



INDUSTRIAL JOINT CROSS SERVICE GROUP

July 13, 2005

MEMORANDUM FOR FRANK CIRILLO, DIRECTOR REVIEW AND ANALYSIS

Subject: NI Industries at Riverbank Army Ammunition Plant , OSD BRAC
Clearinghouse #C0499

The following is in response to your e-mail inquiry of July 8, 2005, where you asked the following:

***QUESTION:** NI Industries at Riverbank Army Ammunition Plant is the only producer of large caliber deep-drawn cartridge cases in the United States. Shouldn't this fact exempt Riverbank from consideration for closure? If not, why not?*

Answer: Our analysis did not automatically eliminate any installation using unique capability as a rationale. Every site was on the table for analysis. When a site had a unique capability, we considered the following:

- What is the impact of the closure/relocation to the war-fighter and how heavily is this site supporting the current conflict?
 - Response: We can mitigate impacts of deep drawn cartridge cases with stockpiling.
- Can the commodity be relocated and what is the cost to relocate?
 - Response: Yes the commodity can be relocated. Buildings are available and the cost to relocate is minimal.
- Can we recreate deep drawn cartridge case capability at Rock Island Arsenal?
 - Response: Yes we can relocate the equipment from Riverbank to recreate deep drawn cartridge case. Public Private Partnering lowers technical risk.

-
- How many other munitions functions are performed at this site (Production of other commodities, munitions maintenance, munitions demilitarization, and munitions storage)?
 - Response: None. Riverbank has the capability to produce deep drawn cartridge cases, grenade metal parts, and mortar metal parts; however, Riverbank is only producing deep drawn cartridge case metal parts.
 - What is the sites rate of utilization?
 - Response: Riverbank's rate of utilization is 5 percent.
 - Without facilitization, can private industry perform this work?
 - Response: The answer is no for deep drawn cartridge cases.
 - What is the level of risk associated with the relocation of deep drawn cartridge cases?
 - Response: With Public Private partnering and stockpiling of cartridge cases the risk is moderate.
 - Are there any other requirements that cannot be met without modernization?
 - Response: Yes. With Riverbank's existing capability, they cannot accommodate Military Department's 20 Year Force Structure requirements for Cargo Grenade Metal Parts. For Riverbank to produce the projected requirement, the installation will require modernization.

The final recommendations considered:

- Establishment of multi-functional site
- Increase in site's Military value
- Increase site's plant utilization
- Total metal parts capability
- Reduction in excess infrastructure
- Support to the war-fighter

- The ability to surge

Question: *Production of large caliber deep-drawn cartridge cases requires a high level of technician intervention in order to achieve quality consistency from product to product. Was this fact considered as part of the closure scenario?*

Answer: Yes technical skills were considered in the analysis. This is why the outcome considered locating the deep drawn cartridge case at Rock Island. Analysis showed a need for capabilities that would support Public Private Partnering. Rock Island Arsenal provides the following support system:

- Heat treat capability
- Forging capability
- Casting capability
- Annealing capability
- Apprenticeship programs for machinists, electricians, molder/foundry/pattern maker, pipe fitters, tool and die making
- Metal turning
- Press Forming
- Manufacturing skill sets
- Similar workforce
- Non-destructive testing
- Full metal fabrication with press, laser, shear, welding, etc
- Full engineering support with material test lab metallurgist and production support engineers
- Buildings with the height clearance needed for presses
- A totally vertically integrated manufacturing facility that begins with raw material and ends with a finished product

Question: *Specifically, did DoD evaluate the plausibility of transferring this production process to Rock Island (i.e. how quickly can this technical expertise be redeveloped at Rock Island)?*

Answer: With access to the apprenticeship program at Rock Island, existing skill sets, supporting capabilities, local community skills, and Public Private Partnering, it is estimated that it will take 2-3 years.

Question: Moreover, what mitigations were contemplated to account for the possibility that Riverbank's expert personnel may not relocate with this mission?

Answer: The contractor that wins the competition will bring a certain percentage of his work force with him. The percent of skilled workforce that will relocate will be supplemented by the following resources from the gaining area:

- Apprenticeship program
- Existing skill sets
- Local businesses
 - John Deere
 - International harvester

Question: Finally, how will this move affect weapons systems currently undergoing development, test and evaluation?

Answer: This recommendation considered the 155MM Navy program and 105MM Army Stryker program. Will remove impact to the war—fighter by stockpiling all deep drawn cartridge case requirements (5" 54, 76MM, 105MM and 155MM) for the Army and the Navy.

Should additional information be required, feel free to contact me at 703-560-4317 or e-mail jberry@gallows.vacoxmail.com



Jay Berry
Executive Secretary

California

2000 Pop.: 33,871,648 2003 Est.: 35,484,453

Reg. Voters: 16,557,273 Rep.: 35% Dem.: 43% Other: 22%

Caucasian: 60% African-Am.: 7% Nat. Am.: 1% Asian: 11% Other: 22% Hisp.: 32%

Senators

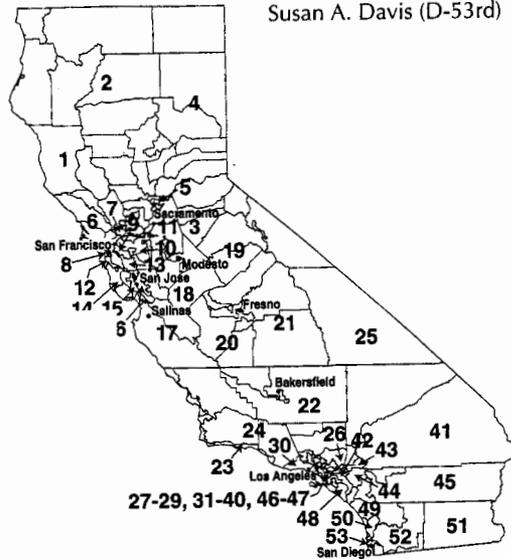
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Barbara Boxer (D)

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Duncan Hunter (R-52nd)
Susan A. Davis (D-53rd)

DIET



Delgado, George, CIV, WSO-BRAC

To: Van Saun, David, CIV, WSO-BRAC; Robertson, Kathleen, CIV, WSO-BRAC
Subject: Clearing house questions on Riverbank Army Ammunition Plant

1. Indications from NI Industries are that producing the large caliber deep drawn cartridge cases are still a single item basis as opposed to mass production and as such require significant intervention by a highly skilled technician to keep production quality consistency from one cartridge to the next.

How was the analysis conducted to determine the transferability of skills from RDAAP to Rock Island?

During the development of this closure scenario was the high degree of input by highly skilled technician in the production to maintain consistent quality standards considered? How was this taken into account in the decision to close RDAAP?

and what mitigations were developed to handle these specialized production aspects?

What difficulties to developing this expertise at Rock Island assuming that key experienced personnel at RBAAP may not move with the production?

How transferable is this skill to Rock Island personnel?

How quickly can the expertise be developed at Rock Island?

How will this move affect weapons systems undergoing test and development?

MEMORANDUM OF MEETING

DATE: 22 June 2005

TIME: 14:00-15:30

MEETING WITH: NI Industries, Inc (Responsible for operating Riverbank Army Ammunition Plant, CA)

SUBJECT: Recommended closure of Riverbank Army Ammunition Plant

PARTICIPANTS:

John G. Maniatakis: Executive Vice President, NI Industries, Inc. 323- 588-7623

Winifred T. Wu: General Manager, NI Industries, Inc. 209-869-7215

Daniel C. Maldonado: CEO, MARC Associates, Inc. 202-833-0007

Eve O'Toole: Senior VP, MARC Associates, Inc. 202-833-0007

Phil Lighty: Legislative Assistant, Congressman Radanovich 202-225-3402

Commission Staff:

David Van Saun: Joint Cross- Service Lead, Review and Analysis

Gary Dinsick: Army Lead, Review and Analysis

Ashley Buzzell: Associate Analyst, Review and Analysis

Karl Gingric: Senior Cobra Analyst, Review and Analysis

Tyler Oborn: Cobra Analyst, Review and Analysis

MEETING SUMMARY:

Military Value underestimated

- Unique technology
- Deep drawn, large caliber cartridge cases

No Capacity questions

DoD Underestimated costs

- One time cost: \$60 M not \$25.5M
- Acquisition of new equipment
- Prove-out cost
- Training and travel
- Industrial Waste Treatment Facility
- ***Asked NI Industries to provide cost projection estimates***

Concerned about relocating "Integrated...Facility"

DoD projected optimistic savings

1. In the production of the large caliber deep drawn steel cartridge case
2. Does it still require direct artisan involvement case by case
3. What factors were taken into consideration in determining that the large cal deep drawn steel cartridge case could be moved to R1A successfully
4. What indications do you have that the 1000 cal can be successfully manufactured at R1A

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NATIONAL PARKS

<http://www.radanovich.house.gov>



U.S. House of Representatives
Washington, DC 20515-0519

GEORGE RADANOVICH
19TH DISTRICT, CALIFORNIA

June 15, 2005

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COMMENT LINE
(202) 478-5389

Donald Rumsfeld
Secretary of Defense
1000 Defense Pentagon
Washington D.C. 20301-1000

Dear Mr. Rumsfeld:

One of the Government installations currently recommended for closure by the DOD is the Riverbank Army Ammunition Plant (RBAAP), located in my District. Needless to say, I am very concerned about the recommendation, not only from the impact on our community, but more importantly its impact on national defense preparedness and national security.

In order to understand the justification for seeking to close RBAAP and relocate the large caliber deep drawn steel cartridge case capability to Rock Island Arsenal, I have prepared the attached list of questions. I request your assistance in obtaining answers from DOD as promptly as possible. Since the Commission hearing in Los Angeles is scheduled for July 14, 2005, I would be very appreciative if answers can be secured in sufficient time to prepare for this hearing.

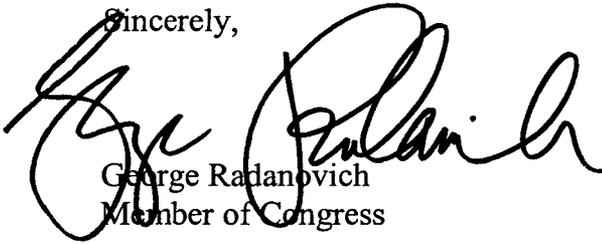
When reading the various BRAC related reports, several points concern me, which I believe were based on deficient information. The BRAC reports appear to overlook the fact that:

- Riverbank is the only industrial base facility capable of producing large caliber deep drawn steel cartridge cases in support of ammunition for the 105mm Stryker, 5"54, 76mm, Navy gun; and the R&D program for the 155mm Advanced Gun System for the Navy DD(X) program.
- Riverbank's manufacturing capability and technological know-how in the manufacture of these military products supports the Army's Future Combat System and the Navy's Advanced Gun System requirements.
- Riverbank serves our military's joint capacity needs.

Also of serious concern are various BRAC cost calculations that significantly underestimate the relocation of the cartridge case capacity from Riverbank to Rock Island.

I am very appreciative of any assistance and support your could provide in expediting responses to the attached questions. Should you need additional information or have any questions concerning my request, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read "George Radanovich". The signature is fluid and cursive, with a large initial "G" and "R".

