED | DEC 86 |

2. BASIS

| a. STANDARD OR DEFINITIVE DESIGN | YES | NO | X |

| b. WHERE DESIGN WAS MOST RECENTLY USED: | INAAP |

3. COST (TOTAL - $000)

| a. PRODUCTION OF PLANS AND SPECS | 21 |

| b. ALL OTHER DESIGN COSTS | 21 |

| c. TOTAL COST (c) = (a)+(b) OR (d)+(e) | 21 |

| d. CONTRACT | 12 |

| e. IN HOUSE | 9 |

4. CONSTRUCTION START DATE (PLANNED) | JUN 88 |
### 1. COMPONENT
ARMY

### 2. DATE
FY 1988
JAN 1987

### 3. INSTALLATION AND LOCATION
INDIANA ARMY AMMUNITION PT
Indiana

### 4. PROJECT TITLE
Stabilization Group 1
Addition
Shipse/Rds-Phase IV

### 5. PROJECT NUMBER
5330/15

---

F. EQUIPMENT ASSOCIATED WITH THIS PROJECT WHICH WILL BE PROVIDED FROM OTHER APPROPRIATIONS

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<th>FY OF</th>
<th>COST</th>
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DD FORM 1391c
PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED
PAGE NO. 39
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<td>Modernization</td>
<td>MOD Bldg N-3 for A-5 Drying</td>
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<tr>
<th>F. EQUIPMENT ASSOCIATED WITH THIS PROJECT WHICH WILL BE PROVIDED FROM OTHER APPROPRIATIONS</th>
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<tr>
<td>Drying Process Equipment</td>
<td>PAA</td>
<td>1987</td>
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</tbody>
</table>
This project is required to modernize an existing drying process to reduce labor and operating space requirements and make existing facilities available for production of other A-Compositions and PBX-Compositions. The proposed modernization is needed to meet FYDP production requirements.

Modernize Composition A-5 Drying Process.

**REQUIREMENT:**

This project is required to modernize an existing drying process to reduce labor and operating space requirements and make existing facilities available for production of other A-Compositions and PBX-Compositions. The proposed modernization is needed to meet FYDP production requirements.

**11. REQUIREMENT:**

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<tr>
<th>SF ADEQUATE:</th>
<th>SF SUBSTD:</th>
<th>SF PROJECT</th>
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**New construction, alterations, support facilities and utilities as required to modernize A-5 Drying Process.**
CURRENT SITUATION:

Composition A-5 explosive is now dried using drying beds which require extra labor, utilities and facility space. The plant cannot meet the FYDP production requirements without additional, faster drying methods. The FYDP production for Composition A-5 alone would require all existing drying beds.

IMPACT IF NOT PROVIDED:

If this project is not provided, the plant cannot meet the FYDP production requirements and excessive operating costs will continue for the explosive product using the existing drying bed process.

/S/ JAMES F. BALD, JR
JAMES F. BALD, JR
LTC, OD
Commanding

ESTIMATED CONSTRUCTION START: JULY 1988 INDEX: 1590
ESTIMATED MIDPOINT OF CONSTRUCTION: AUGUST 1989 INDEX: 1640
ESTIMATED CONSTRUCTION COMPLETION: SEPTEMBER 1990 INDEX: 1686
1. COMPONENT
   ARMY

2. DATE
   JUN 1987

3. INSTALLATION AND LOCATION
   HOLSTON ARMY AMMUNITION PT--11220
   Tennessee

4. PROJECT TITLE
   Modernization
   MOD Bldg N-3 for A-5 Drying

5. PROJECT NUMBER
   0073000

SUPPLEMENTAL DATA

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<tr>
<td>B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY</td>
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<tr>
<td>OUT THE FUNCTION OF THE PROPOSED FACILITY</td>
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<tr>
<td>C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN</td>
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<td>THE DESIRED FACILITY</td>
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<td>D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN</td>
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E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED: JAN 86
   b. PERCENT COMPLETE AS OF JANUARY 15 1987: 50%
   c. PERCENT COMPLETE AS OF OCTOBER 1 1987: 100%
   d. DATE DESIGN COMPLETED: MAR 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN: YES
   b. WHERE DESIGN WAS MOST RECENTLY USED: NA

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS: 40
   b. ALL OTHER DESIGN COSTS: 70
   c. TOTAL COST (c) = (a) + (b): 110
   d. CONTRACT: 77
   e. IN HOUSE: 33

4. CONSTRUCTION START DATE (PLANNED): FEB 88
1. Component: Army
2. Date: 1987
3. Installation and Location:
   LOUISIANA ARMY AMMUNITION PT
   Louisiana
4. Project Title:
   Mobil Group 1
   REPLACEMENT
   REPL BARRICADES, AREA D
5. Program Element:
   TEMP
   14930
6. Category Code:
   5314-21
7. Project Number:
8. Project Cost ($000):
   590
9. Cost Estimates:
   Item | U/M | Quantity | Unit | Cost ($000)
   ----------------------------------
   PRIMARY FACILITY
   SUPPORT FACILITIES:
   Other
   LS | -- | -- | 506
   SUBTOTAL
   CONTINGENCY PERCENT (10.00%)
   TOTAL CONTRACT COST
   SUPERVISION, INSPECT & OYHD (5.50%)
   TOTAL REQUEST
   TOTAL REQUEST (ROUNDED)
   INSTALLED EQUIPMENT-OTHER APPROP
   506
   51
   557
   31
   588
   590
   (0)
10. Description of Proposed Construction:

   Remove and replace four barricades at explosives production support
   buildings (D-1220 and D-1222). Existing structures are wooden revetted and
   earth filled, 15 ft high by various lengths.

11. Requirement:

   EA ADEQUATE: 0
   EA SUBSTD: 535
   PROJECT:
   Remove existing deteriorated barricades and replace with new structures 15
   ft high x 48 ft wide x various lengths (220 or 315 ft long). Barricades will
   meet criteria established by AMC-R 385-100.

   REQUIREMENT:
   Barricades are required to provide adequate explosion protection for
   personnel and facilities in accordance with AMC-R 385-100. Current
   barricades meet safety requirements but require extensive maintenance
   because of deterioration.
CURRENT SITUATION:
Existing earthen barricades are supported by wood pilings and timber headers. The wooden support structure are severely rotted and will ultimately allow the barricade to fall. Repair of the revetment structure was considered but determined not to be feasible.

IMPACT IF NOT PROVIDED:
Failure to approve this project will ultimately result in the collapsing of existing barricades. Production will be restricted due to inadequate explosion protection for workers and facilities. Plant will not be able to operate with current quantity/distance limitations.

ADDITIONAL:
Explosion protection barricades protect workers, buildings and production equipment and prevent propagation of blast to other explosive production buildings in case of a mishap.

GARY F. ANDREW
LTC, OrdC
COMMANDING

ESTIMATED CONSTRUCTION START: MARCH 1988 INDEX: 1572
ESTIMATED MIDPOINT OF CONSTRUCTION: JUNE 1988 INDEX: 1585
ESTIMATED CONSTRUCTION COMPLETION: SEPTEMBER 1988 INDEX: 1600
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<td>REPL BARRICADES, AREA D</td>
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**SUPPLEMENTAL DATA**

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY (\(\text{\$000}\))

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY (\(\text{PEOPLE}\))

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY (\(\text{\$000}\))

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT (\(\text{\$000}\))

**E. PLANNING AND DESIGN DATA (ESTIMATE)**

1. STATUS
   a. DATE DESIGN STARTED .................. 010985
   b. PERCENT COMPLETE AS OF JANUARY 15 1987 .. 100
   c. PERCENT COMPLETE AS OF OCTOBER 1 1987 .. 100
   d. DATE DESIGN COMPLETED ................ 301287

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN YES NO
   b. WHERE DESIGN WAS MOST RECENTLY USED:
      LOUISIANA AAP

3. COST (TOTAL - \(\text{\$000}\))
   a. PRODUCTION OF PLANS AND SPECS ................
   b. ALL OTHER DESIGN COSTS ....................
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e) ..........
   d. CONTRACT ..................................
   e. IN HOUSE ..................................

4. CONSTRUCTION START DATE (PLANNED) ............ 150388
**1. COMPONENT**  
**Army**

**2. DATE**

**3. INSTALLATION AND LOCATION**
MILAN ARMY AMMUNITION PLANT  
Tennessee

**4. PROJECT TITLE**
COND. & STG. FAC AREA ZZ

**5. PROGRAM ELEMENT**

**6. CATEGORY CODE**

**7. PROJECT NUMBER**
TEMP  
5317-19

**8. PROJECT COST (Dollars)**
540

**9. COST ESTIMATES**

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</table>

**10. Description of Proposed Construction**

WORK CONSISTS OF PROVIDING FOUR (4) EARTH COVERED MAGAZINES. THREE (3) SMALL MAGAZINES WILL BE USED TO STORE EXPLOSIVE COMPONENTS OF DIFFERENT COMPATIBILITY GROUPINGS WHILE AWAITING TESTING. ONE (1) MAGAZINE WILL BE USED TO HOUSE CONDITIONING EQUIPMENT WHERE AMMUNITION COMPONENTS ARE CONDITIONED PRIOR TO TESTING. NO OLD FACILITIES WILL BE DEMOLISHED. CONSTRUCTION AREA NOT SITED WITHIN A FLOOD PLAIN.

**11. REQUIREMENT**
750 SF ADEQUATE: 0 SF SUBSTD: 0 SF

PROJECT:
STORAGE AND CONDITIONING SPACE, WHERE STORAGE COMPATIBILITY OF AMMUNITION, EXPLOSIVE COMPONENTS AND EXPLOSIVES WILL NOT BE A PROBLEM AND SECURITY OF ALL ITEMS WILL NOT BE COMPROMISED.
1. COMPONENT
   MILITARY CONSTRUCTION
   PROJECT DATA

2. DATE
   JLT: 1987

3. INSTALLATION AND LOCATION
   MILAN ARMY AMMUNITION PLANT
   Tennessee

4. PROJECT TITLE
   COND. & STG. FAC AREA ZZ

5. PROJECT NUMBER
   TEMP 5317-19

REQUIREMENT:
TO CORRECT SECURITY DEFICIENCIES WITH REGARD TO EXISTING FACILITIES
CURRENTLY UTILIZED FOR STORAGE OF AMMUNITION, EXPLOSIVES AND TEST WEAPONS.
NEW FACILITIES ARE ALSO NEEDED TO CONSOLIDATE THE LOCATION OF CONDITIONING
EQUIPMENT AND RESOLVE COMPATIBILITY PROBLEMS.

CURRENT SITUATION:
TEMPORARY SECURITY MEASURES HAVE BEEN TAKEN TO ALLOW LIMITED STORAGE OF TEST
WEAPONS AS WELL AS SOME AMMUNITION AND EXPLOSIVES IN EXISTING TEST AREA
FACILITIES. THIS TEMPORARY CONDITION CAUSES EXTRA OPERATING REQUIREMENTS
THAT IMPEDE TEST AREA FUNCTIONS.

IMPACT IF NOT PROVIDED:
PROBLEMS CONCERNING SECURITY, STORAGE COMPATIBILITY AS WELL AS LIMITED
STORAGE SPACE COULD RESULT IN THE SUSPENSION OF SOME ACTIVITIES AT THE TEST
AREA.

J. R. ROBERTS
LTC
COMMANDING

ESTIMATED CONSTRUCTION START: APRIL 1988 INDEX: 1575
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1988 INDEX: 1605
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1989 INDEX: 1623
**Component**

**Army**

**Military Construction Project Data**

**Installation And Location**

MILAN ARMY AMMUNITION PLANT

Tennessee

**Project Title**

COND. & STG. FAC AREA ZZ

**Project Number**

TEMP

**5317-19**

---

**Supplemental Data**

1. **Estimated Annual Cost to Operate Proposed Facility**
   - ($000)

2. **Number of Additional Personnel Necessary to Carry Out the Function of the Proposed Facility**
   - (People)

3. **Estimated Life-Cycle Cost to Operate and Maintain the Desired Facility**
   - ($000)

4. **Estimated Life-Cycle Cost to Operate and Maintain the Existing Facility if New Facility is a Replacement**
   - ($000)

5. **Planning and Design Data (Estimate)**

   **Status**
   - **Date Design Started**: June 36
   - **Percent Complete as of January 15, 1987**: 95
   - **Percent Complete as of October 1, 1987**: 100
   - **Date Design Completed**: January 37

   **Basis**
   - Standard or Definitive Design: Yes
   - Where Design Was Most Recently Used:

   **Cost (Total - $000)**
   - Production of Plans and Specs
   - All Other Design Costs
   - Total Cost = (a)+(b) OR (d)+(e)
   - Contract
   - In House

6. **Construction Start Date (Planned)**

---
1. COMPONENT: ARMY

2. DATE: JAN 1987

3. INSTALLATION AND LOCATION: Radford Army Ammunition Pt, Virginia

4. PROJECT TITLE: Replacement

5. CATEGORY CODE: 226 80

6. TEMP: 532616

7. PROJECT NUMBER: 1,000

8. PROJECT COST ($000): 885

9. COST ESTIMATES

<table>
<thead>
<tr>
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<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT</th>
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<tr>
<td>PRIMARY FACILITY</td>
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<tr>
<td>REPLACE 5 BARRICADES</td>
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<td>SUPPORT FACILITIES</td>
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<td>INSTALLED EQUIPMENT-OTHER APPROP</td>
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<td></td>
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</table>

10. Description of Proposed Construction:

COMPLETELY REMOVE AND RECONSTRUCT BARRICADES FOR FIVE (5) ACTIVE PROPELLANT OPERATING BUILDINGS. NOT SITED IN A FLOOD PLAIN.

11. REQUIREMENT: SF ADEQUATE: SF SUBSTD: 0 SF

PROJECT: REPLACE 750 MULTI-STORY AND THREE SINGLE-STORY, DOUBLE REVETTED WOODEN, EARTH FILLED BARRICADES WITH ONE MULTI-STORY AND FOUR SINGLE-STORY BARRICADES. THE PROJECT MUST REMOVE AND RE-INSTALL UTILITIES, PROCESS PIPING AND DUCTWORK PASSING THROUGH OR ATTACHED TO THE BARRICADES. ALSO, THE FLOORS AND ROOFS THROUGH THE BARRICADE PORTALS ARE TO BE REPLACED. DETERIORATED ESCAPE CHUTES AND SUPPORT FRAMING ARE TO BE REPLACED AND THE SURFACE DRAINAGE IS TO BE DIVERTED AWAY FROM THE BARRICADE FOUNDATION. UPGRADE THE ELECTRICAL LIGHTING AND WIRING TO MEET THE LATEST CODES. NOTE: RATHER THAN UPGRADE THE 1940'S OPEN WIRING AND NONCONFORMING ELECTRICAL AT ALL THE FACILITIES AT RAAP AT ONE TIME, IT HAS PREVIOUSLY BEEN DECIDED TO CORRECT THE CONDITIONS WHEN MAJOR WORK IS PERFORMED ON INDIVIDUAL BUILDINGS. NEW...
1. COMPONENT: ARMY
2. DATE: JAN 1987

3. INSTALLATION AND LOCATION:
Radford Army Ammunition Pt
Virginia

4. PROJECT TIMELINE:
- REPLACEMENT
- REPLACE FIVE (5) BARRICADES

5. PROJECT NUMBER:
- TEMP 532616

PROJECT:

WIRING AND CONDUIT ON BARRICADES CORRECTS THE MAJORITY OF THE REQUIREMENTS.

REQUIREMENT:

THIS PROJECT IS THE NINTH PHASE OF AN ANNUAL REPLACEMENT PROGRAM FOR THE BARRICADES AT THIS PLANT WHICH WERE ERECTED IN THE 1940-41 PERIOD. THIRTY-THREE BARRICADES IN PHASE I (FY-80) THROUGH PHASE V (FY-84) HAVE BEEN COMPLETED. REPAIRS TO MANY OF THESE BARRICADES HAVE BECOME EXCESSIVE AND CANNOT KEEP UP WITH THE RATE OF DETERIORATION, AND THE STRUCTURAL INTEGRITY CANNOT BE ASSURED.

CURRENT SITUATION:

240 BARRICADES ARE REQUIRED AT THIS PLANT TO MEET CURRENT PRODUCTION SCHEDULES AND FOR MOBILIZATION. A PORTION OF THESE CAN BE MAINTAINED FOR THE NEXT 20 YEARS. THE REMAINING ONES SHOULD BE REPLACED BECAUSE OF DECAYING OF THE MAJOR STRUCTURAL COMPONENTS. A REPLACEMENT PROGRAM HAS BEEN STARTED TO RENEW THE BARRICADES AT THESE BUILDINGS, A FEW EACH YEAR, BEGINNING WITH THE ONES THAT ARE IN GREATEST NEED OF REPLACEMENT.

IMPACT IF NOT PROVIDED:

WITHOUT ADEQUATE BARRICADES, RAAP COULD NOT CONTINUE TO OPERATE WITHIN EXISTING INTRALINE QUANTITY DISTANCES.

ADDITIONAL:

NOT REQUIRED.

---

G. J. Savitske
LTC, CMLC
COMMANDER

ESTIMATED CONSTRUCTION START: MAY 1988 INDEX: 1608
ESTIMATED MIDPOINT OF CONSTRUCTION: JANUARY 1989 INDEX: 1655
ESTIMATED CONSTRUCTION COMPLETION: SEPTEMBER 1989 INDEX: 1694
1. COMPONENT
   ARMY

2. DATE
   JAN 1987

3. INSTALLATION AND LOCATION
   Radford Army Ammunition Pt
   Virginia

4. PROJECT TERRITORIZATION Group I
   REPLACEMENT
   REPLACE FIVE (5) BARRICADES

5. PROJECT NUMBER
   TEMP
   532616

---

SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY 0 ($000)
B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY 0 (PEOPLE)
C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY 0 ($000)
D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT 0 ($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

   1. STATUS
      a. DATE DESIGN STARTED ....................... Jul 85
      b. PERCENT COMPLETE AS OF JANUARY 15 1987 ... 70
      c. PERCENT COMPLETE AS OF OCTOBER 1 1987 .... 100
      d. DATE DESIGN COMPLETED .................... Mar 87

   2. BASIS
      a. STANDARD OR DEFINITIVE DESIGN YES NO
      b. WHERE DESIGN WAS MOST RECENTLY USED:

   3. COST (TOTAL - $000)
      a. PRODUCTION OF PLANS AND SPECS ..............
      b. ALL OTHER DESIGN COSTS ......................
      c. TOTAL COST (c) = (a)+(b) OR (d)+(e) .......
      d. CONTRACT ................................
      e. IN HOUSE ................................

   4. CONSTRUCTION START DATE (PLANNED) .......... Apr 88
3. INSTALLATION AND LOCATION
Radford Army Ammunition Pt
Virginia

4. PROJECT TITLE
MobiGroup 1
Replacement
Replace Barricades at Explosive Op

5. PROGRAM ELEMENT
6. CATEGORY CODE
7. PROJECT NUMBER
8. PROJECT COST ($000)
226 80
2700-02
TEMP
2700-02
540

9. COST ESTIMATES

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<tr>
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<td>INSTALLED EQUIPMENT-OTHER APPROP</td>
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10. Description of Proposed Construction

Completely remove and re-construct barricades for three (3) active propellant operating buildings. Not sited in a flood plain.

11. REQUIREMENT:

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<tr>
<th>SF ADEQUATE:</th>
<th>SF SUBSTD:</th>
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<tbody>
<tr>
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</table>
| Replace one multi-story and two single-story, double revetted wooden, earth filled barricades with one multi-story and two single-story barricades. The project must remove and re-install utilities, process piping and ductwork passing through or attached to the barricades. Also, the floors and roofs through the barricade portals are to be replaced. Deteriorated escape chutes and support framing are to be replaced and the surface drainage is to be diverted away from the barricade foundation. Upgrade the electrical lighting and wiring to meet the latest codes. Note: Rather than upgrade the 1940’s open wiring and nonconforming electrical at all the facilities at RAAP at one time, it has previously been decided to correct the conditions when major work is performed on individual buildings. New wiring and conduit on
1. COMPONENT
   ARMY

2. DATE
   JAN 1987

3. INSTALLATION AND LOCATION
   Radford Army Ammunition Pt
   Virginia

4. PROJECT TITLE
   Mobilization Group 1
   Replacement
   Replace Barricades at Explosive Operating Buildings

5. PROJECT NUMBER
   TEMP
   2700-02

PROJECT:

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<th>REQUIREMENT</th>
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<td>This project is part of an annual replacement program for the barricades at this plant which were erected in the 1940-41 period. Thirty-three barricades in Phase I (FY-80) through Phase V (FY-84) have been completed. Repairs to many of these barricades have become excessive and cannot keep up with the rate of deterioration, and the structural integrity cannot be assured.</td>
</tr>
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</table>

CURRENT SITUATION:

| 240 barricades are required at this plant to meet current production schedules and for mobilization. A portion of these can be maintained for the next 20 years. The remaining ones should be replaced because of decaying of the major structural components. A replacement program has been started to renew the barricades at these buildings, a few each year, beginning with the ones that are in greatest need of replacement. |

IMPACT IF NOT PROVIDED:

| Without adequate barricades, RAAP could not continue to operate within existing intraline quantity distances. |

G. J. Savitske
LTC, OrdC
Commander

| ESTIMATED CONSTRUCTION START: | JANUARY 1988 | INDEX: 1567 |
| ESTIMATED MIDPOINT OF CONSTRUCTION: | JULY 1988 | INDEX: 1590 |
| ESTIMATED CONSTRUCTION COMPLETION: | JANUARY 1989 | INDEX: 1616 |
## Military Construction Project Data

### 1. Component
- Army: FY 1988

### 2. Date
- January 1987

### 3. Installation and Location
- Radford Army Ammunition Pt
- Virginia

### 4. Project
- Utilization Group 1
- Replacement
- Replace Barricades at Explosive Operating Buildings

### 5. Project Number
- TEMP 2700-02

## Supplemental Data

<table>
<thead>
<tr>
<th>A. Estimated Annual Cost to Operate Proposed Facility</th>
<th>0 ($000)</th>
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<tbody>
<tr>
<td>B. Number of Additional Personnel Necessary to Carry Out the Function of the Proposed Facility</td>
<td>0 (PEOPLE)</td>
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<tr>
<td>C. Estimated Life-Cycle Cost to Operate and Maintain the Desired Facility</td>
<td>0 ($000)</td>
</tr>
<tr>
<td>D. Estimated Life-Cycle Cost to Operate and Maintain the Existing Facility if New Facility is a Replacement</td>
<td>0 ($000)</td>
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### E. Planning and Design Data (Estimate)

1. **Status**
   - a. Date design started: October 1986
   - b. Percent complete as of January 15, 1987: 70%
   - c. Percent complete as of October 1, 1987: 100%
   - d. Date design completed: March 1987

2. **Basis**
   - a. Standard or definitive design: Yes
   - b. Where design was most recently used: No

3. **Cost (Total - $000)**
   - a. Production of plans and specs
   - b. All other design costs
   - c. Total cost (c) = (a) + (b) or (d) + (e)
   - d. Contract
   - e. In house

4. **Construction Start Date (Planned)**: January 1988
1. COMPONENT
   ARMY

2. DATE
   JAN 1981

3. INSTALLATION AND LOCATION
   Twin Cities Army Ammo Pt
   Minnesota

4. PROJECT TITLE
   MobilGroup 2
   Modernization
   Igloo Storage

5. PROGRAM ELEMENT
6. CATEGORY CODE
7. PROJECT NUMBER
   TEMP
   421 80
   2800-8

8. PROJECT COST ($000)
   2,600

9. COST ESTIMATES

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<tr>
<td>Electric Service</td>
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<td>42180</td>
<td>LS</td>
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SUBTOTAL                    |     |          | 2,288     |             |
CONTINGENCY PERCENT (5.00%)  |     |          | 114       |             |
TOTAL CONTRACT COST          |     |          | 2,402     |             |
SUPERVISION, INSPECT & OVHD (8.40%) |     |          | 202       |             |
TOTAL REQUEST                |     |          | 2,604     |             |
TOTAL REQUEST (ROUNDED)      |     |          | 2,600     |             |
INSTALLED EQUIPMENT-OTHER APPROP |     |          | 0         |             |

10. Description of Proposed Construction

DESCRIPTION

Construct 4 concrete earth-covered, steam-heated, permanent igloos (3100 sq ft each) for propellant powder storage. Each igloo is to have a mechanical dock leveler, all utilities, road and rail access, and full security and safety systems. Existing salvage area is to be relocated as necessary, and existing wood frame magazines are to be demolished.

11. REQUIREMENT:

   Requirement: 12,400 SF
   Adequate: 0 SF
   Substd: 12,400 SF

PROJECT:

Construct four propellant powder storage igloos, and demolish existing substandard wood frame structures.

REQUIREMENT:

This project is required to provide powder storage facilities that will meet the criteria of Army security and safety regulations.
CURRENT SITUATION:
Present facilities are substandard, temporary wood structures that do not meet safety/security standards, and have been used under waivers which will no longer be granted.

IMPACT IF NOT PROVIDED:
If this project is not approved, use of the existing facilities will be possible only if waivers are granted since the structures are not in compliance with AR 190-11 and DARCOMR 190-3.

ADDITIONAL:
The project described in this 1391 is part of a total project for six storage igloos. This portion of the work for four igloos is intended to be constructed in FY88. The remaining two igloos and associated support facilities are proposed to be done in FY89. Estimated costs for the FY89 work are: 2 igloos = $822000, support facilities = 64000, and contingency and SIOH = 95000 -- for a fy89 total of $981000.

/S/ Theodore E. Schulte
Theodore E. Schulte
Commanders Representative

ESTIMATED CONSTRUCTION START: APRIL 1988 INDEX: 1575
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1988 INDEX: 1605
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1989 INDEX: 1623
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<td>4. PROJECT TITLE Modernization</td>
<td>5. PROJECT NUMBER TEMP</td>
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<td>Igloo Storage</td>
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**SUPPLEMENTAL DATA**

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY (404 $000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY (0 PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED NOV 86
   b. PERCENT COMPLETE AS OF JANUARY 15 1987 60
   c. PERCENT COMPLETE AS OF OCTOBER 1 1987 100
   d. DATE DESIGN COMPLETED FEB 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN YES X NO NA

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS 70
   b. ALL OTHER DESIGN COSTS 70
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e) 70
   d. CONTRACT 70
   e. IN HOUSE 70

4. CONSTRUCTION START DATE (PLANNED) APR 88
1. COMPONENT
ARMY

2. DATE
Jan 1987

3. INSTALLATION AND LOCATION
Lone Star Army Ammunition Pt
Texas

4. PROJECT TITLE
Modernization
Chem Lab Rehabilitation

5. PROGRAM ELEMENT
6. CATEGORY CODE
7. PROJECT NUMBER
8. PROJECT COST ($000)
226 90
2700-03
550

9. COST ESTIMATES

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| SUPPORT FACILITIES | |

| SUBTOTAL | 473 |
| CONTINGENCY PERCENT (10.00%) | |
| TOTAL CONTRACT COST | 520 |
| SUPERVISION, INSPECT & OVHD (5.50%) | 29 |
| TOTAL REQUEST | 549 |
| TOTAL REQUEST (ROUNDED) | 550 |
| INSTALLED EQUIPMENT-OTHER APPROP | (10) |

10. Description of Proposed Construction

Rehabilitate this plant's production chem lab, to include replacement of
1) six work tables including drain troughs, sinks; 2) eight fume exhaust
hood stations; 3) window air conditioning system in the instrument room with
a central environmental unit; 4) deteriorated conductive flooring. Also
includes modification of the heating system, installation of an air
exchanger in the storage room, and construction of a storage facility for
hazardous gas cylinders. Site plan/safety submission not required. Hazard
analysis not required. Procurement of or in-house manufacture of any
equipment or item will meet current OSHA, Army, Federal, State, or Local
regulation or law, whichever is more stringent. Heating and air conditioning
required.

11. REQUIREMENT: 6,049 SF
ADEQUATE: 0 SF
SUBSTD: 6,049 SF
PROJECT:
Rehabilitation of existing I-13 Chemical Laboratory

REQUIREMENT:
Required to perform analysis of various production chemical mixes for explosives content and environmental tests.

CURRENT SITUATION:
The existing Chem Lab was constructed in 1941/42. It is an unsafe antiquated, and deteriorated facility where various chemicals and explosives are handled daily. The facility in its present deteriorated condition is totally inadequate to provide a clean and safe environment for laboratory personnel.

IMPACT IF NOT PROVIDED:
There are no alternatives to this project if the existing Chem Lab is to be rehabilitated into an efficient, safe operating facility. In actuality, there are two alternates; one, continue to use the existing facility as is. This is not practical due to the deteriorated obsolete and unsafe condition of the existing facility. Two, build a new facility. This is impractical due to the much larger expenditures that would be required. The rehabilitation of the existing facility is the only practical alternative.

ADDITIONAL:
This project has been reviewed for historic impact and complies with the intent of PL 89-665 and Executive Order 11593. All appropriate measures will be taken to ensure that the health of the worker is protected within all existing state and federal laws and regulations. This project has been
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<td>Chem Lab Rehabilitation</td>
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REQUIREMENT:
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CURRENT SITUATION:
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IMPACT IF NOT PROVIDED:
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<td>Lone Star Army Ammunition Pt</td>
</tr>
<tr>
<td>Texas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. PROJECT TITLE</th>
<th>5. PROJECT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modernization</td>
<td>TEMP</td>
</tr>
<tr>
<td>Chem Lab Rehabilitation</td>
<td>2700-03</td>
</tr>
</tbody>
</table>

Reviewed and it has been determined that an Environmental Impact Statement pursuant to PL 91-190 is not required.

/S/ DOUGLAS R. BAKER
DOUGLAS R. BAKER
LTC ORDC
COMMANDING

<table>
<thead>
<tr>
<th>ESTIMATED CONSTRUCTION START:</th>
<th>APRIL 1988</th>
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<tr>
<td>ESTIMATED MIDPOINT OF CONSTRUCTION:</td>
<td>DECEMBER 1988</td>
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<tr>
<td>ESTIMATED CONSTRUCTION COMPLETION:</td>
<td>SEPTEMBER 1989</td>
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</table>

INDEX: 1575
INDEX: 1612
INDEX: 1645
### FY 1988 MILITARY CONSTRUCTION PROJECT DATA

#### 1. COMPONENT
- Army

#### 2. DATE
- Jan 1987

#### 3. INSTALLATION AND LOCATION
- Lone Star Army Ammunition Pt
- Texas

#### 4. PROJECT TITLE
- Modernization
- Chem Lab Rehabilitation

#### 5. PROJECT NUMBER
- TEMP
- 2700-03

### SUPPLEMENTAL DATA

<table>
<thead>
<tr>
<th>A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY</th>
<th>( ($000) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY</td>
<td>( \text{(PEOPLE)} )</td>
</tr>
<tr>
<td>C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY</td>
<td>( ($000) )</td>
</tr>
<tr>
<td>D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT</td>
<td>( ($000) )</td>
</tr>
</tbody>
</table>

### E. PLANNING AND DESIGN DATA (ESTIMATE)

1. **STATUS**
   - a. Date Design Started: Oct 85
   - b. Percent Complete As of January 15 1987: 100
   - c. Percent Complete As of October 1 1987: 100
   - d. Date Design Completed: Dec 86

2. **BASIS**
   - a. Standard or Definitive Design: Yes
   - b. Where Design Was Most Recently Used:

3. **COST (TOTAL - $000)**
   - a. Production of Plans and Specs
   - b. All Other Design Costs
   - c. Total Cost \( (c) = (a)+(b) \) OR \( (d)+(e) \)
   - d. Contract
   - e. In House

4. **CONSTRUCTION START DATE (PLANNED)**

---

**DD FORM 1391c**

*PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED*
ARMY FY 1988 MILITARY CONSTRUCTION PROJECT DATA

3. INSTALLATION AND LOCATION
Ravenna Army Ammunition Pt
Ohio

4. PROJECT TITLE
Modernization
Intru Alarm Sys./Locks/Hasps

5. PROGRAM ELEMENT
6. CATEGORY CODE
880 40

7. PROJECT NUMBER
8. PROJECT COST ($000)
TEMP
2800-3
2,600

9. COST ESTIMATES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
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<tr>
<td>PRIMARY FACILITY</td>
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<tr>
<td>ALARM SYSTEM CONSTRUCTION</td>
<td>LS</td>
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<td>--</td>
<td>(1,481)</td>
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<tr>
<td>ALARM SYSTEM EQUIP COSTS</td>
<td>LS</td>
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<td>(292)</td>
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<tr>
<td>AMC ENGR SUPPORT, VECR, FEE</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>(163)</td>
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</tbody>
</table>

SUPPORT FACILITIES

SUBTOTAL
CONTINGENCY PERCENT (10.00%)
TOTAL CONTRACT COST
SUPERVISION, INSPECT & OVHD (5.50%)
TOTAL REQUEST
TOTAL REQUEST (ROUNDED)
INSTALLED EQUIPMENT-OTHER APPROP

2,236
224
2,460
135
2,595
2,600
0

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Provide and install approved locks and hasps in accordance with AR 190-11 on seven hundred seventy-six (776) earth-covered and above-ground storage magazines. Storage magazines are located in areas throughout the facility. Provide an intrusion detection system on thirty-eight (38) earth-covered storage igloos with control console located at security police headquarters. Storage igloos are all located in Block C. Project will provide for exterior lighting on each igloo including all electric service and communications cable necessary to service the IDS equipment and the lights. Fencing shall be provided around the IDS area with necessary gates and road extensions.

11. REQUIREMENT: 58 BX ADEQUATE: 0 BX SUBSTD: 58 BX
PROJECT:

This project includes the purchase and installation of approved high-security locks and hasps in accordance with AR 190-11 on 776 earth-covered and/or aboveground storage magazines. On 38 selected sites the earth-covered storage magazines will require IDS equipment, lights, and fencing to satisfy AA&E Category II storage requirements.

REQUIREMENT:

This project is required to comply with the security requirements of DOD Manual 5100.76M which requires approved locks and hasps IAW AR 190-11 for all arms, ammunition, and explosive storage. The 38 selected sites must comply with the security requirements of DOD Manual 5100.76M for the storage of Category II AA&E which requires IDS, lights, and security fencing. This project will eliminate the need for two-hour frequency patrols of the Category II storage area and will also improve the security of sensitive AA&E.

CURRENT SITUATION:

Currently Category II AA&E are stored in underground magazines which are not in compliance with regulations requiring high security locks and hasps, intrusion detection equipment, lighting, and fencing. Other Category III and IV AA&E are stored in underground and/or aboveground magazines which are not in compliance with regulations requiring high security locks and hasps. A need to waive existing regulations will have to be granted if the proposed work is not accomplished.

IMPACT IF NOT PROVIDED:

Failure to approve this project will mean this installation will not be in compliance with the previously stated regulations. A waiver or exception will have to be granted. On Category II storage security patrols will have
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1988 MILITARY CONSTRUCTION PROJECT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARMY</td>
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<table>
<thead>
<tr>
<th>2. DATE</th>
<th>JAN 1987</th>
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<thead>
<tr>
<th>3. INSTALLATION AND LOCATION</th>
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<tbody>
<tr>
<td>Ravenna Army Ammunition Pt</td>
<td>Ohio</td>
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<table>
<thead>
<tr>
<th>4. PROJECT TITLE</th>
<th>Modernization</th>
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</thead>
<tbody>
<tr>
<td>Mobilization</td>
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</tr>
<tr>
<td>GROUP 3</td>
<td></td>
</tr>
<tr>
<td>Intru Alarm Sys/</td>
<td></td>
</tr>
<tr>
<td>Locks/Hasps</td>
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<table>
<thead>
<tr>
<th>5. PROJECT NUMBER</th>
<th>TEMP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2800-3</td>
</tr>
</tbody>
</table>

To be maintained at two-hour intervals until project is complete and operational or waiver is granted.

/S/ Robert J. Kasper
Robert J. Kasper
Commanding Officers Rep.

<table>
<thead>
<tr>
<th>ESTIMATED CONSTRUCTION START:</th>
<th>APRIL 1988</th>
<th>INDEX: 1575</th>
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<tr>
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<td>OCTOBER 1988</td>
<td>INDEX: 1605</td>
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<td>APRIL 1989</td>
<td>INDEX: 1623</td>
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<tr>
<td>1. COMPONENT</td>
<td>FY 1988 MILITARY CONSTRUCTION PROJECT DATA</td>
<td></td>
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<tr>
<td>--------------</td>
<td>------------------------------------------</td>
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</tr>
<tr>
<td>ARMY</td>
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| 2. DATE      | JAN 1987|

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<tr>
<th>3. INSTALLATION AND LOCATION</th>
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<tbody>
<tr>
<td>Ravenna Army Ammunition Pt</td>
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<td>Ohio</td>
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<tr>
<th>4. PROJECT TITLE</th>
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<tbody>
<tr>
<td>Mobilization GROUP 3</td>
<td>TEMP 2800-3</td>
</tr>
<tr>
<td>Modernization</td>
<td></td>
</tr>
<tr>
<td>Intru Alarm Sys/Locks/Hasps</td>
<td></td>
</tr>
</tbody>
</table>

### SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY 154.4 ($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY 4 (PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT

### E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED ............... SEPT 86
   b. PERCENT COMPLETE AS OF JANUARY 15 1987 95
   c. PERCENT COMPLETE AS OF OCTOBER 1 1987 100
   d. DATE DESIGN COMPLETED ............. FEB 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN YES NO
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. COST (TOTAL = $000)
   a. PRODUCTION OF PLANS AND SPECS ............
   b. ALL OTHER DESIGN COSTS ..................
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e) ....
   d. CONTRACT ................................
   e. IN HOUSE ................................

4. CONSTRUCTION START DATE (PLANNED) ...........

PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED
This project will consist of replacing/rehabilitating security fencing from a designated point on the west side of the installation to gate IA - a distance of approximately 12.9 miles. Most of the existing fencing is approximately 20 years old. Some sections consisting of approximately 2.8 miles which have been rehabilitated may, where feasible, be retained in the current status. In addition, the fencing around the two water pump stations which consist of approximately 0.6 miles of fence will be replaced. The removed fencing is to be delivered to the salvage yard for disposal.