George Radanovich
Member of Congress

Cc: The Honorable Jerry Lewis

Cc: The Honorable Duncan Hunter

Riverbank Army Ammunition Plant

The following questions are based on review of the Department of Defense Base Closure and Realignment Report Volume 1 Part 2 of 2: Detailed Recommendations dated May 2005

1. Since Riverbank AAP is the only industrial base facility capable of producing large caliber steel cartridge cases in support of ammunition for the 105mm Stryker, 5"54, 76 mm, Navy Gun; and the R&D program for the 155mm Advanced Gun System for the Navy's DD(X) program, what criteria were used to judge these capabilities as "excess"?
2. The justification indicates there are four sites in the Industrial Base actively producing metal parts. Please identify the sites and their specific capabilities; in producing large caliber deep drawn steel cases.
3. The deep drawn large caliber cases are produced by a very unique process, based on technical know-how developed and perfected over 70 years by a California-based contractor. How does DOD plan to relocate this technical and intellectual property, i.e., know-how to Rock Island Arsenal?
4. Where is the redundancy in the manufacture of deep drawn steel cartridge cases in the Industrial Base?
5. The justification cites the need "to remove excess from the Industrial Base." How did DOD determine "excess" at Riverbank? How was Riverbank's unique capacity to manufacture large caliber deep drawn steel/brass cartridge cases evaluated in determining facility utilization?
6. Please provide studies that were conducted or data collected from Riverbank and the year of this information, which were utilized in the economic analysis model?
7. What studies were conducted or data collected to verify Rock Island's capabilities and know-how to manufacture the large caliber deep drawn cartridge cases? What was the year of these studies or data sources?
8. What steps did DOD take to validate and certify the input data on both Riverbank and Rock Island relative to cartridge case manufacturing?
9. The justification cites that closure allows DOD to "generate efficiencies." Please provide specific data on each efficiency generated by closure.
10. The justification cites that closure allows DOD to "nurture partnership with multiple sources in the private sector." Please provide details for each of the private sources DOD has identified for nurturing. Please indicate whether any of these private sources are capable of producing large caliber deep drawn steel cartridge cases.
11. What assumptions were made to handle tenants currently leasing at the Riverbank facility to help the Army offset the facility maintenance costs?
12. Were the costs associated with terminating tenant leases at Riverbank considered? If not, what is the additional cost involved?
13. Large caliber steel deep drawn cases and the grenade metal parts manufacturing requires a highly skilled design, technical, manufacturing, and engineering capabilities. Are these capabilities available at Rock Island? If not, what are DOD plans on acquiring these capabilities?

14. What are the current cost structure (such as overhead, G&A, materials, and direct and indirect labor) at Rock Island?
15. If Rock Island's cost structure cannot support competitive pricing for cartridge cases, how does DOD plan to meet ammunition requirements in a cost effective manner?
16. Riverbank is designated as a surge facility for M42 and M46 grenade metal parts and is the only plant known to have produced M77 grenade bodies. How was Riverbank's capacity to produce cargo grenade metal bodies evaluated in determining facility utilization? What are DOD plans to move this capability to Rock Island?
17. DOD has also recommended that the M42 and M46 grenade metal parts capability from Mississippi AAP be relocated to Rock Island. It is our understanding that Mississippi AAP does not currently have technical manpower knowledgeable in the manufacture of these grenade bodies, as exists at Riverbank; and that the installation cannot be easily inactivated. What are DOD plans to establish this unique capability at Rock Island?
18. The recommendation noted that new construction is planned at Rock Island. Please indicate the purpose of the new construction, the type and the cost involved. Was this cost considered in the one time cost?
19. What environmental infrastructure does Rock Island have to treat the discharge from the chemicals utilized in the manufacturing process?
20. Have the additional costs of the operating the new construction as well as the environmental treatment facility been considered in the BRAG evaluation?
21. What constitutes the one time cost of \$25.2 million, and what are the assumptions made for each cost element?
22. Have the costs of relocating the following equipment considered in the one time cost?
 - Relocation and installation of 17 presses, 6 machining centers, tempering, annealing, zinc plating facilities, and heat treatment facilities.
 - Proper design of the foundation and pits for heavy machinery such as presses and machining centers.
 - Metrology, chemical, and metallurgical laboratories.
23. In justifying relocation of the cartridge case metal parts capability to Rock Island, did DOD take into account the following factors?
 - Over \$13 million would be required to procure two major pieces of equipment: an anneal furnace, although currently utilized in production, the furnace is 50 years old and would not be expected to survive the move; an additional 5,000 ton press - because of limited press technical know-how, Rock Island would not likely be able to take advantage of utilizing the lower tonnage press at Riverbank to produce the 155mm Advanced Gun System cases.
 - Additional \$9 million would be needed to replace the zinc plating and thermal treatment facilities which are not likely to survive the move.
 - Were these additional costs in excess of \$20 million considered in the payback calculation?
24. Has the cost of training personnel been accounted for in the one time cost? If not, what is the additional cost?
25. Has the cost of prove-out been accounted for in the one time cost? If not, what is the additional cost?
26. What is the estimated timetable from closure to removal/replacement to installation, training, and prove-out?

27. Is the one time cost of \$25.2 million included in the calculation of the net cost of \$10.4 million after certain savings are projected?
28. What are the assumptions made at arriving at a recurring savings of \$6.5 million? Please provide a breakdown of each area of savings
29. What is the payback year for DOD's investment in closing Riverbank and relocating the cartridge case line at Rock Island and making it fully operational at a cost competitive level? How does this correlate with the 3-year payback period cited in the report?
30. What is the interest rate used in the payback calculations? What is the basis of this rate? What are the sunk costs considered?
31. Please provide a breakdown of the \$2.5 million for environmental compliance activities and specify by the elements of environmental compliance including, for example, permitting, air, water, and sewer monitoring, equipment, etc. What was the source for this data?
32. Since Rock Island is a Title V Stationery Source, did the evaluation include costs for whatever Best Available Control Technology and/or emission offsets may be required? If Rock Island discharges pretreated industrial wastewater to the City of Rock Island, was the impact on the City's POTW evaluated? If additional pretreatment units are required to meet discharge limitation, were these costs included?

The following questions were based on review of the Department of Defense Report to the Base Closure and Realignment Commission, Department of the Army Analysis and Recommendations BRAC 2005, Volume III dated May 2005.

1. According to the BRAC reports, “the Army did not include ‘unique capability’ within Military Value of Installations (MVI), but added these capabilities in its Military Value Portfolio determination (MVP) as constraints if the Army had a requirement for the capability.” Further, “the MVP analysis was Army centric and did not account for Joint capacity available or for unique capabilities from a Joint perspective. These Joint aspects were considered within scenario analysis.” How were Riverbank’s unique capabilities and joint aspects, including its role in meeting the Navy’s requirements, taken into account by the BRAC Senior Review Group (SRG) in the Military Portfolio scenario analysis?
2. Please provide an explanation/justification as to how the Army determines that Rock Island Arsenal is a suitable candidate for establishing a cartridge case facility when Rock Island’s output score for Munitions Production Capability under Military Attribute #21 is zero. Given this score, it would appear that Rock Island currently does not possess the munitions production capability or the technological know-how to support the manufacture of large caliber deep drawn steel cartridge cases. What considerations has the Army given to Rock Island’s deficiencies?
3. Please provide details by which the military within SRG or Joint Cross Service Group (JCSG) determined whether or not to retain Riverbank in the portfolio.
4. Please identify the two metal part installations under Munitions Production Attributes that were considered as constraints in the MVP evaluation and provide the justification for designating each as a constraint.
5. We would like to know which agencies completed the Installations Capacity Data Call and the Military Value Data Call for Riverbank. Which audit community determined the accuracy of the source and data? When was the data last updated for the final MVI and MVP results?
6. The BRAC report stated that the Army Material Command G3 is the Army Senior Military Executive (SME). Please identify the individuals and the services they represent as the SMEs within the Industrial Group for the Metal Parts Manufacturing. Please also provide the Military Supporting Documentation with details of the SME interviews for the metal parts installation for the manufacture of cartridge cases at Riverbank.

Delgado, George, CIV, WSO-BRAC

From: Dinsick, Robert, CIV, WSO-BRAC
Sent: Friday, July 01, 2005 7:25 AM
To: Delgado, George, CIV, WSO-BRAC
Cc: Van Saun, David, CIV, WSO-BRAC; Bieri, Elizabeth, CIV, WSO-BRAC
Subject: FW: NI Relocation Cost Estimate

Importance: High

Attachments: RBAAP Submittal to BRAC Commission 06302005.pdf



RBAAP Submittal to
BRAC Commiss...

George,

Here is the data for the Riverbank COBRA rerun per our meeting. Talk it over w/ Dave but I suggest we get Karl Gingrich to do this for us. I think we know how it will turn out but for analysis sake we should do it.

R.Gary Dinsick
Army Team Chief
Base Realignment and Closure Commission
2521 Clark Street, Suite 600
Arlington, VA 22202
(703) 699-2950

From: Winnie Wu [mailto:winniewu@niindustries.com]
Sent: Thursday, June 30, 2005 10:25 PM
To: robert.dinsick@wso.whs.mil
Subject: NI Relocation Cost Estimate
Importance: High

Dear Mr. Dinsick:

Thank you again for giving NI the opportunity to meet with your team last week.

Attached for your use to make another COBRA run is NI's white paper with a rough order of magnitude estimate for relocating the cartridge case line from Riverbank to Rock Island.

As I do not have Mr. Dave Van Saun's email address from his business card, please forward this information to his attention. I will also follow up with Mr. Van Saun if he wishes to have the documents faxed.

Sincerely,

Winnie Wu

winniewu@niindustries.com

General Manager

NI Industries, Inc.

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P. O. Box 856

Riverbank, CA 95367

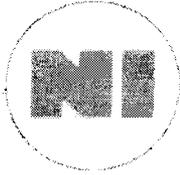
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RIVERBANK ARMY AMMUNITION PLANT
a TriMas Company

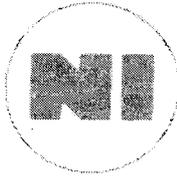
June 30, 2005

This report, prepared by NI Industries, Inc. (NI), operating contractor of the Riverbank Army Ammunition Plant (RBAAP) since 1951, itemizes the scope and a cost estimate for relocating the Flexible Cartridge Case Manufacturing Facility to the Rock Island Arsenal (RIA). Third party budgetary quotations have not been obtained due to the magnitude of the activity and the extremely short time frame. The itemized Rough Order of Magnitude cost estimates and recommendations contained herein are based on NI's experience with operation and maintenance of this equipment; design, acquisition and installation of new equipment; and recent relocation of similar equipment from various other facilities to RBAAP. The RBAAP Flexible Cartridge Case Manufacturing Facility was designed to accommodate up to the Navy 5 inch case. Research and Development quantities of the Navy 155mm AGS case have been possible with temporary equipment modifications. However, production contract quantities of the 155mm AGS case will require additional equipment enhancements and augmentation.

NI Industries, Inc. has estimated the cost to relocate the Flexible Cartridge Case Manufacturing Facility as follows:

Cost Assumptions:

- Cost estimates have not been included for required major utility infrastructure and regulatory requirements at RIA
- Equipment foundation estimates are based on soil conditions at RBAAP
- Due to age and configuration of some equipment, special consideration is given to replacement instead of relocating
- Material handling cost reflects the current method at RBAAP
- Installation of equipment at RIA facility does not require structural modification to any buildings
- The quantities of electrical power, natural gas and water currently available at RBAAP will be available at RIA
- Cost estimates have not been included for protecting equipment and product from severe atmospheric conditions.
- Cost estimates to treat industrial effluent at RIA is not included



NI INDUSTRIES, INC.

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RIVERBANK ARMY AMMUNITION PLANT
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COBRA Analysis Inputs:

- 1-Time cost associated with relocation of designated existing equipment from RBAAP to RIA is \$13,674K.
- 1-Time cost associated with acquisition of replacement equipment at RIA is \$16,813K. This pertains to equipment that cannot be relocated due to age, condition and/or structural limitation.
- 1-Time cost associated with retrofitting/refurbishing/upgrading relocated equipment and construction of pits, foundations and pads at RIA is \$11,581K.
- 1-Time cost associated with make ready and proveout at RIA is \$10,000K, evenly distributed over the years 2008 through 2011.
- 1-Time cost associated with refurbishing buildings at RIA is \$2,000K. This cost was included by DoD in its analysis.
- 1-Time cost associated with engineering and program management at RIA is \$2,500K, evenly distributed over the years 2006 through 2011.