The new fencing and hardware are to be in compliance with the latest revision of STD 646. It shall be of type FE-6, 7 foot fabric with appropriate hardware. Gates 5A, 6, and 7 and four gates at the pump stations are to be replaced in kind with matching hardware in accordance with STD 646.
1. COMPONENT

FY 1988 MILITARY CONSTRUCTION PROJECT DATA

2. DATE

JAN 1987

3. INSTALLATION AND LOCATION

VOLUNTEER ARMY AMMO PLANT
Tennessee

4. PROJECT TITLE

Modernization
Security Fencing

5. PROJECT NUMBER

TEMP
5882800

DESCRIPTION OF PROPOSED CONSTRUCTION

Terrain along the bottom of the fence shall be graded to provide a surface which is within 2 inches of the bottom of the fabric for the entire length. This grading shall be accomplished in such a way as to optimize drainage to prevent washing under and near the fence.

Clear zones shall extend 12 feet on the outside and 30 feet on the inside of the fence (available real estate permitting).

Material is to be in accordance with Federal Specification RR-F-1F with installation as specified and in accordance with accepted industry best practice. Grounding is to be in accordance with STD 645.

Temporary fencing sections are to be provided sequentially as increments of the existing fence are removed and the new erected. This is to be done in such a way as to maintain the required security throughout the entire construction period.

II. REQUIREMENT: 68,100 LF ADEQUATE: 23,500 LF SUBSTD: 44,600 LF

Project:

Replacement/rehabilitation of 44,600 LF of security (perimeter) fencing.

Requirement:

Completion of this project is required to bring the security (perimeter) fence into compliance with security specifications referenced in the DSAR letter of 8 Dec. 1982 regarding security upgrade projects.

Current Situation:

Increasing maintenance problems are being experienced. The fence has many weak sections where the fabric is in very poor condition and is beyond the point of economically feasible routine maintenance. It does not meet the current minimum height requirement in several areas.
### Project Data

<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1988 MILITARY CONSTRUCTION PROJECT DATA</th>
<th>2. DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARMY</td>
<td></td>
<td>JAN 88</td>
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<table>
<thead>
<tr>
<th>3. INSTALLATION AND LOCATION</th>
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<tbody>
<tr>
<td>VOLUNTEER ARMY AMMO PLANT</td>
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<td>Tennessee</td>
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<tr>
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<tr>
<td>Security Fencing</td>
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<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>TEMP</td>
</tr>
<tr>
<td>5882800</td>
</tr>
</tbody>
</table>

**IMPACT IF NOT PROVIDED:**

It not provided, the installation will remain in non-compliance of the minimum height requirement in several areas. Sections of the fence have deteriorated to the extent that breaching would not be difficult. Increasing maintenance costs and further deterioration of installation security will become problems of significant magnitude.

/S/ James E. Fry  
James E. Fry  
Civilian  
Commander's Representative

<table>
<thead>
<tr>
<th>ESTIMATED CONSTRUCTION START:</th>
</tr>
</thead>
<tbody>
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<td>APRIL 1987 INDEX: 1523</td>
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</table>
### COMPONENT

**ARMY**

### INSTALLATION AND LOCATION

**VOLUNTEER ARMY AMMO PLANT**  
Tennessee

### PROJECT TITLE

Modernization  
Security Fencing

### PROJECT NUMBER

TEMP  
5882800

---

#### SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY  
($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY  
OUT THE FUNCTION OF THE PROPOSED FACILITY ........  
(PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN  
THE DESIRED FACILITY  
($000)

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN  
THE EXISTING FACILITY IF NEW FACILITY IS A  
REPLACEMENT .......................................  
($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED  
      AUG 36
   b. PERCENT COMPLETE AS OF JANUARY 15 1987.. 95
   c. PERCENT COMPLETE AS OF OCTOBER 1 1987.. 100
   d. DATE DESIGN COMPLETED  
      JAN 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN  
      YES
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS .................
   b. ALL OTHER DESIGN COSTS.........................
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e)............
   d. CONTRACT........................................
   e. IN HOUSE........................................

4. CONSTRUCTION START DATE (PLANNED).............

---

**DD FORM 1391c**  
PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED  
PAGE NO. 71
**1. Component**  
**Army**  
**2. Date:**

**3. Installation and Location**  
Lake City Army Ammo Plant  
Missouri

**4. Project Title:** Security Improvements

**5. Program Element:**  
872 15

**6. Category Code:**

**7. Project Number:** 2800-07

**8. Project Cost ($000):** 1,150

**9. Cost Estimates**

<table>
<thead>
<tr>
<th>Item</th>
<th>U/M</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY FACILITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road, Fencing &amp; Turnstile Installation</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>1,045</td>
</tr>
<tr>
<td>SUPPORT FACILITIES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| SUBTOTAL                                   |     |          |           | 1,045    |
| CONTINGENCY PERCENT (5.00%)                |     |          |           | 52       |
| TOTAL CONTRACT COST                        |     |          |           | 1,097    |
| SUPERVISION, INSPECT & O/VHD (5.50%)       |     |          |           | 60       |
| TOTAL REQUEST                              |     |          |           | 1,157    |
| TOTAL REQUEST (ROUNDED)                    |     |          |           | 1,150    |
| INSTALLED EQUIPMENT-OTHER APPROP           |     |          |           | 0        |

**10. Description of Proposed Construction**

- **Task 1** - To provide access road to Building 35 which will be outside the restricted area. Provide a fenced corridor to restrict employee access to restricted areas when going to and from Building 65. Provide and install security turnstiles (13), badge readers and associated electronics to limit access to restricted areas to authorized personnel.

- **Task 2** - Provide locks and hasps for Energetic Material Storage buildings (31).

- **Task 3** - Provide IDS equipment for energetic Material Storage Control and communications link to guard headquarters.

- **Task 4** - Provide and install Closed Circuit Television Systems (CCTV) to monitor areas in several buildings. Where complete rounds are processed or stored and for monitoring the restricted area access on the corridor to
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1988 MILITARY CONSTRUCTION PROJECT DATA</th>
<th>2. DATE</th>
</tr>
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<tbody>
<tr>
<td>ARMY</td>
<td></td>
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<table>
<thead>
<tr>
<th>3. INSTALLATION AND LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake City Army Ammo Plant</td>
</tr>
<tr>
<td>Missouri</td>
</tr>
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<thead>
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<th>4. PROJECT TITLE</th>
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<tbody>
<tr>
<td>Security Improvements</td>
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<table>
<thead>
<tr>
<th>5. PROJECT NUMBER</th>
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</thead>
<tbody>
<tr>
<td>TEMP</td>
</tr>
<tr>
<td>2800-07</td>
</tr>
</tbody>
</table>

**DESCRIPTION OF PROPOSED CONSTRUCTION (CONT)...

Building 65.

Task 5 - Provide security for certain ADP areas.

Task 6 - Provide remote duress alarms in high priority areas (Command Group, GOCO Operator Management Offices, and certain remote guard locations).

**11. REQUIREMENT:  **

1 EA ADEQUATE: EA SUBSTD: 0 EA

PROJECT:

This project consists of six (6) security improvement tasks as described in paragraph 10F.

**REQUIREMENT:**

This project is required to provide necessary security of restricted areas by routing personnel around such areas or by improving personnel monitoring through such areas. This project is required to eliminate security waivers in areas where the corrective action brings the affected area of buildings into total compliance with security requirements. This project is required to provide necessary security of energetic materials, completed rounds of ammunition in process or storage, ADP areas and command group areas. Due to the nature of this requirement, there are no acceptable alternatives to this project.

**CURRENT SITUATION:**

Security measures in areas encompassed by this project are presently inadequate according to current security requirements. Responsiveness to unauthorized intrusions is limited with current security measures.

**IMPACT IF NOT PROVIDED:**

Current security measures will continue to be utilized with limited effectiveness and responsiveness. Security requirement waivers will continue to be necessary. Security according to current requirements can not be
<table>
<thead>
<tr>
<th>Component</th>
<th>1988 Military Construction Project Data</th>
<th>Date</th>
<th>Jan 1987</th>
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<tbody>
<tr>
<td>3. Installation and Location</td>
<td>Lake City Army Ammo Plant Missouri</td>
<td>4. Project Title</td>
<td>Security Improvements</td>
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<tr>
<td>5. Project Number</td>
<td>TEMP</td>
<td>2800-07</td>
<td></td>
</tr>
</tbody>
</table>

**Impact If Not Provided:** (Cont)...

obtained in areas in question.

**Additional:**

This project will result in some reductions in security personnel.

/S/ DENNIS E. O’RIEN
DENNIS E. O’RIEN
LTC, OD
Commanding Officer

**Estimated Construction Start:** APRIL 1988 INDEX: 1575
**Estimated Midpoint of Construction:** OCTOBER 1988 INDEX: 1605
**Estimated Construction Completion:** APRIL 1989 INDEX: 1623
### 1. COMPONENT
- ARMY

### 2. DATE
- JAN 1987

### 3. INSTALLATION AND LOCATION
- Lake City Army Ammo Plant
- Missouri

### 4. PROJECT TITLE
- Security Improvements

### 5. PROJECT NUMBER
- TEMP 2800-07

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**SUPPLEMENTAL DATA**

<table>
<thead>
<tr>
<th>A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY (PEOPLE)</td>
</tr>
<tr>
<td>C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY ($000)</td>
</tr>
<tr>
<td>D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT ($000)</td>
</tr>
</tbody>
</table>

**E. PLANNING AND DESIGN DATA (ESTIMATE)**

1. **STATUS**
   - a. DATE DESIGN STARTED: OCT 86
   - b. PERCENT COMPLETE AS OF JANUARY 15, 1987: 10
   - c. PERCENT COMPLETE AS OF OCTOBER 1, 1987: 100
   - d. DATE DESIGN COMPLETED: OCT 87

2. **BASIS**
   - a. STANDARD OR DEFINITIVE DESIGN: YES
   - b. WHERE DESIGN WAS MOST RECENTLY USED:

3. **COST (TOTAL - $000)**
   - a. PRODUCTION OF PLANS AND SPECS
   - b. ALL OTHER DESIGN COSTS
   - c. TOTAL COST (c) = (a) + (b) OR (d) + (e)
   - d. CONTRACT
   - e. IN HOUSE

4. **CONSTRUCTION START DATE (PLANNED): APR 88**
DEPARTMENT OF THE ARMY
JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1988/1989

FY 1989 - PRODUCTION BASE SUPPORT

APPROPRIATION: Procurement of Ammunition, Army

ACTIVITY 2 - Production Base Support

<table>
<thead>
<tr>
<th>Army Ammunition Installation</th>
<th>Project No.</th>
<th>Project Title</th>
<th>Cost Estimate ($000)</th>
<th>Page No.</th>
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<tbody>
<tr>
<td>Holston Army PT, Tennessee</td>
<td>5892055</td>
<td>Modernization Explosive Loading Dock</td>
<td>3.350</td>
<td>78</td>
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<td>Lake City Army PT, Missouri</td>
<td>5892495</td>
<td>Demolition &amp; Relocate &amp; Mod TNE Process</td>
<td>2.150</td>
<td>82</td>
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<tr>
<td>Lake City Army PT, Missouri</td>
<td>5892498</td>
<td>Alteration Covered Walkway Pyro Storage</td>
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<tr>
<td>Indiana Army PT, Indiana</td>
<td>5892547</td>
<td>Modernization Lighting Protection</td>
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<td>5895330-13</td>
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<tr>
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<td>Construction Commercial Truck Do</td>
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<tr>
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<td>Replace Oil Storage Tank</td>
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<tr>
<td>Milan Army PT, Tennessee</td>
<td>5895317-18</td>
<td>Maz Mat Stg Bldg-Area S</td>
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<tr>
<td>Milan Army PT, Tennessee</td>
<td>5895317-20</td>
<td>Replace Inflatable Shelter</td>
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</table>
## DEPARTMENT OF THE ARMY
### JUSTIFICATION OF ESTIMATES FOR FISCAL YEAR 1988/1989

**FY 1989 - PRODUCTION BASE SUPPORT**

(Cont'd)

### APPROPRIATION: Procurement of Ammunition, Army

**ACTIVITY 2 - Production Base Support**

### Army Ammunition Installation

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Title</th>
<th>Cost Estimate ($000)</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5895326-16</td>
<td>Replacement Replace (5) Barricades</td>
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<td>5892519</td>
<td>Safety Modernization Upgrade Primary Overhead Electrica</td>
<td>14,200</td>
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<tr>
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<td>Replacement Replace Bridge No. 930</td>
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<td>5895201-22</td>
<td>Addition Package Boilers</td>
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<td>892245</td>
<td>Addition Pyrotechnic Safety Enhance</td>
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<td>532918</td>
<td>Enlarge Railroad Docks</td>
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<td>2701-08</td>
<td>Alteration Red Exp to Energ Mat'1</td>
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<td>2800-8</td>
<td>Igloo Storage</td>
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<td>2701-2</td>
<td>Alteration Electrical SF Corrections</td>
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1. COMPONENT ARMY
2. DATE JAN 1987
3. INSTALLATION AND LOCATION HOLSTON ARMY AMMUNITION PT--12034 Tennessee
4. PROJECT TITLE Modernization
Explosive Loading Dock
5. PROGRAM ELEMENT
6. CATEGORY CODE
7. PROJECT NUMBER TEMP
8. PROJECT COST ($000)
9. COST ESTIMATES
10. DESCRIPTION OF PROPOSED CONSTRUCTION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>COST ($000)</th>
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<tr>
<td>Loading dock Barricades</td>
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<td>2,593</td>
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<tr>
<td>Loading Dock Facility</td>
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<tr>
<td>Rails, Walks, Roads</td>
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<tr>
<td>Utilities</td>
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<tr>
<td>Battery Charging Station</td>
<td>LS</td>
<td>--</td>
<td>274</td>
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<tr>
<td>Site Imp(311)Demo( )</td>
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<td>--</td>
<td>101</td>
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</table>

SUBTOTAL | 2,904 |
CONTINGENCY PERCENT (10.00%) | 290 |
TOTAL CONTRACT COST | 3,194 |
SUPERVISION, INSPECT & OVHD (5.50%) | 176 |
TOTAL REQUEST | 3,370 |
INSTALLED EQUIPMENT-OTHER APPROP | 3,350 |

Description of Proposed Construction

Construct new loading dock for shipment of explosives. Scope of work includes: demolition of existing loading dock; construction of new loading dock; construction of explosion protection barricades; installation of utilities; access roads railroad spur; and general site improvements as required. Project includes battery charging station for electric forklifts.

11. REQUIREMENT: SF ADEQUATE: 0 SF SUBSTD: 0 SF PROJECT:

Construct a new explosives loading dock with a 50,000 pound explosives limit. Provide road, parking area, railroad spur, barricade and modern packaging equipment.
1. COMPONENT
   ARMY

2. DATE
   JAN 1967

3. INSTALLATION AND LOCATION
   HOLSTON ARMY AMMUNITION PT--12034
   Tennessee

4. PROJECT TITLE
   Modernization
   Explosive Loading Dock

5. PROJECT NUMBER
   TEMP
   2055

REQUIREMENT:

The new dock will replace an inadequate, deteriorated facility. Construction of a new loading dock is essential to provide the capability to simultaneously outload a larger variety of products and to permit palletization of finished explosives resulting in a more efficient operation and the ability to meet FYDP and mobilization requirements.

CURRENT SITUATION:

Currently two of the loading docks at Holston are seriously deteriorated. The timber floors in these docks will not support forklifts nor handle palletized loads due to the small size of the buildings.

IMPACT IF NOT PROVIDED:

Improvement of the industrial readiness posture for loading finished explosives will not be realized if this project is not funded. The capability to handle a larger variety of products and to palletize the finished explosives will not be achieved.

ADDITIONAL:

An environmental assessment will be prepared. It is expected that there will be no significant impact to the environment.

A site/Safety Plan has been submitted and approved.
This project is necessary to meet FYDP and mobilization requirements. Reference SRP-7.

/S/ JAMES F. BALD, JR  
JAMES F. BALD, JR  
LTC, OD  
Commanding

<table>
<thead>
<tr>
<th>ESTIMATED CONSTRUCTION START:</th>
<th>JUNE 1990</th>
<th>INDEX: 1674</th>
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<td>JULY 1991</td>
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<td>SEPTEMBER 1992</td>
<td>INDEX: 1766</td>
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1. COMPONENT
ARMY

2. DATE

3. INSTALLATION AND LOCATION
HOLSTON ARMY AMMUNITION PT--12034
Tennessee

4. PROJECT TITLE
Modernization
Explosive Loading Dock

5. PROJECT NUMBER
TEMP
2055

**SUPPLEMENTAL DATA**

<table>
<thead>
<tr>
<th>A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY</th>
<th>165 ($000)</th>
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<tbody>
<tr>
<td>B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY</td>
<td>0 (PEOPLE)</td>
</tr>
<tr>
<td>C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY</td>
<td>6846 ($000)</td>
</tr>
<tr>
<td>D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT</td>
<td>NA ($000)</td>
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**E. PLANNING AND DESIGN DATA (ESTIMATE)**

1. STATUS
   a. DATE DESIGN STARTED | MAR 87
   b. PERCENT COMPLETE AS OF JANUARY 15 1988 | 60
   c. PERCENT COMPLETE AS OF OCTOBER 1 1988 | 100
   d. DATE DESIGN COMPLETED | MAY 88

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN | YES
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS | 192
   b. ALL OTHER DESIGN COSTS | 192
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e) | 192
   d. CONTRACT | 192
   e. IN HOUSE | 192

4. CONSTRUCTION START DATE (PLANNED) | MAR 89
### 1. COMPONENT
ARmY

### 2. DATE
FY 1989

### 3. INSTALLATION AND LOCATION
Lake City Army Ammo Plant
Missouri

### 4. PROJECT TITLE
Mobil Group 1
Demolition
Relocate & Mod TNR Process

### 5. PROGRAM ELEMENT

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<thead>
<tr>
<th>PRIMARY FACILITY</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
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<tr>
<td>Explosive Neutralizing Bldg.</td>
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<td>--</td>
<td>972</td>
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<tr>
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<tr>
<td>Enclosed Cartways</td>
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### 6. CATEGORY CODE

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<th>UNIT COST</th>
<th>COST ($000)</th>
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<td>--</td>
<td>974</td>
</tr>
<tr>
<td>Water, Sewer &amp; Gas</td>
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<td>--</td>
<td>--</td>
<td>972</td>
</tr>
<tr>
<td>Paving, Walks, Curbs &amp; Gutters</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>257</td>
</tr>
<tr>
<td>Storm Drainage</td>
<td>LS</td>
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<td>450</td>
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<tr>
<td>Site Improvements</td>
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<td>97</td>
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<tr>
<td>Communication</td>
<td>LS</td>
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<td>257</td>
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<tr>
<td>Other</td>
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<td>450</td>
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</table>

### 7. PROJECT NUMBER
226 16

### 8. PROJECT COST ($000)

| TEMP | T892495 | 2,150 |

### 9. COST ESTIMATES

| SUBTOTAL | 1,946 |
| CONTINGENCY PERCENT : 5.00% | 97 |
| TOTAL CONTRACT COST | 2,043 |
| SUPERVISION, INSPECT & OvHD : 5.50% | 112 |
| TOTAL REQUEST | 2,155 |
| TOTAL REQUEST (ROUNDED) | 2,150 |
| INSTALLED EQUIPMENT-OTHER APPROP | 2,591 |

### 10. DESCRIPTION OF PROPOSED CONSTRUCTION
The primary facilities consist of two new fire-resistant, non-combustible buildings of permanent construction. The first facility will be an explosive manufacturing building (2,700 square feet) and the second facility a hazardous waste treatment building (1,350 square feet). The explosive manufactured in the building will be Trinitroresorcinol (TNR) a styphnic acid. The TNR produced is used to manufacture Lead Styphnate, a major component in the primer mixture used at the installation. The hazardous waste treatment building will neutralize the wash water waste and then neutralize the waste explosives. Demolition consists of the existing Buildings 82, 83, 94D, T-226 and T-85A. Building 82 is presently utilized for acid and explosive neutralization. Building 83 is presently used for TNR manufacturing. Building 94D, T-226 and T-85A are support facilities for chemical storage, metal powder storage and general supply storage respectively. The existing grounds will be returned to its natural terrain.