COBRA Analysis Category	Site	Description	Cost (Thousands)
OTHER 1-Time Other	RBAAP	Relocation of Existing Equipment	\$13,674
OTHER 1-Time Other	RIA		\$40,394
		Acquisition of New Equipment	\$16,813
		Retrofitting/Pits/Pads	\$11,581
		Proveout	\$10,000
		DoD Cost to Refurbish Building at RIA	\$2,000 (*)
O&M OTHER Prog Manage	RIA	Engineering and Program Management	\$ 2,500
Total Cost Without (*)			\$54,568
Total Cost With (*)			\$56,568

NI also urges the BRAC Commission to review the Plant Replacement Value, recurring savings, and cost avoidance used in the COBRA run as some of these estimates appear optimistic.

Eq No.	Equipment	Condition	Relocate and Upgrade	Description of Estimate	RBAAP 1-Time Cost	RIA 1-Time New Eq	RIA 1-Time Cost
1	American Plate Wheelabrator	Good. Needs electrical upgrades.	\$1,250,000	Includes move cost. Upgrade electrical components.	\$1,062,500		\$187,500
	American Plate Wheelabrator Pit		\$187,500		\$0		\$187,500
2	Swindell-Dressler Box Furnaces	Good. Requires manual, 24-hour supervised operation to control temperature uniformly throughout the load. This could be compensated by upgrading with automated control system. Requires 30-ton crane for movement of furnace and inner covers.	\$1,875,000	Purchase and install new carbottom furnace.		\$1,875,000	
3	6-foot, 1.25-inch Cincinnati Shear	Poor. Clutch assembly in poor shape, in need of complete rebuild.	\$218,750	Includes move cost. Upgrade material handling system.	\$62,500		\$156,250
	6-foot, 1.25-inch Cincinnati Shear Foundation		\$46,875		\$46,875		\$0
	10-ton Bridge Crane	Fair, except for hoist system which is in good condition.	\$250,000			\$250,000	

Eq No.	Equipment	Condition	Relocate and Upgrade	Description of Estimate	RBAAP 1-Time Cost	RIA 1-Time New Eq	RIA 1-Time Cost
4	1000-ton Clearing Press	Fair.	\$531,250	Includes move cost. Upgrade clutch and brake assembly, cushion cylinders and shunt height assembly.	\$500,000		\$31,250
	1000-ton Clearing Press Pit		\$93,750		\$93,750		\$0
5	2000-ton National Press	Fair.	\$687,500	Requires upgrade of controls, including automatic operation, and safeguards.	\$500,000		\$187,500
	2000-ton National Press Pit		\$125,000		\$93,750		\$31,250
6	20,000-lb/hr Surface Combustion Corp Roller Hearth Furnace and material handling system	Poor. Burners are in fair condition and controls are good. Rollers are substantially worn and in poor condition. Roller seals, fan seals and door seals need replacement. The drive system is in poor condition and is antiquated. Prewash section is in poor condition and is inadequate.	\$6,875,000	Purchase and install new 10,000-lb/hr Annealing Furnace with pre-wash and material handling system.		\$6,875,000	

Eq No.	Equipment	Condition	Relocate and Upgrade	Description of Estimate	RBAAP I-Time Cost	RIA I-Time New Eq	RIA I-Time Cost
7	LeFort Phosphate Coating Machine	Poor. Sulfuric Acid Tank, Zinc Phosphate Tank, their heat exchangers and pumps are new. The other tanks and the entire tunnel are severely corroded and in very poor condition. The drive system, heat exchangers, pumps, manifolds, scrubber and exhaust system are in poor condition. All roller bearings and seals need replacement.	\$4,062,500	Purchase and install new Phosphate Coating Machine.		\$4,062,500	
	Containment and Foundation Pit for Roller Hearth Furnace and Phosphate Coating Machine		\$468,750		\$0		\$468,750
8	700-ton Lake Erie Press	Good	\$500,000		\$500,000		\$0
9	700-ton Lake Erie Press	Good. Needs electrical upgrades.	\$562,500		\$562,500		\$0
10	600-ton Lake Erie Press	Good. Needs new heat exchanger	\$500,000		\$500,000		\$0
11	300-ton Lake Erie Press	Good. Needs electrical upgrades.	\$437,500		\$437,500		\$0
12	200-ton Lake Erie Press	Good	\$375,000		\$375,000		\$0
13	150-ton Lake Erie Press	Good	\$375,000		\$375,000		\$0
14	125-ton Lake Erie Press	Good	\$375,000		\$375,000		\$0
15	125-ton Lake Erie Press	Laidaway	\$375,000		\$375,000		\$0

Eq No.	Equipment	Condition	Relocate and Upgrade	Description of Estimate	RBAAP 1-Time Cost	RIA 1-Time New Eq	RIA 1-Time Cost
16	100-ton Lake Erie Press	Good	\$375,000		\$375,000		\$0
17	100-ton Lake Erie Press	Good	\$375,000		\$375,000		\$0
18	250-ton Williams & White Press	Good	\$375,000		\$375,000		\$0
19	3500-ton Lake Erie Press	Good	\$1,000,000	Includes move cost. Upgrade electronic controls.	\$937,500		\$62,500
20	4500-ton Lake Erie Press	Good	\$1,000,000	Includes move cost. Upgrade electronic controls.	\$937,500		\$62,500
	Recondition All Lake Erie Presses		\$4,125,000		\$0		\$4,125,000
	Pits for 100-ton through 4500-ton Hydraulic Presses		\$2,125,000		\$0		\$2,125,000
21	75-ton Bliss Press, 60-ton Bliss Press (5 each), 22-ton Bliss Press	Good	\$93,750		\$93,750		\$0
	75-ton Bliss Press Pit		\$18,750		\$0		\$18,750

Eq No.	Equipment	Condition	Relocate and Upgrade	Description of Estimate	RBAAP 1-Time Cost	RIA 1-Time New Eq	RIA 1-Time Cost
22	New Britain Lathe, 695E (5 each), 175 (3 each), 155CD (3 each)	Poor. These lathes have produced several million parts. All 11 lathes need to be completely rebuilt. Some replacement parts are no longer available.	\$3,750,000	Purchase and install (4 each) CNC Lathe with automated material handling system. Four (4) CNC Lathes will replace the capability of all 11 New Britain Lathes.		\$3,750,000	
23	Cincinnati Milacron CNC Lathe (2 each)	Good	\$62,500		\$62,500		\$0
	Isolation Pads for Lathes		\$225,000		\$0		\$225,000
24	CJI Heat Treat Furnace and Surface Preparation Unit	Good. Air emission scrubber is inadequate. Exhaust capture system is inadequate. Structural components exposed to salt vapors need to be sandblasted and recoated. Access to process tanks and components for maintenance is very limited.	\$4,062,500	Includes move cost. Modify structure to accommodate 155mm AGS Cartridge Case. Purchase and install new air emission capture and control system.	\$1,875,000		\$2,187,500
	Containment and Foundation Pit for Heat Treat Furnace and Surface Preparation Unit		\$250,000		\$0		\$250,000
25	Zinc Plating Unit	Good. Hoists, tanks and structural components exposed to chemical vapors need to be sandblasted and recoated.	\$1,875,000	Includes move cost. Refurbish unit and recoat sulfuric acid tanks. Modify structure to accommodate 155mm AGS Cartridge Case.	\$937,500		\$937,500
	Containment Trench for Zinc Plating Unit		\$93,750		\$0		\$93,750

Eq No.	Equipment	Condition	Relocate and Upgrade	Description of Estimate	RBAAP 1-Time Cost	RIA 1-Time New Eq	RIA 1-Time Cost
26	5700 lb/hr Clayton Steam Generator (2 each)	Good	\$46,250	Includes move cost. Rebuild pumps and upgrade system.	\$27,500		\$18,750
27	Lefort Parts Washer (2 each)	Fair. One washer needs steam plate coils and new pumps installed.	\$93,750	Includes move cost. Purchase and install new plate coils, pumps and controllers.	\$62,500		\$31,250
	Material Handling System for Parts Washers	Fair	\$406,250	Includes move cost. Replace bearings and drive unit components.	\$250,000		\$156,250
	Containment Trench for Parts Washers		\$37,500		\$0		\$37,500
28	Induction Anneal (M)	Fair	\$18,750		\$18,750		\$0
29	Induction Anneal (F,P)	Fair	\$75,000		\$75,000		\$0
30	Chiller (2 each), Cooling Tower (3 each)	Good	\$87,500		\$87,500		\$0
31	Miscellaneous Small Machinery (Trimmers, Tappers, Beaders, Lathes)	Good	\$187,500		\$187,500		\$0
32	Production Gages and Tooling	Good	\$100,000		\$100,000		\$0
33	Gage and Met Lab Equipment	Good	\$100,000		\$100,000		\$0
34	Machine Shop and Maintenance Shop Equipment	Good	\$312,500		\$312,500		\$0
35	Critical Spare Parts Crib	Good	\$625,000		\$625,000		\$0
	Subtotal		\$42,068,125		\$13,674,375	\$16,812,500	\$11,581,250

Eq No.	Equipment	Condition	Relocate and Upgrade	Description of Estimate	RBAAP 1-Time Cost	RIA 1-Time New Eq	RIA 1-Time Cost
36	Make Ready and Prove Out		\$10,000,000				\$10,000,000
	Subtotal		\$52,068,125		\$13,674,375	\$16,812,500	\$21,581,250
37	Engineering and Project Management		\$2,500,000				\$2,500,000
			\$54,568,125		\$13,674,375	\$16,812,500	\$24,081,250

Cost Assumptions:

Cost estimates have not been included for required major utility infrastructure and regulatory requirements at RIA
Equipment foundation estimates are based on soil conditions at RBAAP
Due to age and configuration of some equipment, special consideration is given to replacement instead of relocating
Material handling cost reflects the current method at RBAAP
Installation of equipment at RIA facility does not require structural modification to any buildings
The quantities of electrical power, natural gas and water currently available at RBAAP will be available at RIA
Cost estimates have not been included for protecting equipment and product from severe atmospheric conditions.
Cost estimates to treat industrial effluent at RIA is not included

COBRA Analysis Inputs:

1-Time cost associated with relocation of designated existing equipment from RBAAP to RIA is \$13,674K.
1-Time cost associated with acquisition of replacement equipment at RIA is \$16,813K. This pertains to equipment that cannot be relocated due to age, condition and/or structural limitation.
1-Time cost associated with retrofitting/refurbishing/upgrading relocated equipment and construction of pits, foundations and pads at RIA is \$11,581K.
1-Time cost associated with make ready and proveout at RIA is \$10,000K, evenly distributed over the years 2008 through 2011.
1-Time cost associated with refurbishing buildings at RIA is \$2,000K. This cost was included by DoD in its analysis.
1-Time cost associated with engineering and program management at RIA is \$2,500K, evenly distributed over the years 2006 through 2011.

RIVERBANK ARMY AMMUNITION PLANT

1. Since Riverbank AAP is the only industrial base facility capable of producing large caliber steel cartridge cases in support of ammunition for the 105mm Stryker, 5”54, 76mm, Navy Gun; and the R&D program for the 155mm Advanced Gun System for the Navy’s DD(X) program, what criteria were used to judge these capabilities as “excess”?
 - *The large caliber steel cartridge case capabilities were not judged as excess; subsequently the recommendation moves the capabilities (in their entirety) to Rock Island Arsenal. With Riverbank operating at a 5% utilization rate, the excess refers to the infrastructure.*
2. The justification indicates there are four sites in the Industrial Base actively producing metal parts. Please identify the sites and their specific capabilities in producing large caliber deep drawn steel cases.
 - *The four sites referenced are Mississippi, Riverbank, Scranton, and Louisiana. The analysis identified only Riverbank as having the capability to produce large caliber deep drawn steel cases.*
3. The deep drawn caliber cases are produced by a very unique process, based on technical know-how developed and perfected over 70 years by a California-based contractor. How does DOD plan to relocate this technical and intellectual property, i.e., know-how to Rock Island Arsenal?
 - *Rock Island Arsenal has a greater utilization rate (72% versus 5%), a higher military value, and assets that support the function (heat treat, annealing, metallurgy, etc). This recommendation provides a great opportunity to reduce infrastructure, improve processes, and acquire technical and intellectual skills through public private partnering.*
4. Where is the redundancy in the manufacture of deep drawn steel cartridge cases in the Industrial Base?
 - *There is no redundancy in the manufacturing of deep drawn steel cartridge cases. The justification statement that you are referring to is in reference to the entire metal parts function. There is redundancy in other metal parts commodities (i.e. metal parts for mortars, artillery).*
5. The justification cites the need “to remove excess from the Industrial Base.” How did DOD determine “excess” at Riverbank? How was Riverbank’s unique capacity to manufacture large caliber deep drawn steel/brass cartridge cases evaluated in determining facility utilization?
 - *The large caliber steel cartridge case capabilities were not judged as excess; subsequently the recommendation moves the capabilities (in their entirety) to Rock Island Arsenal. With Riverbank operating at a 5% utilization rate, the excess refers to the infrastructure. Riverbank’s unique capability to manufacture large caliber deep drawn steel/brass cartridge cases was considered to be a critical skill that must be retained within DoD.*

6. Please provide studies that were conducted or data collected from Riverbank and the year of this information, which were utilized in the economic analysis model?
 - Data was gathered by a Joint Cross Service Group during the BRAC process and used to develop the economic analysis model.
7. What studies were conducted or data collected to verify Rock Island's capabilities and know-how to manufacture the large caliber deep drawn cartridge cases? What was the year of these studies or data sources?
 - *As stated, the only site possessing the capability to manufacture deep drawn cartridge cases is Riverbank. BRAC analysis gathered data on capabilities and Rock Island's capabilities provide the following support system:*
 - *Heat treat capability*
 - *Forging capability*
 - *Annealing capability*
 - *Apprenticeship programs for machinists, electricians, molder/foundry/pattern maker, pipe fitters, tool and die making*
 - *Metal turning*
 - *Press Forming*
 - *Manufacturing skill sets*
 - *Similar workforce*
 - *Non-destructive testing*
 - *Full metal fabrication with press, laser, shear, welding, etc*
 - *Full engineering support with material test lab metallurgist and production support engineers*
 - *Buildings with the height clearance needed for presses.*
 - *Rock island Arsenal is a totally vertically integrated manufacturing facility that begins with raw material and ends with a finished product. In-house total manufacturing to include forgings, castings, weldments, and fabrications.*
8. What steps did DOD take to validate and certify the input data on both Riverbank and Rock Island relative to cartridge case manufacturing?
 - *Validation/certification by:*
 - *Installation Commander*
 - *MSC Commander*
 - *Military Department*
9. The justification cites that closure allows DOD to "generate efficiencies." Please provide specific data on each efficiency generated by closure.
 - *Closure of Mississippi (0% utilization rate) and Riverbank (5% utilization rate) and movement of the function to Rock Island (72% utilization rate), generates monetary efficiencies*
 - *Cost efficiencies generated from shared overhead*
 - *Reduction in sustainment cost (\$5.1 million per year)*
 - *Reduction in facility security and force protection cost*
 - *Reduction in cost of product to the customer*
10. The justification cites that closure allows DOD to "nurture partnership with multiple sources in the private sector". Please provide details for each of the private

sources DOD has identified for nurturing. Please indicate whether any of these private sources are capable of producing large caliber deep drawn steel cartridge cases.

- *There is no source for large caliber deep drawn steel cartridge cases in the private sector. Identification of a private source for nurturing would be premature and considered a violation of procurement laws. Sources will be identified through a competitive process.*

11. What assumptions were made to handle tenants currently leasing at the Riverbank facility to help the Army offset the facility maintenance costs?

- *There are 13 ARMS tenants at Riverbank and their leases will expire within the BRAC window (FY 2006- 2011). Tenants may either relocate or become tenants to the new land owner.*

12. Were the costs associated with terminating tenant leases at Riverbank considered? If not, what is the additional cost involved?

- *Costs associated with lease termination were considered. Since all leases expire within the BRAC window (FY 2006 -2011), there are no lease terminations or additional cost involved.*

13. Large caliber steel deep drawn cases and the grenade metal parts manufacturing requires a highly skilled design, technical, manufacturing, and engineering capabilities. Are these capabilities available at Rock Island? If not, what is DOD plans on acquiring these capabilities?

- *Large caliber steel deep drawn cartridge case capability does not exist at Rock Island. Rock Island Arsenal has a greater utilization rate (72% versus 5%), a higher military value, and assets that support the function (heat treat, annealing, metallurgy, etc). This recommendation provides a great opportunity to reduce infrastructure, improve processes, and acquire technical and intellectual skills through public private partnering.*

14. What are the current cost structure (such as overhead, G&A, materials, and direct and indirect labor) at Rock Island?

- *Rock Island's cost structure is competition sensitive and cannot not be provided.*

15. If Rock Island's cost structure cannot support competitive pricing for cartridge cases, how does DOD plan to meet ammunition requirements in a cost effective manner?

- *Rock Island can support competitive pricing.*

16. Riverbank is designated as a surge facility for M42 and M46 grenade metal parts and is the only plant known to have produced M77 grenade bodies. How was Riverbank's capacity to produce cargo grenade metal bodies evaluated in determining facility utilization? What is DOD plans to move this capability to Rock Island?

- *Based on requirements generated by the Military Departments, the production capacity for Cargo Grenade Metal Parts at Riverbank AAP cannot meet the departments' needs. Riverbank has laid-away capability (for M42/46/77) to produce about 0.9M cargo grenades per month (on a 1-8-5 basis). Mississippi has laid-away capability (for M42/46) to produce about 4M per month (on a 1-8-*

5 basis). Military Department requirements are 2.5-3.0M per month. DoD's plan is to relocate equipment from both Mississippi and Riverbank and establish one modern cargo grenade facility capable of meeting the requirements of the war-fighter. Cost to move, procure, and install the equipment are included in the Riverbank and Mississippi analysis. There is a technical challenge involved because Cargo Grenades metal parts have not been produced by either Mississippi or Riverbank in many years.

- 17. DOD has also recommended that the M42 and M46 grenade metal parts capability from Mississippi AAP be relocated to Rock Island. It is our understanding that Mississippi AAP does not currently have technical manpower knowledgeable in the manufacture of these grenade bodies, as exists at Riverbank; and that the installation cannot be easily inactivated. What are DOD's plans to establish this unique capability at Rock Island?**
- *The recommendation includes costs to relocate equipment and install equipment, procure new equipment, and refurbish an existing building at Rock Island. This recommendation provides a great opportunity to reduce infrastructure, improve processes, and acquire technical and intellectual skills through public private partnering.*
- 18. The recommendation noted that new construction is planned at Rock Island. Please indicate the purpose of the new construction, the type and the cost involved. Was this cost considered in the one time cost?**
- *This recommendation does not include new construction at Rock Island. The cost included in the BRAC analysis is for refurbishment of an existing building.*
- 19. What environmental infrastructure does Rock Island have to treat the discharge from the chemicals utilized in the manufacturing process?**
- *Rock Island Arsenal has Industrial Waste Treatment Plant (IWTP) capabilities to treat chemical waste before discharge to the City of Rock Island. This capability includes treatment associated with chrome and zinc plating. In addition, pre-treatment equipment will be moved from Riverbank to Rock Island and augmented with selected new equipment.*
- 20. Have the additional costs of the operating the new construction as well as the environmental treatment facility been considered in the BRAC evaluation?**
- *Yes.*
- 21. What constitutes the one time cost of \$25.2 million, and what are the assumptions made for each cost element?**
- *The \$25.2 million in one time costs are:*
 - *\$15,000K to skid, ship and install equipment*
 - *\$100K to shut off utilities*
 - *\$1,300K to perform an EIS at Riverbank*
 - *\$5,000K for new equipment*
 - *\$2,000K for building refurbishment*
 - *\$5K for training and TDY*
 - *\$1,150 for air conformity, new source review, and EIS at Rock Island*
 - *\$684K for shutdown of 707KSF*

- *The assumption is to include all costs related to relocation of cartridge case functions from Riverbank to Rock Island Arsenal. Costs include facilitization projects, equipment, training, cost avoidances (planned site improvements), environmental compliance, layaway, ammunition transportation, IT projects, contract termination, movement of non-vehicle mission equipment, and movement of support equipment.*

22. Have the costs of relocating the following equipment considered in the one time cost?

- **Relocation and installation of 17 presses, 6 machining centers, tempering, annealing, zinc plating facilities, and heat treatment facilities.**
 - *Yes*
- **Proper design of the foundation and pits for heavy machinery such as presses and machining centers.**
 - *Yes*
- **Metrology, chemical, and metallurgical laboratories.**
 - *Yes*

23. In justifying relocation of the cartridge case metal parts capability to Rock Island, did DOD take into account the following factors?

- **Over \$13 million would be required to procure two major pieces of equipment: an anneal furnace, although currently utilized in production, the furnace is 50 years old and would not be expected to survive the move; an additional 5,000 ton press – because of limited press technical know-how, Rock Island would not likely be able to take advantage of utilizing the lower tonnage press at Riverbank to produce the 155mm advanced Gun System cases.**
 - *Yes (used our estimate)*
- **Additional \$9 million would be needed to replace the zinc plating and thermal treatment facilities which are not likely to survive the move.**
 - *Yes (used our estimate)*
- **Were these additional costs in excess of \$20 million considered in the payback calculation?**
 - *No. Used our estimates in the payback calculation*

24. Has the cost of training personnel been accounted for in the one time cost? If not, what is the additional cost?

- *Yes*

25. Has the cost of prove-out been accounted for in the one time cost? If not, what is the additional cost?

- *No. Prove-out cost is not and should not be included in the one time cost.*

26. What is the estimated timetable for closure to removal/replacement to installation, training, and prove-out?

- *Fiscal Year 2009.*

27. Is the one time cost of \$25.2 million included in the calculation of the net cost of \$10.4 million after certain savings are projected?

- *Yes*

28. What are the assumptions made at arriving at a recurring savings of \$6.5 million? Please provide a breakdown of each area of savings?
- *Recurring savings of \$6.5 million are based on no longer having to pay sustainment, BOS, and Civilian salaries.*
29. What is the payback year for DOD's investment in closing Riverbank and relocating the cartridge case line at Rock Island and making it fully operational at a cost competitive level? How does this correlate with the 3-year payback period cited in the report?
- *The payback is 3 years (same as the report).*
30. What is the interest rate used in the payback calculations? What is the basis of this rate? What are the sunk costs considered?
- *The COBRA uses a discount rate (not an interest rate) as outlined in OMB Circular A-94, Appendix C. Appendix C provides the 10-year and 30-year rate. To get the 20 year rate used by COBRA, the guidance is to take an average of the 10 and 30 year rate. Based on the March 2005 circular, the rate is 2.8%. There is no sunk cost in the payback calculations.*
31. Please provide a breakdown of the \$2.5 million for environmental compliance activities and specify by the elements of environmental compliance including, for example, permitting, air, water, and sewer monitoring, equipment, etc. What was the source for this data?
- *The \$2.5 million for environmental compliance:*
 - *At Rock Island \$1.150M: \$50K for Air Conformity Analysis; \$100K for New Source Review Analysis and permitting; \$1M Environmental Impact Statement (EIS)*
 - *At Riverbank \$1.3M for Environmental Baseline Study (EBS)*
 - *Source of data: Army Environmental subject matter experts and standard environmental cost factors.*
32. Since Rock Island is a Title V Stationary Source, did the evaluation include costs for whatever Best Available Control Technology and/or emission offsets may be required? If Rock Island discharges pretreated industrial wastewater to the City of Rock Island, was the impact on the City's POTW evaluated? If additional pretreatment units are required to meet discharge limitation, were these costs included?
- *Yes*

FINAL COMMENTS:

This recommendation fits within the definition of BRAC (to gain efficiencies while reducing excess infrastructure) and does not place the war-fighter in jeopardy. The bulk of metal parts used to support to the current conflict is manufactured by Scranton AAP and Private Industry.