### 11. REQUIREMENT:
4,050 SF ADEQUATE: 0 SF SUBSTD: 3,800 SF
1. COMPONENT
   ARMY

2. DATE
   JAN 1987

3. INSTALLATION AND LOCATION
   Lake City Army Ammo Plant
   Missouri

4. PROJECT TITLE
   Demolition
   Relocate & Mod TNR Process

5. PROJECT NUMBER
   T892495

PROJECT:
This project will increase employee safety, decrease environmental impact, eliminate the use for an unsound structure, and improve the control of process variables in the manufacturing of Trinitroresorcinol (TNR).

REQUIREMENT:
Employee safety will be improved by use of automatic feed equipment, a ventilation system and a remote automatic control room. The automatic feed equipment will reduce the operators' exposure to the 98% Sulfuric Acid and 96% Nitric Acid which are used in the production process. The improved ventilation system will reduce operators' exposure to nitrous oxides and other hazardous fumes. The remote control room will reduce the chance that an operator could be exposed to acid or exposure to an explosion of the reactor kettles due to a runaway reaction. The environmental impact will be decreased by changing the process and using wet scrubbers on the improved ventilation system. The enhanced process reduces fumes and the scrubber will remove the nitrous oxides and other hazardous fumes to the atmosphere. The explosive neutralization facility will better desensitize the explosive waste. The new acid resistant building will be constructed and new production equipment will be furnished for this facility to replace the existing facilities, which the Army Corps of Engineers reported as unsound. The operator will be permitted to remotely monitor all process variables accurately that effect the product in the isolated control room.

CURRENT SITUATION:
The TNR is currently manufactured using the same buildings, process and process equipment used in 1942 when the facilities were installed. Continued exposure of the facilities to nitric acid, sulfuric acid and the fumes evolved from these acids has caused the structural members and concrete foundations to deteriorate to such a degree that renovation is uneconomical. Waste from the process is largely sulfuric and nitric acids. The new process dramatically reduces this acidic condition. The present explosive waste is labor intensive and minimal process control. The waste is then pumped to an evaporation lagoon. The fumes from the process are currently discharged directly to the atmosphere. Employees are now exposed to toxic fumes on the average of twice per operating shift. Employees are now manually loading the toxic and acidic chemicals to the reaction kettle in producing the TNR. This exposes them to the hazards of fumes, spills or detonation. Presently all processes require manual operation for loading, washing, packing and neutralization.
<table>
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<tr>
<th>COMPONENT</th>
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<tr>
<td>3. INSTALLATION AND LOCATION</td>
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<tr>
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<td>4. PROJECT Ti害ilization Group 1</td>
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<td>Relocate &amp; Mod TNR Process</td>
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<td>TEMP</td>
</tr>
<tr>
<td></td>
<td>T892495</td>
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</tbody>
</table>

IMPACT IF NOT PROVIDED:
If this project is not approved, it will result in the continued use of deteriorating facilities and manual procedures that endanger life and property. LCAAP is the only Government installation capable of processing TNR.

ADDITIONAL:
This project is programmed in Modernization as Project No. 5892495. JPO:kah 23806

Dennis E. O'Brien
Lieutenant Colonel
Commanding Officer

ESTIMATED CONSTRUCTION START: APRIL 1989 INDEX: 1623
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1989 INDEX: 1650
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1990 INDEX: 1666
## MILITARY CONSTRUCTION PROJECT DATA

### COMPONENT
- **Army**

### INSTALLATION AND LOCATION
- **Lake City Army Ammo Plant**
- **Missouri**

### PROJECT TITLE
- Demolition
- Relocate & Mod TNR Process

### PROJECT NUMBER
- **Production**
- **T892495**

### SUPPLEMENTAL DATA

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<td>B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY</td>
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</tr>
<tr>
<td>C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY</td>
<td>2,295,000 ($000)</td>
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<td>D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT</td>
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### PLANNING AND DESIGN DATA (ESTIMATE)

1. **STATUS**
   - a. DATE DESIGN STARTED | MAY 86
   - b. PERCENT COMPLETE AS OF JANUARY 15, 1988 | 100
   - c. PERCENT COMPLETE AS OF OCTOBER 1, 1988 | 100
   - d. DATE DESIGN COMPLETED | DEC 87

2. **BASIS**
   - a. STANDARD OR DEFINITIVE DESIGN | YES
   - b. WHERE DESIGN WAS MOST RECENTLY USED:

3. **COST (TOTAL - $000)**
   - a. PRODUCTION OF PLANS AND SPECS
   - b. ALL OTHER DESIGN COSTS
   - c. TOTAL COST (c) = (a)+(b) OR (d)+(e)
   - d. CONTRACT
   - e. IN HOUSE

4. **CONSTRUCTION START DATE (PLANNED)** | APR 89
10. Description of Proposed Construction

This project totally encloses walkways in the pyrotechnic manufacturing areas where tracer, igniter and incendiary compositions are blended, dried and stored for small caliber ammunition. Also, two buildings (38D & 38E) will require relocation, barricading and walkways. Demolition of the existing two buildings (38D & 38E) relocated can then be accomplished.

11. REQUIREMENT: ADEQUATE: SUBSTD: 0

PROJECT:
To enhance personnel safety in the pyrotechnic manufacturing area by totally enclosing the walkways at the manufacturing area.

REQUIREMENT:
Exposure to operating personnel transporting pyrotechnic materials will be substantially reduced by the placement of a totally enclosed walkway that interconnects the manufacturing and storage buildings. This project will improve the walkways physical condition, thereby giving operating personnel a
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
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<tbody>
<tr>
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<table>
<thead>
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<th>2. DATE</th>
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<table>
<thead>
<tr>
<th>3. INSTALLATION AND LOCATION</th>
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</thead>
<tbody>
<tr>
<td>Lake City Army Ammo Plant</td>
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<tr>
<td>Missouri</td>
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<table>
<thead>
<tr>
<th>4. PROJECT TITLE</th>
<th>5. PROJECT NUMBER</th>
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<tr>
<td>Alteration</td>
<td>TEMPC</td>
</tr>
<tr>
<td>Covered Walkway Pyro Storage</td>
<td>T892498</td>
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</table>

REQUIREMENT:

consistent surface to walk and transport over. The elimination of these harsh conditions will remove the need for Grounds Support services to clean and maintain the walkways during inclement weather. The halting of 1-136 igniter cake production during rain, due to fire hazard of water reacting with strontium peroxide.

No other facilities at Lake City AAP are capable of manufacturing pyrotechnic materials. Consideration was given to a major consolidation of the storage and manufacturing facilities for pyrotechnic production. This proposal was determined not to be cost effective, when compared to this walkway project.

CURRENT SITUATION:

Operating personnel presently are exposed to inclement weather while pushing or carrying explosive pyrotechnic mixtures. Production processes will be delayed due to potential fire hazard and the need for snow and ice removal. Ground Support services are required to clean and maintain the walkways from weather maintenance. Wind blown rain or snow increases the exposure potential of the pyrotechnic materials. Continued exposure to wind chills below freezing is hazardous to the operating personnel transporting the explosive pyrotechnic materials.

IMPACT IF NOT PROVIDED:

If this project is not approved, it will result in the continued potential fire hazard with the igniter cake from rain exposure. Production delays will continue from the need to remove and clean walkways of snow and ice between the facilities. Operating personnel will continue to be exposed to hazards from the pyrotechnic materials reaction to weather and the inclement weather itself.

ADDITIONAL:

The construction of walkway enclosures will resolve the problems associated with personnel and material exposure during different types of inclement weather. The elimination of these harsh conditions will remove the need for Ground Support services to clean and maintain the walkways during and after inclement weather. This enables a smooth and unobstructed flow of materials in the pyrotechnic manufacturing and ammunition production areas.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
</tr>
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<tbody>
<tr>
<td>ARMY</td>
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<table>
<thead>
<tr>
<th>3. INSTALLATION AND LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake City Army Ammo Plant</td>
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<td>Missouri</td>
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<table>
<thead>
<tr>
<th>4. PROJECT TITLE</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>Alteration</td>
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<tr>
<td>Covered Walkway Pyro Storage</td>
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<table>
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<th>5. PROJECT NUMBER</th>
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<tbody>
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<tr>
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This project is programmed in Modernization as Project No. 5892498. JPO:kah 23820

Dennis E. O'Brien
Lieutenant Colonel
Commanding Officer

- ESTIMATED CONSTRUCTION START: APRIL 1989 INDEX: 1623
- ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1989 INDEX: 1650
- ESTIMATED CONSTRUCTION COMPLETION: APRIL 1990 INDEX: 1666
### SUPPLEMENTAL DATA

**A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY**
- $1,200 (000)

**B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY**
- 0 (PEOPLE)

**C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY**
- $1,245,000 (000)

**D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT**
- $1,405,000 (000)

**E. PLANNING AND DESIGN DATA (ESTIMATE)**

1. **STATUS**
   - **a. DATE DESIGN STARTED**
     - MAY 86
   - **b. PERCENT COMPLETE AS OF JANUARY 15 1988**
     - 100
   - **c. PERCENT COMPLETE AS OF OCTOBER 1 1988**
     - 100
   - **d. DATE DESIGN COMPLETED**
     - DEC 87

2. **Basis**
   - **a. STANDARD OR DEFINITIVE DESIGN**
     - YES
   - **b. WHERE DESIGN WAS MOST RECENTLY USED:**

3. **COST (TOTAL - 000)**
   - **a. PRODUCTION OF PLANS AND Specs**
   - **b. ALL OTHER DESIGN COSTS**
   - **c. TOTAL COST (c) = (a)+(b) OR (d)+(e)**
   - **d. CONTRACT**
   - **e. IN HOUSE**

4. **CONSTRUCTION START DATE (PLANNED)**
- APR 89

---

**Page No. 89**

PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED
Install new and upgrade existing lightning protection systems for compliance with AMCR 385-100. Work to include installation of lightning arrestors and associated cabling; installation of new and/or the upgrade of existing ground grid systems; and installation of system testing points for trailer loading and unloading areas at 7 trailer pads, 26 service magazines, 6 crating sheds, 10 igniter rest houses, 48 shiphouses, 173 igloos, 13 rail spurs, and 4 loading docks.

To provide updated lightning protection for mobile material handling equipment in accordance with AMCR 385-100.
REQUIREMENT:
This project is required to correct lightning protection deficiencies.

CURRENT SITUATION:
Currently, lightning protection is not adequate to provide protection to mobile material handling equipment being used during loading or unloading of ammunition items/components.

IMPACT IF NOT PROVIDED:
If this project is not provided, mobile material handling equipment will not have lightning protection, with consequent risk to both personnel and equipment.

ADDITIONAL:
An economic analysis is not necessary for the project. All potential alternatives were examined in the development of the project and none were found to be feasible.

/S/ TRANNIE W. SANDERSON
TRANNIE W. SANDERSON
LTC, CM
Commanding

ESTIMATED CONSTRUCTION START: JANUARY 1989 INDEX: 1616
ESTIMATED MIDPOINT OF CONSTRUCTION: FEBRUARY 1990 INDEX: 1662
ESTIMATED CONSTRUCTION COMPLETION: MARCH 1991 INDEX: 1706
### COMPONENT

**1.** FY 1989 MILITARY CONSTRUCTION PROJECT DATA

**2.** DATE

**3.** INSTALLATION AND LOCATION

**INDIANA ARMY AMMUNITION PT**

**Indiana**

**4.** PROJECT TITLE

Modernization

Lightning Protection

**5.** PROJECT NUMBER

TEMP

5892547

---

#### SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY

0 ($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY

0 (PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY

0 ($000)

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT

0 ($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED
   b. PERCENT COMPLETE AS OF JANUARY 15 1988
   c. PERCENT COMPLETE AS OF OCTOBER 1 1988
   d. DATE DESIGN COMPLETED

   NOV 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS
   b. ALL OTHER DESIGN COSTS
   c. TOTAL COST \( (c) = (a)+(b) \) OR \( (d)+(e) \)
   d. CONTRACT
   e. IN HOUSE

   167
   167
   115
   52

4. CONSTRUCTION START DATE (PLANNED)

JUN 89
<table>
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<tr>
<th>ITEM</th>
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<th>QUANTITY</th>
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</tr>
<tr>
<td>New Construction</td>
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<tr>
<td>SUPPORT FACILITIES</td>
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<tr>
<td>Paving, Walks, Curbs &amp; Gutters</td>
<td>LS</td>
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<td>--</td>
<td>(53)</td>
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<tr>
<td>Utilities, Paving, Site Work</td>
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<td>SUPERVISION, INSPECT &amp; OVHD (5.50%)</td>
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<td>TOTAL REQUEST</td>
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<td>TOTAL REQUEST (ROUNDED)</td>
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<td>INSTALLED EQUIPMENT-OTHER APPROP</td>
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<td>(21,247)</td>
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</table>

New construction, alteration, conversion, utilities services, paving and site work as required to modernize A-Composition production facilities on Line 10. Demolish five (5) substandard buildings (14,480 SF).

**II. REQUIREMENT:**

**SF ADEQUATE:** SF SUBSTD: 0 SF

**PROJECT:**

Modernize A-Composition production facilities on Line 10.

**REQUIREMENT:**

This project is required to establish sufficient production capability to meet mobilization end-product outpost levels for A-Composition explosives and to enhance production worker safety.
CURRENT SITUATION:
Line 10 is now configured for batch type production of B-Composition explosive and is presently in layaway. Modernization of Line 10 for A-Compositions manufacture is necessary to meet established modernization production rates. Holston is the sole producer of RDX explosives in the United States. Compositions A-3, A-4 and A-5 are coated RDX products used in press-loaded munitions.

IMPACT IF NOT PROVIDED:

If this project is not provided, the mobilization production levels for A-Composition explosives cannot be met and the existing batch process production facilities will continue to pose higher than necessary risks to production worker safety.

/ S/ JAMES F. BALD, JR
JAMES F. BALD, JR
LTG, OD
Commanding

ESTIMATED CONSTRUCTION START: APRIL 1989 INDEX: 1623
ESTIMATED MIDPOINT OF CONSTRUCTION: JUNE 1990 INDEX: 1674
ESTIMATED CONSTRUCTION COMPLETION: SEPTEMBER 1991 INDEX: 1725
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<td>2. DATE</td>
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<td>3. INSTALLATION AND LOCATION</td>
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<td>4. PROJECT TITLE</td>
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<tr>
<td>MOD Line 10, Comp A-5</td>
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<td>5. PROJECT NUMBER</td>
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### SUPPLEMENTAL DATA

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<tr>
<td>B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY</td>
<td>UNK (PEOPLE)</td>
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<td>C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY</td>
<td>UNK ($000)</td>
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<td>D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT</td>
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<tr>
<td>E. PLANNING AND DESIGN DATA (ESTIMATE)</td>
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<tr>
<td>1. STATUS</td>
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</tr>
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<tr>
<td>b. PERCENT COMPLETE AS OF JANUARY 15 1988</td>
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<td>c. PERCENT COMPLETE AS OF OCTOBER 1 1988</td>
<td>100</td>
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<td>d. DATE DESIGN COMPLETED</td>
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<td>b. WHERE DESIGN WAS MOST RECENTLY USED:</td>
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<td>3. COST (TOTAL - $000)</td>
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<td>c. TOTAL COST (c) = (a)+(b) OR (d)+(e)</td>
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<td>d. CONTRACT</td>
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<td>e. IN HOUSE</td>
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| 2. DATE          | JAN 1987                           |

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<th>5. PROJECT NUMBER</th>
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<tr>
<td>Modernization</td>
<td>0072000</td>
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<tr>
<td>MOD Line 10, Comp A-5</td>
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</table>

<table>
<thead>
<tr>
<th>F. EQUIPMENT ASSOCIATED WITH THIS PROJECT WHICH WILL BE PROVIDED FROM OTHER APPROPRIATIONS</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
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<th>FY OF</th>
<th>COST</th>
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<th>APPROP ($000)</th>
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<tbody>
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<td>Ammunition Production Eq</td>
<td>PAA</td>
<td>87</td>
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1. Component
   Army
   FY 1989

2. Date
   JAN 1987

3. Installation and Location
   Indiana Army Ammunition PT
   Indiana

4. Project Title
   MobilGroup I
   Addition
   Shipse/Rds-Phase V

5. Program Element
   Category Code
   Project Number
   TEMP
   421 81
   5330/13
   300

6. Project Cost
   Cost (5000)
   TEMP
   421 81
   5330/13
   300

9. Cost Estimates

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<th>Quantity</th>
<th>Unit Cost</th>
<th>Cost (5000)</th>
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<tr>
<td>PRIMARY FACILITY</td>
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<tr>
<td>Shipse/Rds-Phase V</td>
<td>SF</td>
<td>38,202</td>
<td>6.70</td>
<td>256</td>
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</table>

   SUPPORT FACILITIES

   SUBTOTAL                          |     |          |           | 256         |
   CONTINGENCY PERCENT (10.00%)      |     |          |           | 26          |
   TOTAL CONTRACT COST               |     |          |           | 282         |
   SUPERVISION, INSPECT & OVHD (5.50%)|     |          |           | 16          |
   TOTAL REQUEST                     |     |          |           | 298         |
   TOTAL REQUEST (ROUNDED)           |     |          |           | 300         |
   INSTALLED EQUIPMENT-OTHER APPROP  |     |          |           | (17)        |

10. Description of Proposed Construction

   Phase V will provide for the building of access roads, the purchase of one portable ramp and the reinforcing of floors to sixteen (16) rail shiphouses.

11. Requirement: 155,283 SF
   Adequate: 119,914 SF
   Substd: 35,369 SF

   PROJECT:
   To convert sixteen (16) limited access Rail Shiphouses to prime explosive storage locations.

   REQUIREMENT:
   Access roads are needed for trailer truck access to existing shiphouses that have only rail access, for end-product storage requirements.

   CURRENT SITUATION:
   Currently, the shiphouses are loaded in two stages. First, by manual transfer of propellant from an intraplant trailer to a rail jitney car and then by manual transfer from the jitney car into the shiphouse. Direct
CURRENT SITUATION:

Trailer access eliminates one transfer operation. Floor reinforcement is required for forklift transfer of goods.

IMPACT IF NOT PROVIDED:

Failure to provide this project will necessitate the continued costly manipulating and rewarehousing of explosive inventories. Additional hiring of material handling personnel will be required to keep up with the rate of Class 1.3 storage turnover and more people than necessary will be exposed to hazards of manually handling explosives. Critically needed prime explosive storage space to comply with the ballistic acceptance procedures in SB 742-1, ammunition surveillance procedures for finished goods produced will be lacking at INAAP if this project is not provided.

ADDITIONAL:

Presently, INAAP has 238 Class 1.3 facilities. Increased production schedules for 1986-88 will require that all 238 Class 1.3 facilities be utilized equally and that an estimated 1,217 load or unload operations will be required annually. It is estimated that an annual savings of $415,301 will be realized. Additionally, approximately 150 hours will be saved for quality assurance, content surveillance, inventory check and maintenance personnel.

/S/ TRANNIE W. SANDERSON
TRANNIE W. SANDERSON
LTC, CM
Commanding

ESTIMATED CONSTRUCTION START: APRIL 1989 INDEX: 1623
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1989 INDEX: 1650
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1990 INDEX: 1666
### SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED
   b. PERCENT COMPLETE AS OF JANUARY 15 1988
   c. PERCENT COMPLETE AS OF OCTOBER 1 1988
   d. DATE DESIGN COMPLETED

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN
   b. WHERE DESIGN WAS MOST RECENTLY USED

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS
   b. ALL OTHER DESIGN COSTS
   c. TOTAL COST \((c) = (a)+(b)\)
   d. CONTRACT
   e. IN HOUSE

4. CONSTRUCTION START DATE (PLANNED)

---

**Summary**

- **Estimated Annual Cost to Operate Proposed Facility:** $0
- **Number of Additional Personnel Necessary:** 0
- **Estimated Life-Cycle Cost to Operate Desired Facility:** $0
- **Estimated Life-Cycle Cost to Operate Existing Facility:** $0
- **Planning and Design Data**
  - **Date Design Started:** January 15, 1988 (100% complete)
  - **Date Design Completed:** November 87
  - **Total Cost:** $27
  - **Contract:** $19
  - **In House:** $8
- **Construction Start Date:** June 89
<table>
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<th>Equipment</th>
<th>Procuring</th>
<th>FY of</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portable Ramps, one PA, A 4211</td>
<td>89</td>
<td>17.0</td>
<td></td>
</tr>
</tbody>
</table>
This project consists of replacing the existing Energy Monitoring and Control System (EMCS) with one that will provide enhanced and expanded capabilities. The EMCS (with 2,000 points) will control package boilers at 24 locations, one furnace, chiller systems in 18 buildings, air handling units in 27 buildings, compressors in 9 locations, and area lighting systems in 10 buildings. Steam consumption will be controlled with connections to main steam supply valves supplying 9 buildings, to steam reducing valves supplying 9 buildings, and with connections to valve pits in 6 additional buildings. The EMCS will also provide temperature setback capability in 15 buildings and monitor electrical metering field equipment in 46 locations. EMCS field equipment will be installed in a compatible manner with the existing equipment with wired connections to local Field Interface Devices (FIDs). FIDs will use either FM or telephone links to the Master Control Room (MCR). The MCR will contain the Central Processing Unit (CPU), peripherals, software, etc. Software provided will optimize the energy consumption of controlled equipment. Employee training will be provided.
11. REQUIREMENT:  LS ADEQUATE:  LS SUBSTD:  O LS
PROJECT:
This project will provide a plantwide EMCS for INAAP.

REQUIREMENT:
Wide-ranging energy conservation measures will be implemented, decreasing energy consumption. Implementation will help meet energy goals, mandated energy reduction requirements, supporting AMCOM Policy 11-4 (July 1985).

CURRENT SITUATION:
This need is currently not being met due to the fact that no EMCS is available to provide the needed controls.

IMPACT IF NOT PROVIDED:
Failure to approve this project will result in continued use of large quantities of energy, the annual equivalent of 7,981 barrels of oil.

ADDITIONAL:
The reduced energy consumption amounts to an annual savings of 9,389 MWH/YR in electricity, 49,501 gal/yr of No. 2 fuel oil, and 2,893 MCF of natural gas. An annual FY86 dollar savings of $55,613 in No. 2 fuel oil, $177,945 in natural gas and $435 in labor is estimated. This amounts to an annual cost avoidance of $298,786. Implementation will reduce energy consumption by 46,487 MBTU/yr.

/S/ TRANNIE W. SANDERSON
TRANNIE W. SANDERSON
LTC, CM
Commanding

ESTIMATED CONSTRUCTION START:  JANUARY 1989  INDEX: 1616
ESTIMATED MIDPOINT OF CONSTRUCTION:  JULY 1989  INDEX: 1636
ESTIMATED CONSTRUCTION COMPLETION:  JANUARY 1990  INDEX: 1660
### SUPPLEMENTAL DATA

| A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY | 29.6 $(\text{\$000}) |
| B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY | 0 (PEOPLE) |
| C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY | 269.9 $(\text{\$000}) |
| D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT | na $(\text{\$000}) |

### E. PLANNING AND DESIGN DATA (ESTIMATE)

1. **STATUS**
   - a. DATE DESIGN STARTED: …………. 
   - b. PERCENT COMPLETE AS OF JANUARY 15 1988: 100
   - c. PERCENT COMPLETE AS OF OCTOBER 1 1988: 100
   - d. DATE DESIGN COMPLETED: Dec 87

2. **BASIS**
   - a. STANDARD OR DEFINITIVE DESIGN: YES NO X
   - b. WHERE DESIGN WAS MOST RECENTLY USED:

3. **COST (TOTAL - \$000)**
   - a. PRODUCTION OF PLANS AND SPECS: 76
   - b. ALL OTHER DESIGN COSTS: 76
   - c. TOTAL COST (c) = (a)+(b) OR (d)+(e): 76
   - d. CONTRACT: 53
   - e. IN HOUSE: 23

4. **CONSTRUCTION START DATE (PLANNED):** Jun 89
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<th>1. COMPONENT</th>
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F. EQUIPMENT ASSOCIATED WITH THIS PROJECT WHICH WILL BE PROVIDED FROM OTHER APPROPRIATIONS

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<th>PROCURING</th>
<th>FY OF</th>
<th>COST</th>
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<tr>
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<th>APPROPRIATION</th>
<th>APPROP ($000)</th>
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1. COMPONENT: ARMY

3. INSTALLATION AND LOCATION:
   KANSAS ARMY AMMUNITION PLANT

4. PROJECT TITLE:
   Construction Commercial Truck Do.

5. PROGRAM ELEMENT: 6.
   CATEGORY CODE: 7.
   PROJECT NUMBER:
   TEMP: 851 90
   532919

8. PROJECT COST ($000):
   230

9. COST ESTIMATES
   ITEM
   U/M
   QUANTITY
   COST ($000)
   PRIMARY FACILITY
   Construct Commercial Truck Docks
   LS
   --
   --
   (210)

SUPPORT FACILITIES

SUBTOTAL

CONTINGENCY PERCENT (5.00%)

TOTAL CONTRACT COST

SUPERVISION, INSPECT & OVHD (5.50%)

TOTAL REQUEST

TOTAL REQUEST (ROUNDED)

INSTALLED EQUIPMENT-OTHER APPROP

(0)

10. Description of Proposed Construction

Construct commercial truck docks to support warehousing operations in the 1400 Area to provide concrete dock and double truck wells between Buildings 1412-13, 1414-15 and 1415-16 complete with proper drainage, dock bumper and dock levelers.

11. REQUIREMENT:
   Is ADEQUATE: 1
   Is SUBSTD: 0
   PROJECT:
   Construct three (3) double well truck docks complete with proper drainage, dock bumper and dock levelers.

   REQUIREMENT:
   This project would provide commercial truck docks for unloading materials which would reduce material handling and reduce costs.
## Installation and Location

**Kansas Army Ammunition Plant**

**Kansas**

### Project Title

Construction Commercial Truck Docks in 1

### Current Situation:

The warehouses in 1400 Area are ground level type structures which require double handling of materials received by commercial truck.

### Impact If Not Provided:

Warehousing operations would still require double handling of materials received in-plant by commercial truck.

/S/ CHARLES T. WALLSCHLAEGER
CHARLES T. WALLSCHLAEGER
LTC, Ord C
Commanding

#### Estimated Construction Start:

<table>
<thead>
<tr>
<th>Date</th>
<th>Index</th>
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<tbody>
<tr>
<td>APRIL 1 989</td>
<td>1623</td>
</tr>
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</table>

#### Estimated Midpoint of Construction:

<table>
<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>OCTOBER 1989</td>
<td>1650</td>
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</table>

#### Estimated Construction Completion:

<table>
<thead>
<tr>
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<th>Index</th>
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</thead>
<tbody>
<tr>
<td>APRIL 1 990</td>
<td>1666</td>
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</table>
**1. COMPONENT**  
ARMY

**2. DATE**  
JAN 1987

**3. INSTALLATION AND LOCATION**  
KANSAS ARMY AMMUNITION PLANT
Kansas

**4. PROJECT TITLE**  
Construction Commercial Truck Docks in 1

**5. PROJECT NUMBER**  
TEMP 532919

---

**SUPPLEMENTAL DATA**

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY  
0 ($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY  

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY  
8500 ($000)

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT  
0 ($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED  
nov 86
   b. PERCENT COMPLETE AS OF JANUARY 15, 1988  
100
   c. PERCENT COMPLETE AS OF OCTOBER 1, 1988  
100
   d. DATE DESIGN COMPLETED  
nov 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN  
YES
   b. WHERE DESIGN WAS MOST RECENTLY USED  
na

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS  
21,000
   b. ALL OTHER DESIGN COSTS  
21,000
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e)  
21,000
   d. CONTRACT  
0
   e. IN HOUSE  
21,000

4. CONSTRUCTION START DATE (PLANNED)  
apr 89
### Component:
**ARMY**

### Date:
**JAN 1997**

### Installation and Location:
**LAKE CITY ARMY AMMO PLANT**

**Missouri**

### Project Title:
**Mobigroup 3**

**Replace Oil Storage Tank**

### Program Element:
**82190**

### Category Code:
**TEMP**

### Project Number:
**5332-17**

### Project Cost ($000):
**290**

### Cost Estimates:

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<th>Unit Cost</th>
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<td>Replacement of Fuel Oil Tank</td>
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<td>--</td>
<td>(247)</td>
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<td>SUPPORT FACILITIES</td>
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<td>TOTAL REQUEST</td>
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<td>TOTAL REQUEST (ROUNDED)</td>
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<tr>
<td>INSTALLED EQUIPMENT-OTHER APPROP</td>
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</tr>
</tbody>
</table>

### Description of Proposed Construction:

Disconnect all steam, oil and steam condensate pipe lines from the existing concrete storage tank. Disconnect all light circuits and the electronic fuel oil level measuring device from electrical service. Demolish the tank and foundation, and remove all heating facilities from the rubble. Dispose of all piping and concrete rubble in accordance with the latest requirements for disposal of materials coated with a potential hazardous waste. Provide a new foundation and construct an all steel 223,000 gallon storage tank on the cleared site complete with tank steam heating coils, steam suction heater, connected steam, transfer oil piping and lighting. Provide new electronic oil level measuring equipment. Test the existing soil and remove any oil-contaminated soil. The new steel tank shall be equipped with cathodic protection.

### Requirement:
**1,000,000 GL ADEQUATE: 500,000 GL SUBSTD: 250,000 GL**
PROJECT:
Construct a new all steel fuel oil storage tank, approximately 223,000 gallons capacity with a steam heating devices, piping, and oil level measuring equipment that complies with AMC-R 385-100, NFPA codes, State and Federal requirements.

REQUIREMENT:
A new steel tank of approximately 223,000 gallons capacity is required to maintain a 30 day storage capacity for fuel oil as required to comply with AR 420-49. One (1) reinforced concrete storage tank, No. 79, will be disposed of as result of this project. Accomplishment of this subproject will eliminate a potential source of environmental pollution of soil and water.

CURRENT SITUATION:
The existing storage tank was constructed in 1942 of reinforced concrete, formed in place. The concrete has become saturated with oil over the years, and oil is seeping to the outside and down the sides of the tank creating a potential pollution and fire hazard. The leaks cannot be repaired and replacement is required. The Missouri Department of Natural Resources (MDNR) Law 10 CSR 24-4.0-20, Waste Oil, states that waste oil is a hazardous waste. A hazardous waste with a potential to pollute groundwater cannot, in the State of Missouri, be allowed to leak or spill onto the ground. The Environmental Protection Agency Hazardous Waste and Consolidated Permit Regulation (Federal Register), Subpart C--Preparedness and Prevention, 264.31 Design and Operation of Facility, states facilities must be designed, constructed, maintained, operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

IMPACT IF NOT PROVIDED:
In the event this project is not approved, the production schedules assigned for mobilization could be affected adversely and the Plant will remain not in compliance with AR 420-49.
Beneficial Occupancy Date: M+5

ADDITIONAL:
Cost is shown in FY89 dollars. The Corps of Engineers CWE cost with escalation was used. This subproject has a completed design as PSR Project 5845332, Subproject 24. This subproject is currently programmed as PSR Project 5895332, Subproject 17.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARMY</td>
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<th>3. INSTALLATION AND LOCATION</th>
<th>5. PROJECT NUMBER</th>
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<tr>
<td>LAKE CITY ARMY AMMO PLANT</td>
<td>TEMP</td>
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<tr>
<td>Missouri</td>
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<tr>
<td>Utilization GROUP 3</td>
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<tr>
<td>Replace Oil Storage Tank</td>
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<th>6. ADDITIONAL:</th>
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| 6294           | (CONT)..

/S/ DENNIS E. O'BRIEN  
DENNIS E. O'BRIEN  
LTC, OD  
Commanding Officer

<table>
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<tr>
<th>ESTIMATED CONSTRUCTION START:</th>
<th>ESTIMATED MIDPOINT OF CONSTRUCTION:</th>
<th>ESTIMATED CONSTRUCTION COMPLETION:</th>
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<tr>
<td>APRIL 1989</td>
<td>OCTOBER 1989</td>
<td>APRIL 1990</td>
</tr>
<tr>
<td>INDEX: 1623</td>
<td>INDEX: 1650</td>
<td>INDEX: 1666</td>
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</table>
SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY ($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY (PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY ($000)

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT ($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED............................................ MAY 86
   b. PERCENT COMPLETE AS OF JANUARY 15 1988............ 100
   c. PERCENT COMPLETE AS OF OCTOBER 1 1988............. 100
   d. DATE DESIGN COMPLETED................................. DEC 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN YES NO
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS............................
   b. ALL OTHER DESIGN COSTS....................................
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e).....................
   d. CONTRACT..................................................
   e. IN HOUSE..................................................

4. CONSTRUCTION START DATE (PLANNED)....................... APR 89
3. INSTALLATION AND LOCATION
Milan Army Ammunition Plant
Tennessee

5. PROGRAM ELEMENT

8. CATEGORY CODE

7. PROJECT NUMBER

4. PROJECT TITLE
HAZ. MAT. STG. BLDG.-AREA S

F Y 19 89 MILITARY CONSTRUCTION PROJECT DATA

JAN 1987

3. INSTALLATION AND LOCATION
Milan Army Ammunition Plant
Tennessee

5. PROGRAM ELEMENT

8. CATEGORY CODE

7. PROJECT NUMBER

4. PROJECT TITLE
HAZ. MAT. STG. BLDG.-AREA S

TEMP
5317-18

810

3. INSTALLATION AND LOCATION
Milan Army Ammunition Plant
Tennessee

5. PROGRAM ELEMENT

8. CATEGORY CODE

7. PROJECT NUMBER

4. PROJECT TITLE
HAZ. MAT. STG. BLDG.-AREA S

TEMP
5317-18

810

9. COST ESTIMATES

ITEM

U/M

QUANTITY

UNIT

COST ($000)

PRIM ARI FACILITY

HAZ. MAT. STG. BLDG. AREA S

LS

--

(734)

SUPPORT FACILITIES

SUBTOTAL

734

CONTINGENCY PERCENT (5.00%)

TOTAL CONTRACT COST

771

SUPERVISION, INSPECT & O VHD (5.50%)

TOTAL REQUEST

813

TOTAL REQUEST (ROUNDED)

810

INSTALLED EQUIPMENT—OTHER APPROP

(0)

10. Description of Proposed Construction

PROVIDE A SPECIALLY DESIGNED BUILDING THAT WILL MEET ALL STATE AND FEDERAL
REQUIREMENTS FOR THE STORAGE OF HAZARDOUS AND TOXIC MATERIALS. THE PROPOSED
STRUCTURE WILL BE SINGLE STORY, WITH FINISH FLOOR SET AT TRAILER HEIGHT.
EXISTING AREA ROADS CAN BE UTILIZED FOR ACCESS, BUT TRUCK APRONS AT EACH
CARGO DOOR WILL BE REQUIRED. ELECTRICAL SERVICE FOR LIGHTING AND HEAT
SUFFICIENT TO PREVENT FREEZING WILL BE REQUIRED. NO OLD FACILITIES WILL BE
DISPOSED OF. NOT SITED IN A FLOOD PLAIN.

11. REQUIREMENT:

SF ADEQUATE: 0
SF SUBSTD: 13,055

PROJECT:

THIS PROJECT WILL PROVIDE A BUILDING THAT WILL MEET THE REQUIREMENTS OF
EXISTING ARMY REGULATIONS AND DEPARTMENT OF DEFENSE DIRECTIVES FOR THE
STORAGE OF HAZARDOUS AND TOXIC MATERIALS.
3. INSTALLATION AND LOCATION
Milan Army Ammunition Plant
Tennessee

4. PROJECT TITLE
HAZ. MAT. STG. BLDG.-AREA S

5. PROJECT NUMBER
TEMP
5317-18

REQUIREMENT:
NO APPROVED FACILITY EXISTS FOR THE STORAGE OF HAZARDOUS AND TOXIC MATERIALS. NO PROVISIONS FOR SPILL CONTAINMENT IS PROVIDED AND COMPATABILITY GROUPINGS ARE NOT SEPERATED IN THE PERSCRIBED MANNER.

CURRENT SITUATION:
CURRENTLY ONE (1) WAREHOUSE AND AN EARTH COVERED MAGAZINE ARE USED TO STORE ALL HAZARDOUS AND TOXIC MATERIALS USED AT THIS INSTALLATION. THE WAREHOUSE IS UNHEATED AND DOES NOT MEET THE REQUIREMENTS OF AR 200-1 FOR THE STORAGE OF HAZARDOUS AND TOXIC MATERIALS. LIKewise THE EARTH COVERED MAGAZINE DOES NOT MEET THE STATED REQUIREMENTS AND IS BEING USED FOR STORAGE OF ITEMS OTHER THAN THOSE FOR WHICH IT WAS DESIGNED NAMELY EXPLOSIVES AND EXPLOSIVE COMPONENTS.

IMPACT IF NOT PROVIDED:
THIS INSTALLATION WILL CONTINUE TO BE IN VIOLATION OF AR 200-1 AND OTHER DOD DIRECTIVES CONCERNING STORAGE OF HAZARDOUS AND TOXIC MATERIALS.