- *Deep drawn cartridge cases support ammunition for 105MM Stryker, 5"54 Navy Gun Ammo, 76MM Navy Gun Ammo and the R&D program for the 155MM Advanced Gun System for the Navy's DD(X) program. For the immediate*

conflict, the 5"54 Navy Gun Ammo and 76MM Navy Gun Ammo are specialty items of relative low volume. The 105MM for the Stryker is still in the decisional phase with only small training requirements out through the 2011. The 155MM Advanced Gun System for the Navy is in the R&D phase. For all of the aforementioned rounds, sufficient rounds can be stockpiled to make it through the transition. .

- *For the immediate conflict, current requirements for Cargo Grenade Metal parts are low, but future requirements push production capacity beyond the capability that exists at Riverbank (0.9 million per month (1-8-5 basis) to 2.5 million to 3.0 million per month (1-8-5 basis). To support future needs of Cargo Grenade Metal Parts for the war-fighter, we need the capacity at both Riverbank AAP and Mississippi AAP.*

The recommendation does not abandon the deep drawn cartridge case capability within the organic base. It relocates the capability with other metal working capabilities and processes to gain efficiencies and effectiveness.

Delgado, George, CIV, WSO-BRAC

From: Van Saun, David, CIV, WSO-BRAC
Sent: Friday, June 17, 2005 2:10 PM
To: Delgado, George, CIV, WSO-BRAC; Cook, Robert, CIV, WSO-BRAC; Dinsick, Robert, CIV, WSO-BRAC
Cc: Buzzell, Ashley, CIV, WSO-BRAC
Subject: Fw: Community Meeting Confirmation

Gary - I can take this one. Do you have anyone who can sit in with me?

-----Original Message-----

From: Cooper, Rory, CIV, WSO-BRAC <Rory.Cooper@wso.whs.mil>
To: Van Saun, David, CIV, WSO-BRAC <David.VanSaun@wso.whs.mil>
CC: Buzzell, Ashley, CIV, WSO-BRAC <Ashley.Buzzell@wso.whs.mil>
Sent: Fri Jun 17 11:27:13 2005
Subject: Community Meeting Confirmation

WHO: Riverbank Group - John Maniatakis with NI, contractor for Riverbank, Phil Lighty with Congressman Radanovich, and then either Eve O'Toole or Dan Maldonado, DC consultants for Riverbank.

WHEN: June 22, 2:00 pm

WHERE: Conference Room B

WHAT: Discuss contractor positions and value of installation

CALENDAR: Marked on BRAC Calendar

Thanks,
Rory

7.2 Military Value Assessment

Military Value analysis, as described in Section 6.6, provided a starting point for developing potential BRAC actions.

7.2.1 Military Value of Installations (MVI)

The MVI model ranked Army installations from 1-to-97, based on an analysis of 40 attributes across all installations. The MVI ranking was the first product of the MVA. The MVI results are listed below.

First Quartile			Second Quartile				
1	Ft Bliss	14	Ft Campbell	26	Ft Jackson	38	Ft Belvoir
2	Ft Lewis	15	Ft Drum	27	McAlester AAP	39	Letterkenny AD
3	Ft Hood	16	Ft Polk	28	Ft Rucker	40	Red River AD
4	Ft Stewart / HAAF	17	Ft Irwin	29	Ft Richardson	41	Sierra AD
5	Ft Bragg	18	Aberdeen PG	30	Redstone Arsenal	42	Tooele AD
6	Yuma PG	19	Ft Sill	31	Hawthorne AD	43	Ft Sam Houston
7	Ft Carson	20	Schofield Barracks	32	Crane AAP	44	Deseret Chem Depot
8	Dugway PG	21	Ft Huachuca	33	Ft Eustis	45	Bluegrass AD
9	Ft Benning	22	Ft AP Hill	34	Ft Gordon	46	Walter Reed AMC
10	White Sands MR	23	Ft Dix	35	Ft Leonard Wood	47	Picatiny Arsenal
11	Ft Wainwright	24	Ft McCoy	36	Ft Lee	48	Watervliet Arsenal
12	Ft Knox	25	Anniston AD	37	Tobyhanna AD	49	Ft Meade
13	Ft Riley					50	Ft Monmouth

Table 7-1. MVI Ranking, 1st and 2nd Quartiles

Third Quartile			Fourth Quartile				
51	Ft McPherson	64	Pine Bluff Arsenal	76	Lima Tank Plant	89	Riverbank AAP
52	Ft Gillem	65	Ft McNair	77	Corpus Christi AD	90	Lease - Bailey's Crossroads
53	Rock Island Arsenal	66	Ft Myer	78	Scranton AAP	91	Lease - ARO
54	MOT Sunny Point	67	Kansas AAP	79	USAG Michigan	92	Lease - Crystal City Complex
55	Pueblo Chem Depot	68	Ft Monroe	80	Radford AAP	93	Lease - Hoffman Complex
56	Ft Detrick	69	Lake City AAP	81	Ft Shafter	94	Lease - ARPERCEN
57	Soldier System Center	70	Iowa AAP	82	Ft Buchanan	95	Lease - PEO STRICOM
58	Charles E. Kelly Support	71	Lone Star AAP	83	Holston AAP	96	Lease - Army JAG Agency
59	Milan AAP	72	Adelphi Labs	84	Presidio Of Monterey	97	Lease - Army JAG School
60	Mississippi AAP	73	Ft Hamilton	85	Umatilla Chem Depot		
61	West Point	74	Detroit Arsenal	86	Lease - HQ, ATEC		
62	Ft Leavenworth	75	Carlisle Barracks	87	Tripler AMC		
63	Newport Chem Depot			88	Lease - Rosslyn Complex		

Table 7-2. MVI Ranking, 3rd and 4th Quartiles

DEPARTMENT OF THE ARMY—BRAC 2005—ANALYSES AND RECOMMENDATIONS

Installation	Rank	Open Score	Var	Cost Score	Rank	Open Score	Var	Cost Score	Rank	Logistics Score	Rank	Cost Score	Rank	WY Score
Walter Reed AMC	46	2.33	81	0.31	48	2.60	35	3.93	73	0.14	9	6.94	29	4.91
Picatiny Arsenal	47	2.33	50	0.49	21	4.34	79	1.62	50	0.44	15	6.66	16	5.18
Watervliet Arsenal	48	2.25	79	0.33	63	1.96	25	4.69	53	0.33	28	6.13	43	4.11
Ft Meade	49	2.25	78	0.34	38	3.28	51	2.34	67	0.15	17	6.55	2	6.27
Ft Monmouth	49	2.25	62	0.36	58	2.20	36	3.93	48	0.53	11	6.88	46	3.80
Ft McPherson	51	2.22	83	0.30	82	0.97	22	5.10	81	0.14	12	6.75	28	4.92
Ft Gillem	52	2.20	62	0.30	83	0.92	23	5.01	61	0.18	20	6.37	13	5.32
Rock Island Arsenal	53	2.14	59	0.37	73	1.38	29	4.41	37	1.00	19	6.50	72	2.67
MOT Sunny Point	54	2.09	69	0.36	51	2.46	24	4.74	81	0.14	60	5.07	90	2.25
Pueblo Chem Depot	55	2.03	36	1.02	37	3.54	54	2.24	49	0.48	74	4.46	91	2.21
Ft Detrick	56	1.98	69	0.36	62	1.98	58	2.12	59	0.22	4	7.42	18	5.16
Soldier Systems Center	57	1.96	66	0.36	79	1.18	43	3.09	76	0.14	8	7.00	19	5.16
Charles Kelley	58	1.93	69	0.36	84	0.86	41	3.34	73	0.14	43	5.61	1	6.64
Milan AAP	59	1.92	54	0.40	55	2.36	53	2.27	15	1.86	48	5.52	93	1.87
Mississippi AAP	60	1.91	69	0.36	44	2.96	49	2.39	55	0.30	24	6.28	79	2.46
West Point	61	1.88	38	0.93	43	3.09	78	1.67	69	0.15	75	4.42	49	3.73
Ft Leavenworth	62	1.85	60	0.37	47	2.60	82	1.55	66	0.15	47	5.54	5	5.78
Newport Chem Depot	63	1.85	51	0.46	22	4.34	91	1.09	83	0.14	55	5.16	75	2.66
Pine Buff Arsenal	64	1.84	46	0.67	64	1.86	75	1.79	11	1.98	22	6.32	97	0.91
Ft Mc Nair	65	1.83	52	0.44	56	2.27	63	1.98	83	0.14	33	5.87	38	4.52
Ft Myer	66	1.81	62	0.36	59	2.12	65	1.98	76	0.14	31	5.89	27	5.00
Kansas AAP	67	1.80	45	0.68	54	2.38	97	0.74	23	1.46	36	5.81	60	3.28
Ft Monroe	68	1.79	62	0.36	70	1.57	50	2.36	73	0.14	45	5.57	10	5.48
Lake City AAP	69	1.78	66	0.36	46	2.70	93	0.91	46	0.58	51	5.37	11	5.45
Iowa AAP	70	1.78	44	0.68	45	2.73	94	0.88	20	1.66	79	4.18	55	3.37
Lone Star AAP	71	1.73	69	0.36	42	3.18	95	0.86	22	1.48	67	4.77	73	2.67
Adelphi Labs	72	1.71	56	0.37	69	1.74	60	2.00	60	0.22	44	5.59	36	4.62
Ft Hamilton	73	1.69	85	0.27	53	2.40	66	1.92	83	0.14	80	4.16	15	5.30
Detroit Arsenal	74	1.63	61	0.36	75	1.35	87	1.32	71	0.14	10	6.92	31	4.79
Carlisle	75	1.62	55	0.38	71	1.53	80	1.57	76	0.14	40	5.70	21	5.05
Lima Tank Plant	76	1.60	84	0.30	72	1.42	62	1.99	36	1.07	61	5.07	61	3.23
Corpus Christi ADA	77	1.59	62	0.36	85	0.65	90	1.18	10	2.09	25	6.26	65	3.02
Scranton AAP	78	1.55	80	0.33	68	1.75	81	1.56	51	0.41	72	4.53	35	4.63
USAG Michigan	79	1.51	69	0.36	78	1.20	89	1.28	83	0.14	29	6.04	31	4.79
Radford AAP	80	1.51	86	0.24	52	2.41	92	1.02	40	0.85	64	4.97	71	2.75
Ft Shafter	81	1.48	58	0.37	74	1.35	55	2.18	76	0.14	65	4.91	62	3.22
Ft Buchanan	82	1.47	66	0.36	89	0.32	56	2.17	69	0.15	76	4.35	3	6.23
Holston AAP	83	1.44	77	0.34	67	1.78	95	0.86	56	0.28	58	5.08	40	4.37
Presidio Of Monterey	84	1.35	56	0.37	77	1.22	52	2.33	71	0.14	81	4.11	81	2.43
Umatilla Chem Depot	85	1.31	48	0.62	66	1.78	88	1.32	76	0.14	84	3.85	88	2.27
Tripler AMC	87	1.26	69	0.36	86	0.58	58	2.12	83	0.14	77	4.34	66	2.97
Riverbank AAP	89	1.18	87	0.18	76	1.30	86	1.48	51	0.41	62	5.06	96	1.13
Lease - HQ, ATEC	86	1.27	87	0.18	87	0.58	68	1.91	88	0.00	82	4.04	22	5.02
Lease - Rosslyn Complex	88	1.20	87	0.18	88	0.48	68	1.91	88	0.00	87	3.46	22	5.02
Lease - Bailey's Crossroads	90	1.16	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	7	5.74
Lease - Army Research Office	91	1.15	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	9	5.53
Lease - Crystal City Complex	92	1.11	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	22	5.02
Lease - Hoffman complex	92	1.11	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	22	5.02
Lease - ARPERCEN	94	1.06	87	0.18	91	0.00	83	1.49	88	0.00	95	3.22	6	5.75
Lease - PEO STRICOM	95	1.01	87	0.18	90	0.29	83	1.49	88	0.00	87	3.46	45	4.02
Lease - Army JAG Agency	96	0.94	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	69	2.83
Lease - Army JAG School	97	0.91	87	0.18	91	0.00	83	1.49	88	0.00	85	3.80	63	3.07

7.2 Military Value Assessment

Military Value analysis, as described in Section 6.6, provided a starting point for developing potential BRAC actions.