/S/ KENNARD G. KARR
KENNARD G. KARR
LTC ORDC
COMMANDING

ESTIMATED CONSTRUCTION START: APRIL 1989 INDEX: 1623
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1989 INDEX: 1650
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1990 INDEX: 1666
1. COMPONENT
   ARMY

2. DATE
   JAN 1987

3. INSTALLATION AND LOCATION
   Milan Army Ammunition Plant
   Tennessee

4. PROJECT TITLE
   HAZ. MAT. STG. BLDG.-AREA S

5. PROJECT NUMBER
   TEMP
   5317-18

SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY ($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY (PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY ($000)

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT ($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED................. DEC 86
   b. PERCENT COMPLETE AS OF JANUARY 15 1988.. 100
   c. PERCENT COMPLETE AS OF OCTOBER 1 1988.. 100
   d. DATE DESIGN COMPLETED.............. DEC 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN YES NO
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS ..............
   b. ALL OTHER DESIGN COSTS....................
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e)........
   d. CONTRACT..................................
   e. IN HOUSE..................................

4. CONSTRUCTION START DATE (PLANNED)............. APR 89
1. COMPONENT: ARMY
2. DATE: JAN 1987
3. INSTALLATION AND LOCATION:
   Milan Army Ammunition Plant
   Tennessee
4. PROJECT TITLE:
   REPLACE INFLATABLE SHELTER
5. PROGRAM ELEMENT
   441
6. CATEGORY CODE
   10
7. PROJECT NUMBER
   TEMP
   5317-20
8. PROJECT COST ($000)
   270
9. COST ESTIMATES

<table>
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<tr>
<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>COST ($000)</th>
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<tbody>
<tr>
<td>PRIMARY FACILITY</td>
<td>LS</td>
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<td>--</td>
<td>239</td>
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<td>REPLACE INFLATABLE SHELTER</td>
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</table>

SUPPORT FACILITIES

SUBTOTAL: 239
CONTINGENCY PERCENT (5.00%): 12
TOTAL CONTRACT COST: 251
SUPERVISION, INSPECT & OVHD (5.50%): 14
TOTAL REQUEST: 265
TOTAL REQUEST (ROUNDED): 270
INSTALLED EQUIPMENT-OTHER APPROP: 0

10. Description of Proposed Construction:

WORK CONSISTS OF REMOVING AN EXISTING AIR SUPPORTED STRUCTURE CONSISTING OF CANVAS, BLOWERS, BLOWER MOTORS AND ALL RELATED HARDWARE. STRUCTURE WILL BE REPLACED WITH A NEW PRE-ENGINEERED METAL BUILDING. NOT SITED IN A FLOODPLAIN.

11. REQUIREMENT: 30,350 SF ADEQUATE: 0 SF
    SUBSTD: 0 SF
    PROJECT:
    DRY STORAGE AREA FOR THE STORAGE OF WOODEN, METAL AND FIBER INERT AMMUNITION CONTAINERS.
    REQUIREMENT:
    existing air structure was erected in 1977 and will be 11 years old in FY89. the expected life of the fabric cover will have been expended by then.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>ARMY</th>
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<tbody>
<tr>
<td></td>
<td>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</td>
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<tr>
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<td>3. INSTALLATION AND LOCATION</td>
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<td>Milan Army Ammunition Plant</td>
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<td>TEMPl</td>
<td></td>
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<tr>
<td>5317-20</td>
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</tbody>
</table>

CURRENT SITUATION:
CURRENTLY THE AIR SUPPORTED STRUCTURE SERVES AS AN ACCEPTABLE STORAGE AREA EVEN THOUGH ALL AVAILABLE FLOOR SPACE CANNOT BE UTILIZED SINCE THE FABRIC HAS DEVELOPED LEAKS. IT IS EXPECTED THAT THE STRUCTURE WILL BE BEYOND REPAIR BY FY89.

IMPACT IF NOT PROVIDED:
IF STRUCTURE IS NOT REPLACED PRIOR TO COMPLETE DETERIORATION OF FABRIC, 30,000 SQUARE FEET OF DRY STORAGE AREA WILL NO LONGER BE AVAILABLE.

ESTIMATED CONSTRUCTION START: APRIL 1986 INDEX: 1675
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1986 INDEX: 1680
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1987 INDEX: 1690
### MILITARY CONSTRUCTION PROJECT DATA

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<td>TEMP</td>
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#### SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY ($000)...

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY (PEOPLE)...

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY ($000)...

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT ($000)...

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   a. DATE DESIGN STARTED... DEC 86
   b. PERCENT COMPLETE AS OF JANUARY 15 1988.. 100
   c. PERCENT COMPLETE AS OF OCTOBER 1 1988.. 100
   d. DATE DESIGN COMPLETED... DEC 87

2. BASIS
   a. STANDARD OR DEFINITIVE DESIGN... YES
   b. WHERE DESIGN WAS MOST RECENTLY USED:

3. COST (TOTAL - $000)
   a. PRODUCTION OF PLANS AND SPECS..........
   b. ALL OTHER DESIGN COSTS..................
   c. TOTAL COST (c) = (a)+(b) OR (d)+(e).....
   d. CONTRACT..............................
   e. IN HOUSE..............................

4. CONSTRUCTION START DATE (PLANNED)........ APR 89

---

**DD FORM 1391c**

PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED

PAGE NO. 117
1. COMPONENT

   ARMY

2. DATE

   FY 1989

3. INSTALLATION AND LOCATION

   Radford Army Ammunition Pt
   Virginia

4. PROJECT TITLE

   MobilGroup 1
   REPLACEMENT
   REPLACE FIVE (5) BARRICADES

5. PROGRAM ELEMENT

   226 80

6. CATEGORY CODE

   TEMP

7. PROJECT NUMBER

   532616

8. PROJECT COST ($1000)

   1,300

9. COST ESTIMATES

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<th>COST ($1000)</th>
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<tr>
<td>REPLACE 5 BARRICADES</td>
<td>LS</td>
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<td>(1,170)</td>
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</table>

   | SUPPORT FACILITIES       |     |          |           |              |
   | SUBTOTAL                 |     |          |           | 1,117        |
   | CONTINGENCY PERCENT (%)  |     |          |           | 59           |
   | TOTAL CONTRACT COST      |     |          |           | 1,229        |
   | SUPERVISION, INSPECT & CIVIL (5.50%) | | | | 69 |
   | TOTAL REQUEST            |     |          |           | 1,298        |
   | TOTAL REQUEST APPROVED   |     |          |           | 1,300        |
   | INSTALLED EQUIPMENT THER APPL |     |          |           |              |

10. Description of Proposed Construction

   COMPLETELY REMOVE AND RECONSTRUCT BARRICADES FOR FIVE (5) ACTIVE PROPELLANT
   OPERATING BUILDINGS. NOT SITED IN A FLOOD Plain.

11. REQUIREMENT:

   SF ADEQUATE:
   SF SUBSTD:
   O SF

PROJECT:

   REPLACE TWO MULTI-STORY AND THREE SINGLE-STORY, DOUBLE REVETTED WOODEN,
   EARTH FILLED BARRICADES WITH ONE MULTI-STORY AND FOUR SINGLE-STORY
   BARRICADES. THE PROJECT MUST REMOVE AND RE-INSTALL UTILITIES, PROCESS PIPING
   AND DUCTWORK PASSING THROUGH OR ATTACHED TO THE BARRICADES. ALSO, THE FLOORS
   AND ROOFS THROUGH THE BARRICADE PORTALS ARE TO BE REPLACED. DETERIORATED
   ESCAPE CHUTES AND SUPPORT FRAMING ARE TO BE REPLACED AND THE SURFACE
   DRAINAGE IS TO BE DIVERTED AWAY FROM THE BARRICADE FOUNDATION. UPGRADE THE
   ELECTRICAL LIGHTING AND WIRING TO MEET THE LATEST CODES. NOTE: RATHER THAN
   UPGRADE THE 1940'S OPEN WIRING AND NONCONFORMING ELECTRICAL AT ALL THE
   FACILITIES AT R A A P AT ONE TIME, IT HAS PREVIOUSLY BEEN DECIDED TO CORRECT
   THE CONDITIONS WHEN MAJOR WORK IS PERFORMED ON INDIVIDUAL BUILDINGS. NEW
### 1. COMPONENT
**ARMY**

### 2. DATE
**FY 1989 MILITARY CONSTRUCTION PROJECT DATA**

### 3. INSTALLATION AND LOCATION
Radford Army Ammunition Pt  
**Virginia**

### 4. PROJECT TITLE
**Replacement**  
**R/I**  
**REPLACE FIVE (5) BARRICADES**

### 5. PROJECT NUMBER
**TEMP 532616**

---

**PROJECT:**

WIRING AND CONDUIT ON BARRICADES CORRECTS THE MAJORITY OF THE REQUIREMENTS.

**REQUIREMENT:**

THIS PROJECT IS THE NINTH PHASE OF AN ANNUAL REPLACEMENT PROGRAM FOR THE BARRICADES AT THIS PLANT WHICH WERE ERECTED IN THE 1940-41 PERIOD. THIRTY-THREE BARRICADES IN PHASE I (FY-80) THROUGH PHASE V (FY-84) HAVE BEEN COMPLETED. REPAIRS TO MANY OF THESE BARRICADES HAVE BECOME EXCESSIVE AND CANNOT KEEP UP WITH THE RATE OF DETERIORATION, AND THE STRUCTURAL INTEGRITY CANNOT BE ASSURED.

**CURRENT SITUATION:**

240 BARRICADES ARE REQUIRED AT THIS PLANT TO MEET CURRENT PRODUCTION SCHEDULES AND FOR MOBILIZATION. A PORTION OF THESE CAN BE MAINTAINED FOR THE NEXT 20 YEARS. THE REMAINING ONES SHOULD BE REPLACED BECAUSE OF DECAYING OF THE MAJOR STRUCTURAL COMPONENTS. A REPLACEMENT PROGRAM HAS BEEN STARTED TO RENEW THE BARRICADES AT THESE BUILDINGS, A FEW EACH YEAR, BEGINNING WITH THE ONES THAT ARE IN GREATEST NEED OF REPLACEMENT.

**IMPACT IF NOT PROVIDED:**

WITHOUT ADEQUATE BARRICADES, RAAP COULD NOT CONTINUE TO OPERATE WITHIN EXISTING INTRALINE QUANTITY DISTANCES.

**ADDITIONAL:**

NOT REQUIRED.

---

G. J. Savitske  
**LTC, CMLC**  
**COMMANDER**

**ESTIMATED CONSTRUCTION START:**  
**MAY 1989**  
**INDEX: 1608**

**ESTIMATED MIDPOINT OF CONSTRUCTION:**  
**JANUARY 1990**  
**INDEX: 1655**

**ESTIMATED CONSTRUCTION COMPLETION:**  
**SEPTEMBER 1990**  
**INDEX: 1694**
### FY 1989 MILITARY CONSTRUCTION PROJECT DATA

#### 3. INSTALLATION AND LOCATION
Radford Army Ammunition Pt
Virginia

#### 4. PROJECT TITLE
Replacement
Replace five (5) barricades

#### 5. PROJECT NUMBER
532616

### SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY
   $(000)$

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY
   (PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY
   $(000)$

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT
   $(000)$

### 1. STATUS

<table>
<thead>
<tr>
<th>a. DATE DESIGN STARTED.</th>
<th>b. PERCENT COMPLETE AS OF JANUARY 15 1983</th>
<th>c. PERCENT COMPLETE AS OF OCTOBER 1 1983</th>
<th>d. DATE DESIGN COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>100</td>
<td>Nov 87</td>
</tr>
</tbody>
</table>

### 2. BASIS

- a. STANDARD OR DEFINITIVE DESIGN: YES
- b. WHERE DESIGN WAS MOST RECENTLY USED:

### 3. COST (TOTAL - $000)

- a. PRODUCTION OF PLANS AND SPECS
- b. ALL OTHER DESIGN COSTS
- c. TOTAL COST = (a) + (b) OR (d) + (e)
- d. CONTRACT
- e. IN HOUSE

### 4. CONSTRUCTION START DATE (PLANNED)

Apr 89
The basic system improvements are required to ensure reliable electrical power and to provide safe operation of the electrical distribution system feeding from the powerhouse. By the present day standards and codes the distribution system is considerably inadequate in both physical and electrical characteristics. Circuits going out of the powerhouse are too close together. When an electrical fault occurs on one circuit, it sometimes propagates to other circuits by electrical arcing which causes unnecessary production curtailments and hazards to plant personnel in congested areas (main road from Gate No. 1 and combined shops). NOTE: This is Phase II portion of the original Project 5872225 (Overhaul of Electrical Distribution Systems). Phase I of the project was submitted under Project 5872225. These conditions have led to an assigned Risk Assessment Code of 3. In order to alleviate this hazard and provide adequate capacity for modernization the entire distribution system must be altered to remove many of these circuits from the powerhouse. To accomplish this task, major modifications to the distribution are listed below:
1. COMPONENT: ARMY
2. DATE: FY 1989
3. INSTALLATION AND LOCATION: RADFORD ARMY AMMUNITION PT, Virginia
4. PROJECT TITLE: Modernization Group 1 - SAFETY Modernization UPGRADE PRIMARY OVERHEAD ELECTRICAL DISTRI
5. PROJECT NUMBER: 892519

DESCRIPTION OF PROPOSED CONSTRUCTION (CONT):

1) Reduction of the number of 2.4KV circuits feeding out of the powerhouse (to reduce wiring congestion), limiting the number of 2.4KV circuits to area near the powerhouse where there are many 2.3KV motors.

2) The remaining plant area to be converted to a 12.47 KV system by expanding the existing 12.47 system with loop concept and sectionalizing switches.

3) Expand the 69KV substation capacity at 1st Rolled Powder and TNT for future projected loads in modernization and mobilization plans.

4) Upgrade the existing 12.47KV primary distribution system in the main plant area to meet the present safety manual requirements.

5) Provide high resistance grounding for the existing and proposed 480 volt substations that will continue to be fed by the 2.4KV and 12.47KV primary system in main plant area.

II. REQUIREMENT: 0.48 kV ADEQUATE: 0.48 kV SUBSTD: 0.48 kV PROJECT:
To ensure continued production by correcting hazardous deficiencies of the congested distribution system at RAAP that is being served at 2.4KV from powerhouse to through modernization of the 45-year-old existing facilities. The benefits realized will reduce the congested 2.4KV circuits from seventeen to seven) from the powerhouse, thus minimizing fault propagation from one circuit to adjacent circuits and to reduce mobilization and modernization loads on the powerhouse. Additionally, the RAC of 3 conditions on the main plant area would be eliminated.

REQUIREMENT:
This project has been assigned RISK ASSESSMENT CODE OF 3 which was based on the congested wiring and inadequate power requirements at the powerhouse to supply mobilization and modernization loads. Therefore, the existing conditions cannot improve unless immediate actions are taken. The original P-15 for this project was submitted in February 1980.

CURRENT SITUATION:
The preventive maintenance program has been greatly accelerated, major maintenance projects, such as: pole replacement, power lines replacement and modifications are being made. Extra precautions are taken for power outages, shut downs and for safety of personnel which curtails production.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. DATE</td>
<td>MCT, 1557</td>
</tr>
<tr>
<td>3. INSTALLATION AND LOCATION</td>
<td>RADFORD ARMY AMMUNITION PT</td>
</tr>
<tr>
<td></td>
<td>Virginia</td>
</tr>
<tr>
<td>4. PROJECT TITLE</td>
<td>Modernization Group 1</td>
</tr>
<tr>
<td>SAFETY</td>
<td>Modernization</td>
</tr>
<tr>
<td>UPGRADE PRIMARY OVERHEAD ELECTRICAL DISTRI</td>
<td></td>
</tr>
<tr>
<td>5. PROJECT NUMBER</td>
<td>892519</td>
</tr>
</tbody>
</table>

IMPACT IF NOT PROVIDED:
The electrical distribution system will continue to operate with known hazards to personnel and equipment. We will continue to have unnecessary power outages which curtails production at RAAP.

ADDITIONAL:
An economic analysis will not be performed; as safety and modernization, not production or project payback, is the reason for this project. However, the production capability is dependent upon successful execution of this project.

G. J. SAVITSEFF
LTC, ORDC
COMMANDER - RAAP

ESTIMATED CONSTRUCTION START: APRIL 1989 INDEX: 1623
ESTIMATED MIDPOINT OF CONSTRUCTION: AUGUST 1990 INDEX: 1682
ESTIMATED CONSTRUCTION COMPLETION: JANUARY 1992 INDEX: 1739
### 3. INSTALLATION AND LOCATION

RADFORD ARMY AMMUNITION PT
Virginia

### 4. PROJECT TITLE

Modernization Group 1
SAFETY
UPGRADE PRIMARY OVERHEAD ELECTRICAL DISTRI

### 5. PROJECT NUMBER

892519

## SUPPLEMENTAL DATA

<table>
<thead>
<tr>
<th>A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY</th>
<th>222,120 ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY</td>
<td>0 (PEOPLE)</td>
</tr>
<tr>
<td>OUT THE FUNCTION OF THE PROPOSED FACILITY...............</td>
<td></td>
</tr>
<tr>
<td>C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN</td>
<td>2,115,475 ($000)</td>
</tr>
<tr>
<td>THE DESIRED FACILITY................................................</td>
<td></td>
</tr>
<tr>
<td>D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN</td>
<td>3,530,355 ($000)</td>
</tr>
<tr>
<td>THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT</td>
<td></td>
</tr>
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</table>

### E. PLANNING AND DESIGN DATA (ESTIMATE)

<table>
<thead>
<tr>
<th>1. STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. DATE DESIGN STARTED.........................</td>
</tr>
<tr>
<td>b. PERCENT COMPLETE AS OF JANUARY 15 1988..</td>
</tr>
<tr>
<td>c. PERCENT COMPLETE AS OF OCTOBER 1 1988..</td>
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<tr>
<td>d. DATE DESIGN COMPLETED......................</td>
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<table>
<thead>
<tr>
<th>2. BASIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. STANDARD OR DEFINITIVE DESIGN................</td>
</tr>
<tr>
<td>b. WHERE DESIGN WAS MOST RECENTLY USED:........</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. COST (TOTAL = $000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. PRODUCTION OF PLANS AND SPECS ................</td>
</tr>
<tr>
<td>b. ALL OTHER DESIGN COSTS........................</td>
</tr>
<tr>
<td>c. TOTAL COST (c) = (a)+(b) OR (d)+(e).......</td>
</tr>
<tr>
<td>d. CONTRACT.........................</td>
</tr>
<tr>
<td>e. IN HOUSE........................</td>
</tr>
</tbody>
</table>

| 4. CONSTRUCTION START DATE (PLANNED)........... | APR 89 |

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**DD FORM 1391c**

PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED

PAGE NO. 124
1. COMPONENT
ARMY

2. DATE
FY 1989
MILITARY CONSTRUCTION PROJECT DATA
1587

3. INSTALLATION AND LOCATION
Radford Army Ammunition Pt
Virginia

4. PROJECT TITLE
REPLACEMENT
REPLACE BRIDGE NO. 930

5. PROGRAM ELEMENT
851 12
6. CATEGORY CODE
TEMP
7. PROJECT NUMBER
9532615
8. PROJECT COST ($000)
370

9. COST ESTIMATES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
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<tbody>
<tr>
<td>PRIMARY FACILITY</td>
<td></td>
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<td></td>
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<tr>
<td>REPLACE BRIDGE</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>337</td>
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<td></td>
<td></td>
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<tr>
<td>SUPPORT FACILITIES</td>
<td></td>
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</table>

| SUBTOTAL                      |     | 337      |           |             |
| CONTINGENCY PERCENT (: 5.00%) |     | 17       |           |             |
| TOTAL CONTRACT COST           |     | 337      |           |             |
| SUPERVISION, INSPECT & OTHR (5.50%) |     | 14       |           |             |
| TOTAL REQUEST                 |     | 373      |           |             |
| TOTAL REQUEST (ROUNDED)       |     | 373      |           |             |
| INSTALLED EQUIPMENT-OTHER APPR |     | 91       |           |             |

10. Description of Proposed Construction

(1) DISMANTLE AND REMOVE EXISTING WOOD BRIDGE WHICH IS RESTRICTED TO VEHICLES WITH MAXIMUM WEIGHT OF 8 TONS. (2) DESIGN AND CONSTRUCT A NEW BRIDGE TO CARRY AASHTO HS20 LIVE LOADING WITH A VERTICAL CLEARANCE FROM TOP OF RAIL TO THE UNDERSTRUCTURE OF 22 FEET, MINIMUM ROADWAY OF 24 FEET AND A 3 FOOT WALKWAY ON ONE SIDE.

11. REQUIREMENT:
65 LF ADEQUATE: 0 LF SUBSTD: 65 LF
PROJECT:
REPLACEMENT OF THE EXISTING DOWNGRADED WOOD BRIDGE WITH A CONCRETE AND STEEL STRUCTURE TO CARRY AASHTO HS20 LIVE LOADING.

REQUIREMENT:
RETURN THE BRIDGE TO DESIGN LIVE LOADING TO BE UTILIZED BY ALL PLANT TRAFFIC AND PREVENT CLOSING THE ROAD CAUSING ALL VEHICLES TO TRAVEL LONGER ROUTES.
CURRENT SITUATION:
The existing downgraded bridge is restricted to light traffic and heavy traffic has to travel longer routes.

IMPACT IF NOT PRODUCED:
If this bridge is not replaced and the settlement continues, the road will be closed causing all vehicles to travel longer routes and will have an impact on production efficiency.

ADDITIONAL:
Economic justification is in the P-15.

G. J. SAVITSKE
LTC, ORDC
COMMANDER-RAAP

ESTIMATED CONSTRUCTION START: JANUARY 1989 INDEX: 1616
ESTIMATED COMPLETION OF CONSTRUCTION: MAY 1989 INDEX: 1627
ESTIMATED CONSTRUCTION COMPLETION: OCTOBER 1989 INDEX: 1650
### Supplemental Data

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>A. Estimated Annual Cost to Operate Proposed Facility</td>
<td>$(000)</td>
</tr>
<tr>
<td>B. Number of Additional Personnel Necessary to Carry Out the Function of the Proposed Facility</td>
<td>(people)</td>
</tr>
<tr>
<td>C. Estimated Life-Cycle Cost to Operate and Maintain the Desired Facility</td>
<td>$(000)</td>
</tr>
<tr>
<td>D. Estimated Life-Cycle Cost to Operate and Maintain the Existing Facility if New Facility is a Replacement</td>
<td>$(000)</td>
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</table>

#### Planning and Design Data (Estimate)

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>A. Status</td>
<td></td>
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<tr>
<td>1. Date Design Started</td>
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<td>2. Percent Complete as of January 15 1988</td>
<td>100</td>
</tr>
<tr>
<td>3. Percent Complete as of October 1 1988</td>
<td>100</td>
</tr>
<tr>
<td>4. Date Design Completed</td>
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</tr>
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<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>B. Basis</td>
<td></td>
</tr>
<tr>
<td>1. Standard or Executive Design</td>
<td></td>
</tr>
<tr>
<td>2. Where Design Was Most Recently Used</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Cost (Total = $000)</td>
<td></td>
</tr>
<tr>
<td>a. Production of Plans and Specs</td>
<td></td>
</tr>
<tr>
<td>b. All Other Design Costs</td>
<td></td>
</tr>
<tr>
<td>c. Total Cost</td>
<td>$(a)+(b) (or (d)+(e))</td>
</tr>
<tr>
<td>d. Contract</td>
<td></td>
</tr>
<tr>
<td>e. In House</td>
<td></td>
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<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>D. Construction Start Date (Planned)</td>
<td>JAN 89</td>
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</table>
### MILITARY CONSTRUCTION PROJECT DATA

#### 1. COMPONENT
- **Army**

#### 2. DATE
- **FY 1989**

#### 3. INSTALLATION AND LOCATION
- **Twin Cities Army Ammunition Plant**, Minnesota

#### 4. PROJECT TITLE
- **Addition**
- **Package Boilers**

#### 5. PROGRAM ELEMENT
- **82190**

#### 6. CATEGORY CODE
- **520122**

#### 7. PROJECT NUMBER
- **TEMP**

#### 8. PROJECT COST ($000)
- **560**

#### 9. COST ESTIMATES

<table>
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<tr>
<th>ITEM</th>
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<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY FACILITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Install Package Boilers</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>(120)</td>
</tr>
<tr>
<td>Constr. Improvements</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>(383)</td>
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<tr>
<td>SUPPORT FACILITIES</td>
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</tr>
<tr>
<td>SUBTOTAL</td>
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<td>CONTINGENCY PERCENT</td>
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<td>TOTAL REQUEST</td>
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<tr>
<td>INSTALLED EQUIPMENT-OTHER APPR</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

#### 10. Description of Proposed Construction

Install two self-contained package boilers -- an 150 HP boiler in building 103, and a 250 HP boiler in a new building to be constructed adjacent to building 501. Make necessary modifications to existing structures and equipment, to accommodate the new facilities.

#### 11. REQUIREMENT
- **350 HP ADEQUATE:**
- **0 HP SUBSTD:**
- **350 HP PROJECT:**

Provide steam during non-heating season to meet process steam package boilers in or near subject buildings, rather than central steam plant.
3 INSTALLATION AND LOCATION
Twin Cities Army Amm0 Pt
Minnesota

4 PROJECT TITLE
Addition
Package Boilers

REQUIREMENT:

This project is needed now to permit complete shutdown of steam plants in
buildings 111 and 502 during the non-heating season, thereby permitting
sustained maintenance of central plants and outside steam lines and allowing
for non-tactical provision of service to Buildings 103 and 502.

CURRENT SITUATION:

At the present time, the central steam plant is kept on line during the
non-heating season, to provide process steam to buildings 103 and 502. This
prevents the ability to shut the main boilers and operate at the low end of
typical operating curves, and because of the use of long transmission
lines to the buildings being served.

IMPELLED TO ACT TODAY:

If the unit of is not provided, the current operation will have to
continue, with a reduction in steam mechanical operation and waste of en-
ergy, in contrast with the Army's financial energy conservation goals.

II

The above analyses are provided in the March 14, 1989, Prt 5
includes in the DA.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. DATE</td>
<td></td>
</tr>
<tr>
<td>3. INSTALLATION AND LOCATION</td>
<td>Twin Cities Army AmmPt</td>
</tr>
<tr>
<td></td>
<td>Minnesota</td>
</tr>
<tr>
<td>4. PROJECT TITLE</td>
<td>Addition Pack Boiler</td>
</tr>
<tr>
<td>5. PROJECT NUMBER</td>
<td>TEMP 5201-22</td>
</tr>
</tbody>
</table>

Design concept is nearing completion by architect-engineer retained by Corps of Engineers, Omaha.

Theodore Schultz
Theodore Schultz
Commanders Representative
GS-12

<table>
<thead>
<tr>
<th>ESTIMATED CONSTRUCTION START</th>
<th>APRIL 1989</th>
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<tbody>
<tr>
<td>INDEX:</td>
<td>1623</td>
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<tr>
<td>ESTIMATED MACHINERY &amp; CONSTRUCTION START</td>
<td>OCTOBER 1989</td>
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<td>INDEX:</td>
<td>1650</td>
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<tr>
<td>ESTIMATED DRYWALL &amp; CURTAIN START</td>
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<tr>
<td>INDEX:</td>
<td>1666</td>
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1. COMPONENT
   - ARMY

2. DATE
   - JUL 88

3. INSTALLATION AND LOCATION
   - Twin Cities Army Ammo Pt
   - Minnesota

4. PROJECT TITLE
   - Addition
   - Package Boilers

5. PROJECT NUMBER
   - TEMP
   - 5201-22

SUPPLEMENTAL DATA

A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY
   - 94
   - ($000)

B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO CARRY OUT THE FUNCTION OF THE PROPOSED FACILITY
   - 0
   - (PEOPLE)

C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIRED FACILITY
   - ($000)

D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT
   - ($000)

E. PLANNING AND DESIGN DATA (ESTIMATE)

1. STATUS
   - DATE DESIGN STARTED
     - DEC 85
   - PERCENT COMPLETE AS OF JANUARY 15, 1988
     - 100
   - PERCENT COMPLETE AS OF OCTOBER 1, 1988
     - 100
   - DATE DESIGN COMPLETED
     - JAN 87

2. COST
   a. PLANNED DEFINITIVE DESIGN
      - YES X
      - NA
   b. WHERE DESIGN WAS MOST RECENTLY USED
      - NA

3. COST (TOTAL = $000)
   a. PRODUCTION OF PLANS AND SPECS
      - NA
   b. ALL OTHER DESIGN COSTS
      - 29
   c. TOTAL COST OR ((a+b) OR (c+d)+e)
      - 29
   d. CONTRACT
      - NA
   e. IN HOUSE
      - 29

4. CONSTRUCTION START DATE (PLANNED)
   - APR 89
<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>FY 19</th>
<th>MILITARY CONSTRUCTION PROJECT DATA</th>
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<tbody>
<tr>
<td>ARMY</td>
<td></td>
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### 3. INSTALLATION AND LOCATION
- Lake City Army Ammunition Plant
- Missouri

### 4. PROJECT TITLE
- Mobil Group 1
- Addition Alteration Pyrotechnic Safety Enhanced

### 5. PROGRAM ELEMENT
- Item

### 6. CATEGORY CODE
- Temp

### 7. PROJECT NUMBER
- T892245

### 8. PROJECT COST ($000)
- 830

#### 9. COST ESTIMATES

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<tr>
<th>PRIMARY FACILITIES</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
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<tbody>
<tr>
<td>Auxiliary Mixing Rooms</td>
<td>LS</td>
<td>--</td>
<td>--</td>
<td>(529)</td>
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<td>Explosive Handling Waste System</td>
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<td>Control Rooms</td>
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<tr>
<td>Electric Service</td>
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<tr>
<td>Water, Sewer, Gate</td>
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<td>(10)</td>
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<tr>
<td>Steam, Hot and Cold Water</td>
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<tr>
<td>Paving, Driveway, Section</td>
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<td>Storm Drainage</td>
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<td>Site Lighting</td>
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<tr>
<td>Company Yard</td>
<td>LS</td>
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<tr>
<td>Interim Plant, Lab</td>
<td>LS</td>
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</table>

| TOTAL               |     |          |           | 750         |
| CONTINGENCY RESERVE |     |          |           | 38          |
| TOTAL COST          |     |          |           | 788         |
| SURVEY, TIPS, COST |     |          |           | 43          |
| TOTAL REQUESTED     |     |          |           | 831         |
| TOTAL AULTMATION    |     |          |           | 850         |
| INSTALLED MATERIALS |     |          |           | 4,762       |

10. Description of Proposed Construction

The proposed project involves a new safety in the pyrotechnic manufacturing area of Lake City Army PCM. Included will be new mixers, remote material handling systems, fire protection fire suppression systems and improved new bays. The pyrotechnic manufacturing areas were trailer, trailer and 10x10 military tent, and new railroad track. Each of these items will be applied toLCCAI 10A, B, and C.

11. REQUIREMENTS: 7440 SF ADEQUATE: 546 SF SUBST: 0 SF PROJECT:

This project involves the installation of new generation equipment and facilities to improve safety in the pyrotechnic manufacturing areas at LCAAP.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
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</thead>
<tbody>
<tr>
<td>ARMY</td>
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<table>
<thead>
<tr>
<th>3. INSTALLATION AND LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake City Army Ammo Plant</td>
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<tr>
<td>Missouri</td>
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<table>
<thead>
<tr>
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<tr>
<td>Mobilization Group</td>
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</tr>
<tr>
<td>Addition</td>
<td>T892245</td>
</tr>
<tr>
<td>Alteration</td>
<td></td>
</tr>
<tr>
<td>Pyrotechnic Safety Enhance</td>
<td></td>
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</tbody>
</table>

PROJECT:

will include the addition of new mixers, remote material handling systems, fast response fire suppression systems, and improved bay design.

CURRENT SITUATION:

The present facilities and equipment have operated since 1942 to produce pyrotechnic compositions for small caliber ammunition production. The present operation relies on the operator to manually perform all tasks to produce pyrotechnic mixtures. The manual operations performed by the operators are wet and dry mixing, drying, granulating, and blending.

IMPACT OF NOT PROCEED:

Employee exposure to hazardous materials will continue. The absence of an adequate fire suppression system to protect personnel and facilities could lead to catastrophic incident in the area. Equipment currently relied upon such as dryers, mixers, granulators, pulverizers, and blenders are experiencing increased downtime and maintenace.

ADDITIONAL:

This project involves the installation of new generation equipment and facilities to improve safety in the pyrotechnics manufacturing area at LCAAP.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
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<tbody>
<tr>
<td>ARMY</td>
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<th>3. INSTALLATION AND LOCATION</th>
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<table>
<thead>
<tr>
<th>'S. Dennis E. O'Brien</th>
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<tbody>
<tr>
<td>Lieutenant Colonel</td>
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<tr>
<td>Commanding Officer</td>
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3. INSTALLATION AND LOCATION

Lake City Army Ammunition Plant
Missouri

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**SUPPLEMENTAL DATA**

A. ESTIMATED INITIAL COST TO OPERATE NEW FACILITY

B. NUMBER OF ADDITIONAL PERSONNEL REQUIRED TO OPERATE NEW FACILITY

C. ESTIMATED LIFE CYCLE COST TO OPERATE AND MAINTAIN THE DESIGNED FACILITY

D. ESTIMATED LIFE CYCLE COST TO OPERATE AND MAINTAIN THE EXISTING FACILITY IF NEW FACILITY IS A REPLACEMENT

E. PLANNED START DATE OR EXISTING FACILITY

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E. PREPARE CONSTRUCTION PLAN

F. APPROVALS AND INTERFACE

G. BASE TOTAL - $0

H. REVISE PLANS AND SPECS

I. ALL OTHER REPORTS

J. TOTAL COST

K. CONTRACT

L. IN HOUSE

M. CONSTRUCTION START DATE (PLANNED)
### Military Construction Project Data

**Army**

**Installation and Location**
- Lone Star Army Ammunition Pt.
- Texas

**Project Title**
- Addition
- Alteration
- Production Control Fac.

**Program Element**
- 226 22

**Category Code**
- TEMP

**Project Number**
- 5892245

**Project Cost ($000)**
- 410

### Cost Estimates

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<td><strong>REQUEST FOR APP.</strong></td>
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### Description of Proposed Construction

Construction of an annex to an existing pyrotechnic munitions facility. Building #21 to provide space for a control room and lab. Also required to support new pyrotechnic processing equipment. M16A2 plan. Installation on the existing facility. Storage of pyrotechnic materials will also be accomplished in the new annex. The M20A1 will displace current system currently used store these materials. In addition, a new restroom will be provided for and located in the new annex. The existing building will require modifications to the concrete dividing wall between Bays 1 through 7, installation of conductive flooring, provisions for washdown and wastewater collection, and upgrading of steam utilities. A temperature and humidity control system will be required for Bays 1 through 7, corridors, and in the pyrotechnic raw material storage area of the new annex.

**III. Requirement:** 1,448 SF
**Adequate:** 0 SF
**Substd:** 0 SF
PROJECT:
This project will enable Lone Star AAB to enhance personnel safety by providing the space to implement a substantially improved pyrotechnic processing mixture and data entry MIGRAD equipment.

REQUIREMENT:
In order to enhance personnel safety by providing new technological advanced pyrotechnic processing equipment, MIGRAD, additional space to house this equipment is required. The new equipment reduces operator exposure frequency to pyrotechnic materials.

Approximately thirty six pyrotechnic mixtures are currently produced in Building G-33. Each of these mixtures are fully utilized, with some being produced daily. As a result of grinding, burning, then storing in large and finished pyrotechnic mixtures, Building G-33 is utilized to store hazardous materials provided by the MIGRAD System. Additional space is needed for the existing equipment in G-33, must be retained for the production of the new mixtures which cannot be manufactured in G-33.

CURRENT SITUATION:
To produce a typical pyrotechnic mixture using current methods requires the operator to spend time handling pyrotechnic materials, grinding, burning, and storing. This process is hazardous, dangerous, and time consuming. Each pound quantity is handled separately, the operator is in single point processing. The operator is exposed to the pyrotechnic material ten to fourteen times per batch. The MIGRAD System translates the thirty six pounds batch of pyrotechnic mixture into ten to twelve pounds and requires the material into 5 lb. increments. The operator is exposed only when transporting the finished 5 lb. increments.

IMPACT IF NOT PROVIDED:
If this project is not approved, Lone Star AAB cannot fully implement the MIGRAD Systems needed for current pyrotechnic production requirements. The pyrotechnic operation in Building G-33 will continue as is, exposing operators to hazardous materials 10 times more frequently than what could be achieved with the new MIGRAD System.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
<th>2. DATE</th>
</tr>
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<tbody>
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<tr>
<th>3. INSTALLATION AND LOCATION</th>
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<tr>
<td>Lone Star Army Ammunition Pk</td>
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<td>Texas</td>
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<th>TEMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>5892245</td>
<td></td>
</tr>
</tbody>
</table>

ADDITIONAL:
All appropriate measures will be taken to ensure that the health of the worker is protected within all federal and state laws and regulations. This project has been reviewed for historic impact and complies with the intent of the National Historic Preservation Act (NHPA). This project has been reviewed and determined to not require an environmental impact statement pursuant to 40 CFR Part 1508.

Douglas R. Baker
M. CDR
Commander

<table>
<thead>
<tr>
<th>PROJECT SCHEDULE</th>
<th>ENVIRON</th>
<th>COMPLIANCE</th>
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<td>24 MTH</td>
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<td>36 MTH</td>
<td>JUNE</td>
<td>1989</td>
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### SUPPLEMENTAL DATA

**A. ESTIMATED ANNUAL COST TO OPERATE PROPOSED FACILITY**

**B. NUMBER OF ADDITIONAL PERSONNEL NECESSARY TO OPERATE THE PROPOSED FACILITY**

**C. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIGNED FACILITY**

**D. ESTIMATED LIFE-CYCLE COST TO OPERATE AND MAINTAIN THE DESIGNED FACILITY IF NEW FACILITY IN A HICHA REGION**

**E. PLAN AND DESIGN DATA - ESTIMATE**

#### 1. CONSTRUCTION START DATE

- Feb 87
- Jul 87
- Oct 87
- Dec 87

#### 2. COST AT I.I.

- Procurement of Plans and Specs
- All Other Design Costs
- Total Cost (= (a) + (b) or (c) + (d))
- Contract
- In-House

#### 3. CONSTRUCTION START DATE (PLANNED)
**Program Element**

<table>
<thead>
<tr>
<th>PROJECT NUMBER</th>
<th>PROJECT TITLE</th>
<th>COST ESTIMATES</th>
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<tr>
<td>2-4211</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Pyro Safety Enhancement</td>
<td></td>
</tr>
</tbody>
</table>

**Description of Proposed Construction**

This project is to construct a MIGRAD (Mixer, Granulator, Dryer, mixer, 
facility. The facility will have new technology mixers which have been 
developed internally at Pine Bluff Arsenal per MMT Project 4-88-000. The use 
of the MIGRAD mixer will eliminate hazardous traying, drying, and granulating 
operations. There are no suitable existing facilities at Longhorn AAF to 
house these mixers. The MIGRAD mixers require more head room than is 
provided in existing facilities. Alteration of existing facilities has been 
disallowed since new construction to raise the roof would not be in 
compliance with AMC-R 385-100 dated 1 August 1985 requirements.