7.2.1 Military Value of Installations (MVI)

The MVI model ranked Army installations from 1-to-97, based on an analysis of 40 attributes across all installations. The MVI ranking was the first product of the MVA. The MVI results are listed below.

First Quartile			Second Quartile				
1	Ft Bliss	14	Ft Campbell	26	Ft Jackson	38	Ft Belvoir
2	Ft Lewis	15	Ft Drum	27	McAlester AAP	39	Letterkenny AD
3	Ft Hood	16	Ft Polk	28	Ft Rucker	40	Red River AD
4	Ft Stewart / HAAF	17	Ft Irwin	29	Ft Richardson	41	Sierra AD
5	Ft Bragg	18	Aberdeen PG	30	Redstone Arsenal	42	Tooele AD
6	Yuma PG	19	Ft Sill	31	Hawthorne AD	43	Ft Sam Houston
7	Ft Carson	20	Schofield Barracks	32	Crane AAP	44	Deseret Chem Depot
8	Dugway PG	21	Ft Huachuca	33	Ft Eustis	45	Bluegrass AD
9	Ft Benning	22	Ft AP Hill	34	Ft Gordon	46	Walter Reed AMC
10	White Sands MR	23	Ft Dix	35	Ft Leonard Wood	47	Picatinny Arsenal
11	Ft Wainwright	24	Ft McCoy	36	Ft Lee	48	Watervliet Arsenal
12	Ft Knox	25	Anniston AD	37	Tobyhanna AD	49	Ft Meade
13	Ft Riley					50	Ft Monmouth

Table 7-1. MVI Ranking, 1st and 2nd Quartiles

Third Quartile			Fourth Quartile				
51	Ft McPherson	64	Pine Bluff Arsenal	76	Lima Tank Plant	89	Riverbank AAP
52	Ft Gillem	65	Ft McNair	77	Corpus Christi AD	90	Lease - Bailey's Crossroads
53	Rock Island Arsenal	66	Ft Myer	78	Scranton AAP	91	Lease - ARO
54	MOT Sunny Point	67	Kansas AAP	79	USAG Michigan	92	Lease - Crystal City Complex
55	Pueblo Chem Depot	68	Ft Monroe	80	Radford AAP	93	Lease - Hoffman Complex
56	Ft Detrick	69	Lake City AAP	81	Ft Shafter	94	Lease - ARPERGEN
57	Soldier System Center	70	Iowa AAP	82	Ft Buchanan	95	Lease - PEO STRICOM
58	Charles E. Kelly Support	71	Lone Star AAP	83	Holston AAP	96	Lease - Army JAG Agency
59	Milan AAP	72	Adelphi Labs	84	Presidio Of Monterey	97	Lease - Army JAG School
60	Mississippi AAP	73	Ft Hamilton	85	Umatilla Chem Depot		
61	West Point	74	Detroit Arsenal	86	Lease - HQ, ATEC		
62	Ft Leavenworth	75	Carlisle Barracks	87	Tripler AMC		
63	Newport Chem Depot			88	Lease - Rosslyn Complex		

Table 7-2. MVI Ranking, 3rd and 4th Quartiles

DEPARTMENT OF THE ARMY—BRAC 2005—ANALYSES AND RECOMMENDATIONS

Installation	Rank	Overall Score	Rank	Health Score	Rank	Future Score	Rank	AF Score	Rank	DDMIS Score	Rank	Cost Score	Rank	WB Score
Walter Reed AMC	46	2.33	81	0.31	48	2.60	35	3.93	73	0.14	9	6.94	29	4.91
Picatiny Arsenal	47	2.33	50	0.49	21	4.34	79	1.62	50	0.44	15	6.66	16	5.18
Watervliet Arsenal	48	2.25	79	0.33	63	1.96	25	4.69	53	0.33	28	6.13	43	4.11
Ft Meade	49	2.25	78	0.34	38	3.28	51	2.34	67	0.15	17	6.55	2	6.27
Ft Monmouth	49	2.25	62	0.36	58	2.20	36	3.93	48	0.53	11	6.88	46	3.80
Ft McPherson	51	2.22	83	0.30	82	0.97	22	5.10	81	0.14	12	6.75	28	4.92
Ft Gillem	52	2.20	82	0.30	83	0.92	23	5.01	61	0.18	20	6.37	13	5.32
Rock Island Arsenal	53	2.14	59	0.37	73	1.38	29	4.41	37	1.00	19	6.50	72	2.67
MOT Sunny Point	54	2.09	69	0.36	51	2.46	24	4.74	81	0.14	60	5.07	90	2.25
Pueblo Chem Depot	55	2.03	36	1.02	37	3.54	54	2.24	49	0.48	74	4.46	91	2.21
Ft Detrick	56	1.98	69	0.36	62	1.98	58	2.12	59	0.22	4	7.42	18	5.16
Soldier Systems Center	57	1.96	66	0.36	79	1.18	43	3.09	76	0.14	8	7.00	19	5.16
Charles Kelley	58	1.93	69	0.36	84	0.86	41	3.34	73	0.14	43	5.61	1	6.64
Milan AAP	59	1.92	54	0.40	55	2.36	53	2.27	15	1.86	48	5.52	93	1.87
Mississippi AAP	60	1.91	69	0.36	44	2.96	49	2.39	55	0.30	24	6.28	79	2.46
West Point	61	1.88	38	0.93	43	3.09	78	1.67	69	0.15	75	4.42	49	3.73
Ft Leavenworth	62	1.85	60	0.37	47	2.60	82	1.55	66	0.15	47	5.54	5	5.78
Newport Chem Depot	63	1.85	51	0.46	22	4.34	91	1.09	83	0.14	55	5.16	75	2.66
Pine Buff Arsenal	64	1.84	46	0.67	64	1.86	75	1.79	11	1.98	22	6.32	97	0.91
Ft Mc Nair	65	1.83	52	0.44	56	2.27	63	1.98	83	0.14	33	5.87	38	4.52
Ft Myer	66	1.81	62	0.36	59	2.12	65	1.98	76	0.14	31	5.89	27	5.00
Kansas AAP	67	1.80	45	0.68	54	2.38	97	0.74	23	1.46	36	5.81	60	3.28
Ft Monroe	68	1.79	62	0.36	70	1.57	50	2.36	73	0.14	45	5.57	10	5.48
Lake City AAP	69	1.78	66	0.36	46	2.70	93	0.91	46	0.58	51	5.37	11	5.45
Iowa AAP	70	1.78	44	0.68	45	2.73	94	0.88	20	1.66	79	4.18	55	3.37
Lone Star AAP	71	1.73	69	0.36	42	3.18	95	0.86	22	1.48	67	4.77	73	2.67
Adelphi Labs	72	1.71	56	0.37	69	1.74	60	2.00	60	0.22	44	5.59	36	4.62
Ft Hamilton	73	1.69	85	0.27	53	2.40	66	1.92	83	0.14	80	4.16	15	5.30
Detroit Arsenal	74	1.63	61	0.36	75	1.35	87	1.32	71	0.14	10	6.92	31	4.79
Carlisle	75	1.62	55	0.38	71	1.53	80	1.57	76	0.14	40	5.70	21	5.05
Lima Tank Plant	76	1.60	84	0.30	72	1.42	62	1.99	36	1.07	61	5.07	61	3.23
Corpus Christi ADA	77	1.59	62	0.36	85	0.65	90	1.18	10	2.09	25	6.26	65	3.02
Scranton AAP	78	1.55	80	0.33	68	1.75	81	1.56	51	0.41	72	4.53	35	4.63
USAG Michigan	79	1.51	69	0.36	78	1.20	89	1.28	83	0.14	29	6.04	31	4.79
Radford AAP	80	1.51	86	0.24	52	2.41	92	1.02	40	0.85	64	4.97	71	2.75
Ft Shafter	81	1.48	58	0.37	74	1.35	55	2.18	76	0.14	65	4.91	62	3.22
Ft Buchanan	82	1.47	66	0.36	89	0.32	56	2.17	69	0.15	76	4.35	3	6.23
Holston AAP	83	1.44	77	0.34	67	1.78	95	0.86	56	0.28	58	5.08	40	4.37
Presidio Of Monterey	84	1.35	56	0.37	77	1.22	52	2.33	71	0.14	81	4.11	81	2.43
Umatilla Chem Depot	85	1.31	48	0.62	66	1.78	88	1.32	76	0.14	84	3.85	88	2.27
Tripler AMC	87	1.26	69	0.36	86	0.58	58	2.12	83	0.14	77	4.34	66	2.97
Riverbank AAP	89	1.18	87	0.18	76	1.30	86	1.48	51	0.41	62	5.06	96	1.13
Lease - HQ, ATEC	86	1.27	87	0.18	87	0.58	68	1.91	88	0.00	82	4.04	22	5.02
Lease - Rosslyn Complex	88	1.20	87	0.18	88	0.48	68	1.91	88	0.00	87	3.46	22	5.02
Lease - Bailey's Crossroads	90	1.16	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	7	5.74
Lease - Army Research Office	91	1.15	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	9	5.53
Lease - Crystal City Complex	92	1.11	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	22	5.02
Lease - Hoffman complex	92	1.11	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	22	5.02
Lease - ARPERCEN	94	1.06	87	0.18	91	0.00	83	1.49	88	0.00	95	3.22	6	5.75
Lease - PEO STRICOM	95	1.01	87	0.18	90	0.29	83	1.49	88	0.00	87	3.46	45	4.02
Lease - Army JAG Agency	96	0.94	87	0.18	91	0.00	68	1.91	88	0.00	87	3.46	69	2.83
Lease - Army JAG School	97	0.91	87	0.18	91	0.00	83	1.49	88	0.00	85	3.80	63	3.07

BRAC Commission

Briefing on

**Riverbank Army Ammunition Plant
Riverbank, CA**

**Operated by
NI Industries, Inc.**

**Presented by Winnie T. Wu,
General Manager - NI Industries, Inc.**

Tel: 209.869.7215

22 June 2005



Executive Summary

- ❖ NI offers the following points for consideration to retain Riverbank AAP in the Military Value Portfolio (MVP) as the only government industrial base facility with unique capabilities to manufacture:
 - **Deep drawn, large caliber cartridge cases**
105mm Stryker Vehicle, 76mm and 5"54 Navy Guns, and the 155mm Advanced Gun System (AGS) for the Navy's DD(X) Program
 - **M42, M46 and M77 cargo grenade bodies**
Only facility to have successfully made the M77
 - **High fragmentation 60mm/81mm mortars**
Developed the process and produced a limited quantity



Executive Summary...cont'd

- ❖ NI is concerned with the DoD recommendation to relocate the cartridge case manufacturing facility from Riverbank AAP to Rock Island Arsenal
 - Limited available stockpile of large caliber cartridge cases
Serious considerations must be given since a move of this magnitude would require a total shut down of production
 - One-time relocation cost estimates
May not be all encompassing and the recurring savings projected optimistic