The operations area of the new mix facility will have two mixer bays, 
four raw material surge bays, two finished mix surge bays, passageways, an 
 inert cart and blender bucket conditioning area and a loading dock. The 
operations area of the facility is approximately 3700 sq ft. Wall design of 
the mixer and surge bays is to be in accordance with TM 5-1300. Requirements
1. COMPONENT  
2. DATE  

<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
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<tbody>
<tr>
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</table>

3. INSTALLATION AND LOCATION  
Longhorn Army Ammunition Pt  
Texas  

4. PROJECT TITLE  
Modernization  
Pyro Safety Enhancement  

5. PROJECT NUMBER  
TEMP  
5892245  

DESCRIPTION OF PROPOSED CONSTRUCTION (CONT)...  

and arrangement of rest rooms, facilities, equipment rooms, fire protection  
deluge valve, etc. is to be determined by the Design Agency. The  
facilities located within an existing pyrotechnic production facility.  
Connect to existing utilities with precision for use roads and  
equipment pits for installation of AMR equipment as indicated in this  
project.

Temperature and humidity conditioning is to be provided in the mixer and  
range bays and heating and cooling are to be provided in other operational  
areas for comfort conditioning. Conditioned air and range areas for a  
relative humidity of 65% at 68 to 72 degrees F is required to reduce  
process handling.

A storm-water treatment plant and a storm water treatment plant  
containing any potential spill. Exhaust ventilation for  
A storm-water treatment plant and a storm water treatment plant  
will be needed. Connection to existing electrical,  
steam, water, lights, telephone, potable water, fire water and sewer lines  
will be required. These utilities are in near proximity to the proposed  
facility.

Equipment free and access roads are needed for this  
project. The project support equipment, etc. will use access roads  
and will be connected to other  
utilities, water, lights, telephone, potable water, fire water and sewer lines  
will be required. These utilities are in near proximity to the proposed  
facility.

11. REQUIREMENTS OF DELIVERABLES  

SAFETY

Safety needs to be improved by reducing personnel exposure to hazardous  
operations and materials. This can be accomplished by use of the new  
technology MIBRAD mixers to eliminate certain manual handling, drying, and  
granulation processes.

REQUIREMENT:  

This project is needed to provide processing improvements which will  

enhance safety. Numerous flashes have occurred at this, and other,  
pyrotechnics producing plants. These flashes have resulted in injuries,  
fatalities, equipment and facility damage, lost production time and
1. COMPONENT: AMY

2. DATE: FY 1989

3. INSTALLATION AND LOCATION:
Longhorn Army Ammunition Pk.
Texas

4. PROJECT TITLE:
Modernization
Pyro Safety Enhancement

5. PROJECT NUMBER:
TEMP
5892245

REQUIREMENT:

(CONT)

increased...t.

CURRENT SITUATION:

Per customer requirements are being proof of using processes and equipment which are of World War II vintage. These processes often require mixing and multiple drying, and storing steps. These operations require excessive operator exposure to energetic and explosive materials.

IMPACT IF NOT PROCEED:

Employee exposure to hazardous materials and operations would remain at the current level. The benefits to be derived from the pending MWT development will unlikely be implemented.

ADDENDUM:

A formal safety analysis has been prepared for this project and is included in this report.

The site was not an existing installation. It requires too much operator exposure to energetic and explosive materials.

Joseph F. Phillips
Joseph F. Phillips
Lt. Col. G1 C
Commander, LHAAP

ESTIMATED CONSTRUCTION START: APRIL 1989 INDEX: 1623
ESTIMATED MIDPOINT OF CONSTRUCTION: OCTOBER 1989 INDEX: 1650
ESTIMATED CONSTRUCTION COMPLETION: APRIL 1990 INDEX: 1666
3. INSTALLATION AND LOCATION
Longhorn Army Ammunition Pk
Lengrorn

4. PROJECT TITLE
Modernization
Pudo Safety Equipment

5. PROJECT NUMBER

6. SUPPLEMENTAL DATA

A. ESTIMATE DOLLARS OF WORK REQUIRED PER FACILITY

B. VEHICLES PER SYMPTOM

C. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 1ST SYMPTOM

D. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 2ND SYMPTOM

E. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 3RD SYMPTOM

F. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 4TH SYMPTOM

G. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 5TH SYMPTOM

H. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 6TH SYMPTOM

I. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 7TH SYMPTOM

J. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 8TH SYMPTOM

K. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 9TH SYMPTOM

L. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 10TH SYMPTOM

M. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 11TH SYMPTOM

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P. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 14TH SYMPTOM

Q. ESTIMATED DOLLARS OF 1ST OPERATE AND MAINTENANCE FOR 15TH SYMPTOM

R. TOTAL ESTIMATED DOLLARS OF 1ST SYMPTOM

S. TOTAL ESTIMATED DOLLARS OF 2ND SYMPTOM

T. TOTAL ESTIMATED DOLLARS OF 3RD SYMPTOM

U. TOTAL ESTIMATED DOLLARS OF 4TH SYMPTOM

V. TOTAL ESTIMATED DOLLARS OF 5TH SYMPTOM

W. TOTAL ESTIMATED DOLLARS OF 6TH SYMPTOM

X. TOTAL ESTIMATED DOLLARS OF 7TH SYMPTOM

Y. TOTAL ESTIMATED DOLLARS OF 8TH SYMPTOM

Z. TOTAL ESTIMATED DOLLARS OF 9TH SYMPTOM

AA. TOTAL ESTIMATED DOLLARS OF 10TH SYMPTOM

BB. TOTAL ESTIMATED DOLLARS OF 11TH SYMPTOM

CC. TOTAL ESTIMATED DOLLARS OF 12TH SYMPTOM

DD. TOTAL ESTIMATED DOLLARS OF 13TH SYMPTOM

EE. TOTAL ESTIMATED DOLLARS OF 14TH SYMPTOM

FF. TOTAL ESTIMATED DOLLARS OF 15TH SYMPTOM

GG. TOTAL ESTIMATED DOLLARS OF ALL SYMPTOMS

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</tbody>
</table>

**Description of Proposed Construction**

The proposed construction will extend the existing railroad siding to accommodate the increased volume of freight traffic expected with the addition of new storage facilities. This will require the installation of additional tracks and ties, as well as the construction of a new platform to accommodate the increased volume of freight traffic.

**Material Handling**

The proposed construction includes the installation of a new material handling system to facilitate the efficient loading and unloading of railcars. This system will include the installation of new loading docks and the modification of existing rail lines to facilitate the movement of freight cars.

**Estimated Cost**

The estimated cost of the proposed construction is $210,000. This includes the cost of materials, labor, and equipment, as well as all other associated costs.

**Schedule**

The proposed construction is scheduled to begin in the next fiscal year and is expected to be completed within 12 months.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 1989 MILITARY CONSTRUCTION PROJECT DATA</th>
<th>2. DATE</th>
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</thead>
<tbody>
<tr>
<td>ARMY</td>
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<table>
<thead>
<tr>
<th>3. INSTALLATION AND LOCATION</th>
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<tbody>
<tr>
<td>Kansas Army Ammunition Plant</td>
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<table>
<thead>
<tr>
<th>4. PROJECT TITLE</th>
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<tr>
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<thead>
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<th>5. PROJECT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEMPEX 32918</td>
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</table>

Current operations in 1981-82 were handled by material handling equipment and conveyors. The state of the art has changed handling equipment significantly as the use of forklift trucks which have differential steering systems has enabled the handling of palletized loads which previously were handled by hand.

In the future, forklift trucks will continue to be used. In future years on the installation, material handling will continue to result in unsafe working conditions and will require the material handling procedures.

S. L. HODGKINS
Maj, USA
MILITARY CONSTRUCTION PROJECT DATA

1. COMPONENT
Army

FY 19

2. DATE

3. INSTALLATION AND LOCATION
Longhorn Army Formation Pk
Texas

4. PROJECT TITLE
Alteration
RED EXP TO ENERG MATEL

5. PROGRAM ELEMENT
6. CATEGORY CODE
2DT FY

7. PROJECT NUMBER
2701-08

8. PROJECT COST ($000)
490

9. COST ESTIMATES

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<td>Labor</td>
<td>LS</td>
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10. Description of Proposed Construction

The proposed work includes the installation to existing facilities and
connections for the explosive expansion of electrical conduit.

Note: The AM of the proposed date is August 1979, applicable to:

Item 5 and 6:

Provide operational shield for Building 52
in Longhorn Annex area. The shield is to prevent propagation of a fireball
between the mixer and press bays and to provide safe access from the press
bays.

Lightning Protection Pipeline and Fence Grounding:

Provide these changes necessary to bring existing facility and utilities into compliance with
the mandatory requirements of Chapter 8, AMC-R 385-100.

Lightning Protection Upgrade - Significant changes in
lightning protection requirements have occurred since
construction of Longhorn operating buildings.
DESCRIPTION OF PROPOSED CONSTRUCTION (CUT):

Special Considerations:

Special, unique, or unusual conditions and considerations must be described. Include environmental and physical limitations, natural and human-made obstacles, and any other factors that affect the construction.

Environmental factors:
- Temperature
- Humidity
- Soil conditions

Human-made obstacles:
- Existing structures
- Access constraints

Natural factors:
- Terrain
- Vegetation

Project data:
- Project number
- Contracting authority
- Contracting officer's name

Safety requirements:
- Adequate safety measures must be in place to ensure the safety of personnel and the environment.

Additional considerations:
- Proper waste management
- Noise reduction strategies

For previous edition may be used internally until exhausted.
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<thead>
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<tr>
<td>Alteration</td>
<td>TEM5</td>
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<tr>
<td>RED EXP 1-358-51</td>
<td>12701-08</td>
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**PROJECT**: (CONTINUED)

In order to comply with mandatory lightning protection and temperature sensitivity lightning requirements per AMC-R 385-100 dated 1
February 1965 and the requirements stated by Chapter 11, Paragraph 171,
ART 5.1.4,

lightning protection for the proposed project, 1-1 August 1998, are not being
incorporated. The probability

"Yield of the proposed lightning protection system, should in fact be
increased by the use of dynamic shielding and condensation of
metal exposure of the potential injury/fatality from
lightning strikes continues, but would remain more probable than necessary.

In this event, approval for waivers,

A Note: Economic analysis has been prepared for this project. Items
required per regulatory direction do not require economic analysis.
Exception 1-32-131 of AF 31-28 applies.

The status quo is not an acceptable alternative. It would allow possible
fireball in mixer or press bay which could block safe egress from the
### 3 INSTALLATION AND LOCATION
Longhorn Army Ammunition Pk, Texas

### 4 PROJECT TITLE
Alteration
RED EXP TO ENERG MAT'L

### 5 PROJECT NUMBER
TEMP
2701-08

---

Additional:

Building: Failure to provide temperature and humidity conditioning equipment, lightning protection upgrades, and grounding of aboveground lines and tanks would not provide the level of protection mandated by regulatory agencies.

Sgt. L. Phillips
12/19/89

---

<table>
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<tr>
<th>Component</th>
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**DD FORM 1391c**

**PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED**

**PAGE NO. 140**
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### SUPPLEMENTAL DATA

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<thead>
<tr>
<th>B. ESTIMATE MAINTENANCE PERSONNEL NECESSARY TO CARRY OUT MAINTENANCE OF PROPOSED FACILITY</th>
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<tbody>
<tr>
<td>PEOPLE</td>
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<table>
<thead>
<tr>
<th>C. ESTIMATE MANPOWER TO OPERATE AND MAINTAIN THE PROPOSED FACILITY</th>
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<tbody>
<tr>
<td>MAINTENANCE PEOPLE</td>
<td></td>
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| D. ESTIMATE PEOPLE TO OPERATE AND MAINTAIN THE PROPOSED FACILITY OF NEW FACILITY IS A |
|---------------------------------------------------------------------------------------|---|
| A                                                                                 |   |

**ESTIMATE OF PROJECT COMPLETION**

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**IN-HOUSE**

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<tr>
<td>1. COMPONENT</td>
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<tr>
<td>ARMY</td>
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### 3 INSTALLATION AND LOCATION

- **Twin Cities Army Ammunition Site**  
  - Minnesota

### 4 PROJECT TITLE

- Igloo Storage

### 6 PROGRAM ELEMENT 8 CATEGORY CODE 7 PROJECT NUMBER 8 PROJECT COST ($000)

- 521 80  
- TEMP 2800-8  
- 3,000

### 9 COST ESTIMATES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>U/M</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>COST ($000)</th>
</tr>
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</table>
| PRIMARY FACILITY  
- Igloo | EA | 2 | 411 | 822 |
| SUPPORT FACILITY  
- Site Preparation  
- Utility Setup | | | | |
| | | | | |
| TOTAL | | | | 1,868 |
| 10. Description of Proposed Construction

- Construct two propellant powder storage igloos and demolish existing substandard wood frame structures.

- REQUIREMENT: 6,700 SF ADEQUATE STORAGE REQUIREMENT: 6,700 SF

- PROJECT:

- Construct two propellant powder storage igloos, and demolish existing substandard wood frame structures.

- REQUIREMENT:

  - This project is to provide powder storage facilities at TCAAP that will meet criteria of Army security and safety regulations.
**CURRENT SITUATION:**
Present facilities are substandard, temporary wood structures that do not meet safety or utility standards, and have been used under waivers which will probably not be renewed.

**IMPACT TO OTHER FACILITIES:**
If this project is not approved, use of the existing facilities will be impossible until new waivers are granted - since the structures are not in compliance with AR 11-211 and DAB 235-197.

**ADDITIONAL:**
The project has been on the list as part of a total project for six storage facilities, four of which are proposed to be constructed in FY83 (see attached).
### Supplemental Data

**A. Estimated Annual Cost to Operate Proposed Facility**

**B. Number of Additional Personnel Necessary to Carry Out the Operation of the Proposed Facility**

**C. Estimated Life-Cycle Cost to Operate and Maintain the Desired Facility**

**D. Estimated Life-Cycle Cost to Operate and Maintain the Existing Facility if New Facility is a Replacement**

**E. Historic and Projected Estimates**

- **1980:**
- **1981:**
- **1982:**
- **1983:**
- **1984:**
- **1985:**
- **1986:**
- **1987:**
- **1988:**
- **1989:**
- **1990:**

**F. Present Value of a Series of Payments**

**G. Total**

- **1. Initial Capital Investment (Acquisition):**
- **2. Cost of Operating and Maintaining:**
- **3. Total:**
- **4. Contract:**
- **5. In House:**

**4. Construction Start Date: Planned:**

**Apr 80**
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**Description of Proposed Construction**

This project will correct electrical distribution deficiencies at Holston related to the spacing between distribution line poles, provide underground electrical service to explosives operating buildings, and upgrade the lightning protection center for the explosives plant and support facilities.
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<thead>
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<th>1. COMPONENT</th>
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<tr>
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<tr>
<td>FY 1980 MILITARY CONSTRUCTION PROJECT DATA</td>
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<th>3. INSTALLATION AND LOCATION</th>
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<td>HOLSTEIN ARMY AMMUNITION FORT</td>
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<th>4. PROJECT TITLE</th>
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<tr>
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<tr>
<td>TEMP</td>
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<td>2701/2</td>
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**CONT.**

In accordance with the latest requirements of AMC 385-100 Safety Manual dated November 1, 1979, the project will benefit the present and future modernization, maintenance, and expansion plans for the Holstein Army Ammunition Facility. These improvements, along with the electrical modifications, will be gained by installing the new system under the same project rather than in two separate projects.

**PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED.**

Project 107-100A is programmed to correct lighting protection but not the other electrical distribution deficiencies.
<table>
<thead>
<tr>
<th>1. COMPONENT</th>
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3. INSTALLATION AND LOCATION

HOLSTON ARMY AMMUNITION FY-2191
Tennessee

4. PROJECT TITLE

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</thead>
<tbody>
<tr>
<td>Electrical SP Corrections</td>
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5. PROJECT NUMBER

| TEMP 2701/2 |

PROJECT:

To conform to the latest requirements of ACSR 88-500 Safety Manual dated August 1991, the project will benefit from present and future modernization, rehabilitation, and expansion projects. The installation and correction of these problems is required during the current installation will be gained by designing and installing the new systems under the same project rather than present under separate projects.

REQUIREMENT:

Electrical and Still will control electrical distribution and lightning protection installation of electricity at a venue with ACSR 88-500 for all electrical installation.

Project 587300A is programmed to contain lighting protection but not the other electrical distribution features.
CURRENT SITUATION:

In lightening prev. years, existing, and underground electrical system, requirements of the Army Safety Manual are presently in violation at 105 L. This precludes the modernization, reactivation, or reconfiguration of existing facilities. The Army Safety Manual has insisted that the plant be brought into compliance with the "latest" regulations. This has presented some difficulty in the case of the presently active project designs were initiated prior to the adoption of the new regulations During this period the subject facilities were not addressed. In addition, cost constraints will prevent outlay of the necessary project funds will not be available to meet the deficiencies. Start-up of the current project on the time line allowed by Safety until the deficiencies are met which will allow in the ability to meet projected EFDP, starting, and operational dates in 1989. Modernization levels to which referred in terms:

SCHEDULE:

In light of the plant being modernized, reactivated or otherwise, any changes in the current EFDP cannot be reconciled or made to specific deficiencies as per Army Safety. Therefore, 1989 operational date is determined for completion.

METHODOLOGY:

In order to meet the guideline, a plan will be prepared. It is expected that the plan will be well received by the environment.
The proposed installation corrections will be prepared and submitted.

JAMES E. BALD, JR
JAMES E. BALD, JR
INC. CO

<table>
<thead>
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**MILITARY CONSTRUCTION PROJECT DATA**

**PRELIMINARY DATA**

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<tr>
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<td>C. ESTIMATED DUTY PERIOD OF NEW AND MAINTAIN THE NEW FACILITY</td>
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<td>D. ESTIMATED DUTY PERIOD OF NEW AND MAINTAIN THE EXISTING FACILITIES</td>
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**TIME LINE**

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**CONTRACT**

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<th>B. TOTAL COST</th>
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**CONSTRUCTION START DATE (PLANNED)**

<p>| 4. CONSTRUCTION START DATE (PLANNED) | MAR 89 |</p>
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**NOTE:** Provide any changes, additions, deletions to the above to: RDA (DAMA-PPC), Washington, DC 20510-0665, or Commercial: (202) 691-6063, RDA (DAMA-RA): 233-8651.
END
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