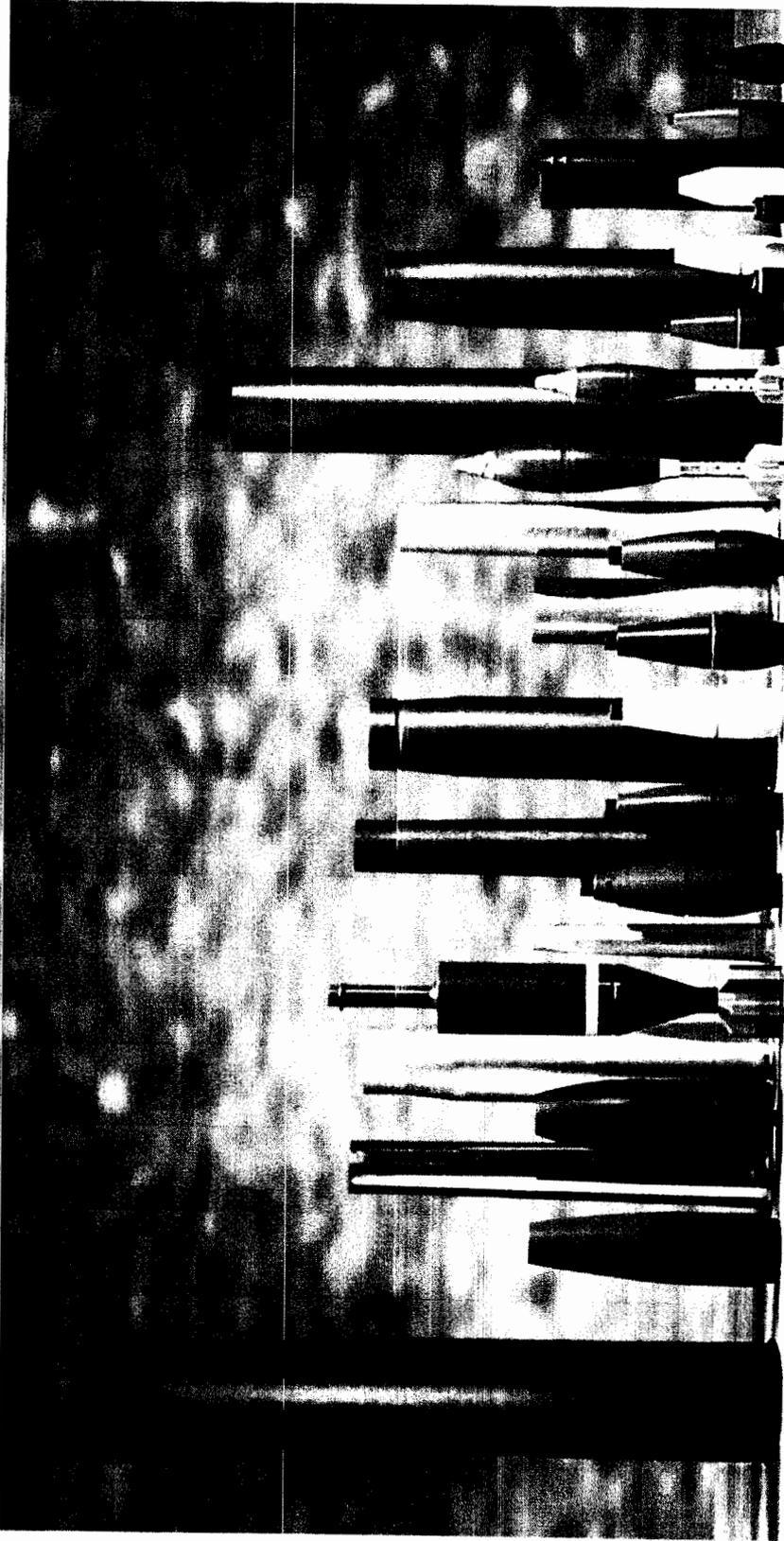


NI Industries, Inc.

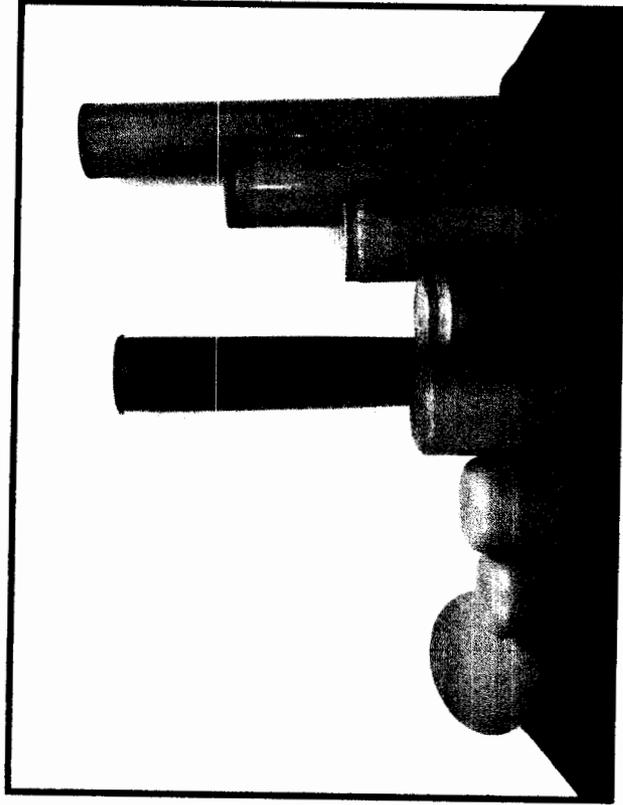
- ❖ Established in 1930 with the first military contract in 1938
- ❖ Successfully developed deep drawn steel cartridge case in 1943
- ❖ Operating Contractor for Riverbank AAP since 1951
- ❖ Pioneer in development of steel cartridge cases to replace brass casing during WWII due to copper shortage and developed manufacturing methods and technology for high fragmentation mortar/projectile and grenade bodies
- ❖ Extensive manufacturing experience in deep drawing and extruding alloyed metals for cartridge cases, projectiles, mortars, bombs, grenade bodies, Multiple Launch Rocket System (MLRS) and Light Antitank Weapon (LAW) System
- ❖ Experienced producer of a variety of large caliber cartridge cases for all joint military services
- ❖ ISO 9001 and ISO 14001 certified



**Sample of NI Product Portfolio
At Riverbank AAP**



Unique Capability For Deep Draw Technology



**Largest deep drawn steel
cartridge case (155mm) for
Navy's Advanced Gun System**

Deep draw technology

- A complex process
- A series of precise, consecutive press operations
- High quality, one-piece, variable wall case
- Final internal and external configuration
- Meeting the needs of mating components for end items required by the customer



Core Capabilities

Knowledge, Skills, and Abilities

- ❖ Years of proven experience in developing deep draw technology
- ❖ Technical expertise for the manufacture of the cartridge case requires years to develop
 - Combined technical and skilled manufacturing workforce - a vital component
 - Tooling design capability - key to applying the deep draw technology to the manufacture of a press formed cartridge case
 - In-depth knowledge and unparalleled experience in thermal treatments - optimize manufacturability for consistent quality
 - Thorough understanding of machining - achieve the complex final machined configuration and surfaces
 - Application of proper zinc plating surfaces - to meet exacting customer specifications



Summary of Key Concerns with DoD BRAC Recommendation

- ❖ Military Value/Judgment
- ❖ Ammunition for Force Structure
- ❖ COBRA Analysis
 - Estimate of one-time costs related to relocating a full-service manufacturing facility
 - Projected recurring savings



Military Value/Judgment

Unique Capabilities in Deep Draw Technology

- ❖ A sophisticated technology that requires a highly skilled and technologically competent work force
- ❖ To support Navy's DD (X), NI "fast tracked" successful development of the largest deep drawn steel cartridge case with significant reduction in cost and time
 - Used in-house technical capabilities and existing manufacturing processes and modeling
 - Expanded the established flexible cartridge case facility to accommodate the 155mm requirements
- ❖ NI also supplies 105mm steel tank cartridge cases for the Stryker Vehicle in support of the Future Combat System
- ❖ Riverbank AAP records demonstrated high quality, timely delivery of cartridge cases to the Joint Armed Services



Ammunition for Force Structure

Potential Interruption of Cartridge Case Supply

DoD proposes to move the equipment from Riverbank and install the equipment at Rock Island by 2011. Timeline concerns include:

- ❖ Need for meticulous attention to PM including engineering and detailed planning to identify critical path to successfully relocate the Riverbank facility and prove out a new cartridge case facility
- ❖ Careful planning to balance the length of the transition period with sufficient stockpile requirements

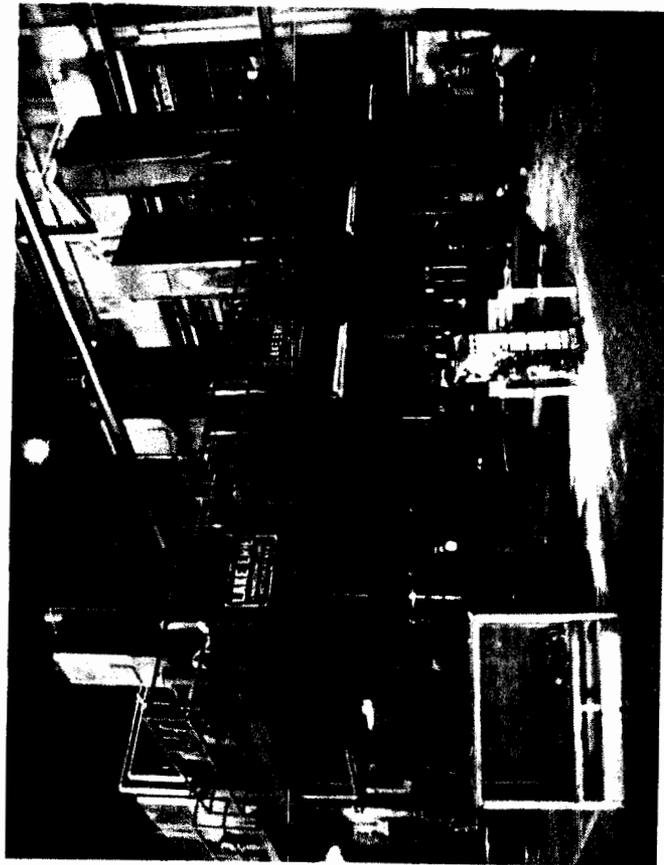


Cartridge Case Facility Relocation Concerns

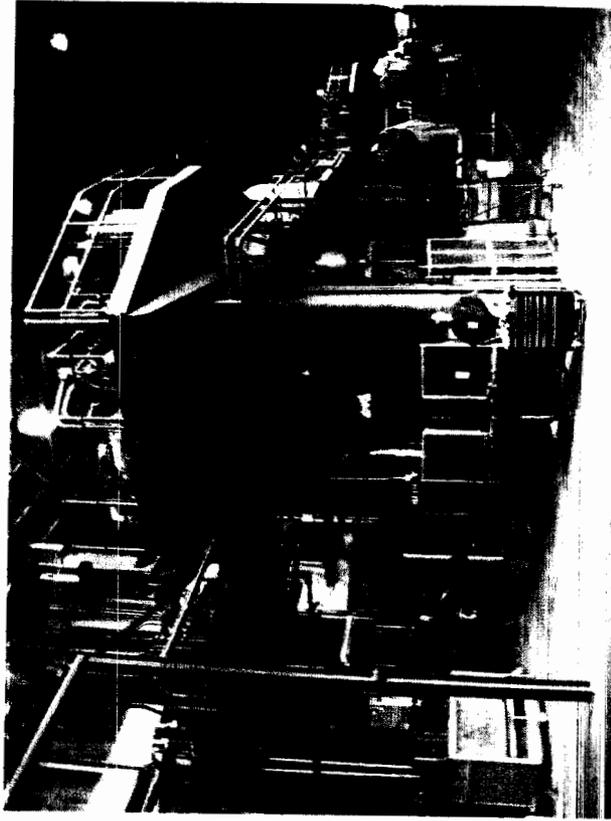
- Has DoD considered the following move costs?
- 17 presses
 - 6 machining centers
 - Zinc plating facility
 - Thermal treatment facilities (aged annealing furnace might not survive the move)
 - Design and construction of foundations for presses and other heavy machinery
 - Metrology, chemical, and metallurgical labs
 - Large caliber deep draw tooling and gages
 - Industrial waste treatment facility suitable for metal parts manufacturing



Hydraulic Presses



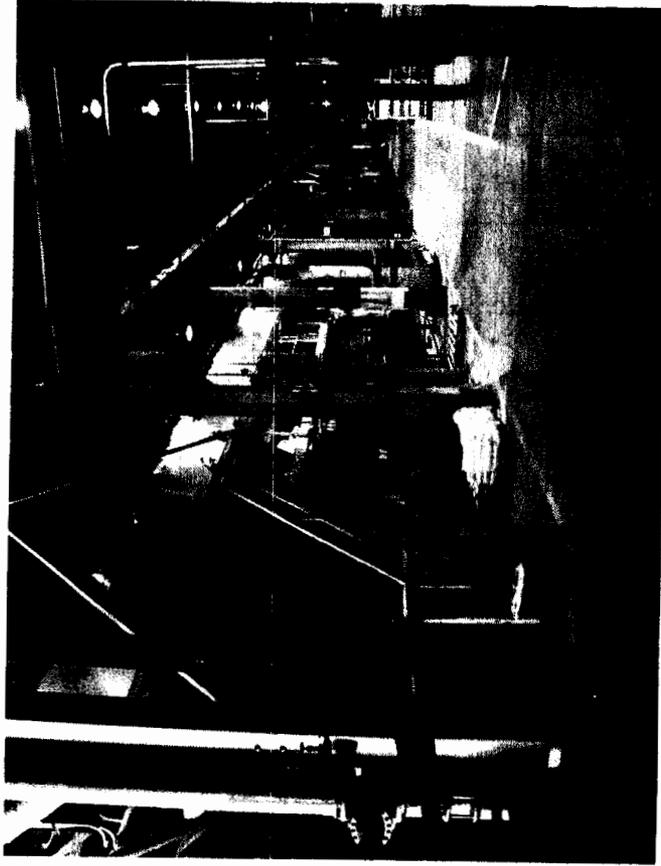
125-300T Presses



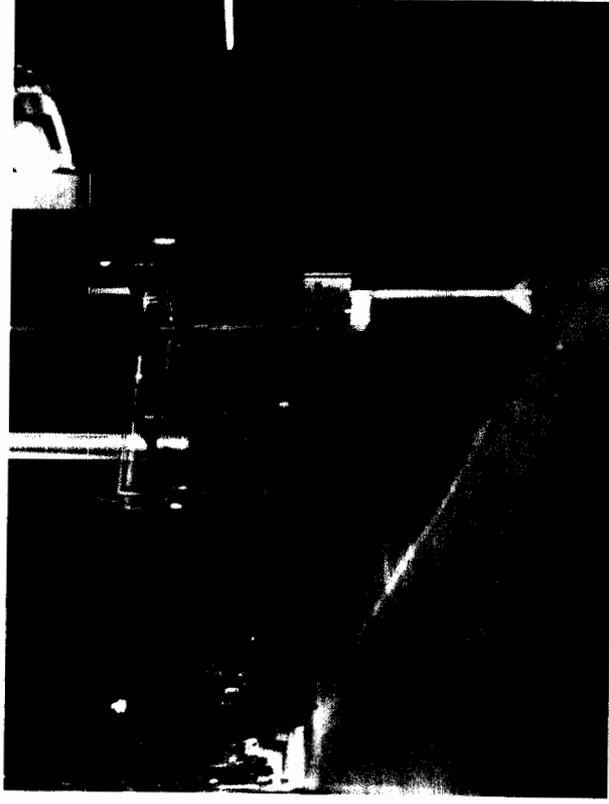
4500T Press



Thermal Treatment Equipment



Heat Treat System



Annealing Furnace



Machining Centers/Zinc Plater



Machining Centers



Zinc Plating System



COBRA Analysis - Costs

Concerns for Cost Estimates in COBRA Model

- ❖ One-time cost of \$25.2M: It is likely that cost can exceed \$60M when the project is complete
- ❖ \$5M for acquisition of new equipment: This budget may not be sufficient to cover even the acquisition of a 5,000T press and a thermal treatment system
- ❖ Prove-out cost: It will be necessary to prove out the new line to ensure that the facility is capable of meeting manufacturing and quality requirements
- ❖ \$5,000 for training and travel: may not be adequate to support the move
- ❖ Industrial Waste Treatment Facility: proper permits to handle effluents from the metal parts manufacturing



COBRA Analysis - Savings

- Concerns with Savings Stated in the COBRA Model**
- ❖ Recapitalization of \$2.6M:
 - A total Plant Replacement Value of \$272M over a “recap rate” of 103 years was assumed for an annual cost avoidance to start in FY2006.
 - It is not likely that this level of revenue can be achieved starting FY2006
 - ❖ Overhead savings of \$5.5M:
 - Elimination of the “sustainment cost” assumed at \$4.3M to maintain a 173-acre facility.
 - Avoidance of another \$1.2M recurring cost from Base Operation Support.
 - ❖ Payback of three (3) years after 2011:
 - An optimistic conclusion



Summary

❖ **Military Value:**

- Unique technology and extensive experience to support the cartridge case requirements by the Joint Armed Forces, including the 155mm cartridge case for Navy's DD(X) Program and Army's Stryker Vehicle for the Future Combat System
- Remaining as the customer's premier manufacturer for the cartridge case, cargo grenades, and other metal components

❖ **Relocation of an Integrated Cartridge Case Facility**

- Requires careful planning and engineering to ensure that the cartridge case supply will not be adversely interrupted

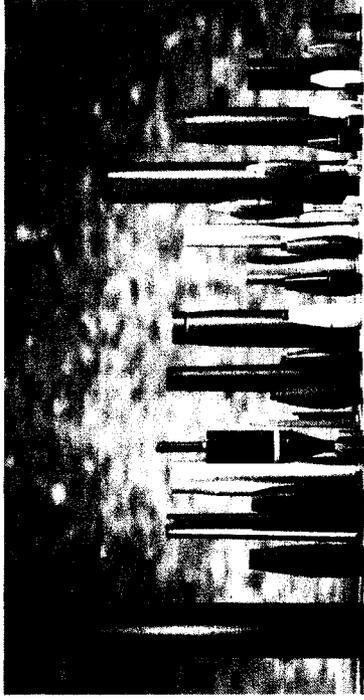
❖ **Investment Payback**

- Optimistic estimates



Riverbank Army Ammunition Plant

- ❖ Premier manufacturer of munitions metal parts in support of the U. S. Joint Armed Forces as well as foreign military allied forces



Metal Parts Portfolio



5" gun on board a U.S. Navy ship



Riverbank Plant

- ❖ Located in Riverbank, CA on 170 acres with approx. 800,000 square feet under roof
- ❖ Integrated facility – Engineering, Production, Maintenance, Industrial Waste Treatment Plant; Chemical, Metallurgical, Metrology Labs, Machine Shop/Tool Room
- ❖ Flexible cartridge case production facility
- ❖ Laid away cargo grenade facility for M42/M46 and M77 (The only producer for M77)
- ❖ Experienced and skilled workforce
- ❖ ISO 9001 and ISO 14001 certified



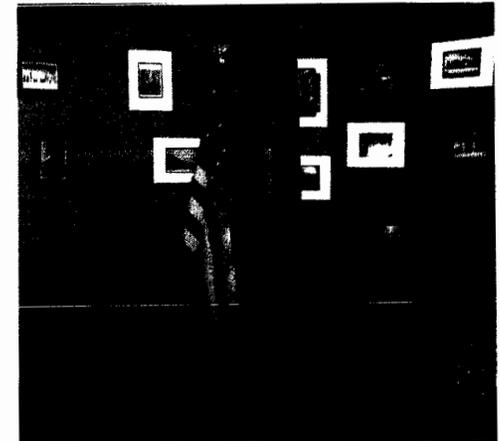
Development Programs

Navy

Extended Range Guided Munitions (ERGM)

DD(X) Advanced Gun Systems:

- ❖ Under contract with General Dynamics, NI developed a manufacturing process for the deep drawn 155mm cartridge case
 - ❖ Largest steel cartridge case ever produced
 - ❖ NI engineers with their technical expertise worked with the customer to reach optimal cartridge case design to reduce extraction force at firing
 - ❖ Currently in Production Qualification & Testing Phase
- ❖ Length: 42 inches
 - ❖ Weight: 35 lb.
 - ❖ Firing range - 100 nautical miles inland
 - ❖ 12 round per minute

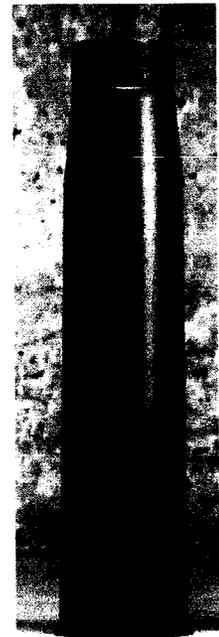


Development Programs

Army

105mm Steel Tank Cartridge Cases for Stryker Vehicle For the Future Combat System

- ❖ Two types of cases in production: Wall Buster for L3/Mecar and Canister for Alliant Techsystems (ATK)
- ❖ Only deep drawn steel cartridge cases have met autoloader handling requirements
- ❖ Ongoing annual requirements approx. 20K
- ❖ Over 40K produced to date



Production Programs For Joint Services

Army

105mm Steel Cartridge Cases:

- ❖ Cartridge cases produced for 105mm Howitzer Round
 - Over 10K produced since 2001
 - Over 35 million cases produced during the Vietnam Conflict
- ❖ Cartridge cases produced for 105mm Tank Round
 - In addition to the Stryker Program, Riverbank is qualified to manufacture other 105mm tank round cartridge cases



Production Programs For Joint Services

Air Force

105mm Brass Cartridge Cases:

- ❖ Cases produced for Air Force AC-130 Gunship
- ❖ Over 29K delivered since 2003



Production Programs For Joint Services

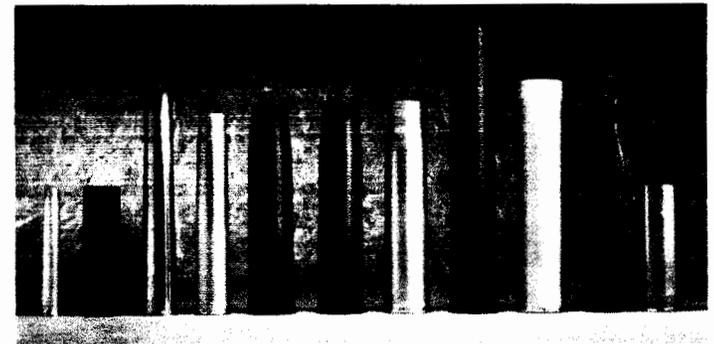
U.S. Navy

76mm Steel Cartridge Cases:

- ❖ Currently on contract to produce 5,700 cases; production scheduled in July 2005
- ❖ Over 75K delivered since 2001
- ❖ Positioned to support future obligations of foreign partners

5"54 Steel Cartridge Cases:

- ❖ Contract for approx. 24K anticipated
- ❖ Over 50K delivered since 2003



Production & Development Programs At Riverbank AAP

Summary:

- ❖ Commitment to customer satisfaction and timely delivery
 - No Quality Deficiency Reports received since returning to production in 2001
- ❖ Capability and capacity for both steel and brass cartridge cases, 60mm/81mm mortars, and M42/M46/M77 cargo grenades
- ❖ Facility rated for 100 cases per hour or approx. 15k cases on a 1-8-5 basis can be increased to meet the Force Structure Plan and surge capabilities

