ARMY ACQUISITION POLLUTION PREVENTION SUPPORT OFFICE

George H. Terrell
HQ AMC; Army Acquisition Pollution Prevention Support Office
AMC HAZMIN PROGRAM
FUTURE DIRECTION

POST 1992 GOALS

- ZERO IMPACT ON ENVIRONMENT
- 20% DISPOSAL REDUCTION BY 1995 - 1992 BASE
- 20% DISPOSAL REDUCTION BY 1999 - 1995 BASE
- 25% GENERATIONS REDUCTION BY 2000 - 1992 BASE
ENVIRONMENTAL COMPLIANCE THROUGH SMART ACQUISITION PRACTICES
MOTIVATION FOR OBEYING ENVIRONMENTAL REGS

MORALITY. MORALITY DICTATES THAT ALL ENVIRONMENTAL LAWS SHOULD BE OBEYED BECAUSE "IT IS THE RIGHT THING TO DO." THE IMPROPER DISCHARGE OF HAZARDOUS WASTE IS HARMFUL TO THE ENVIRONMENT. THEREFORE, IT IS IMMORAL TO MAKE SUCH DISCHARGES. IF EVERYONE OBEYED THE MORAL "LAW," THE OTHER TWO MOTIVATIONS WOULD BE UNNECESSARY.

PUNISHMENT. PUNISHMENT FOR VIOLATING ENVIRONMENTAL REGULATIONS IS IN THE FORM OF PRISON TERMS (YES, PRISON TERMS) AND FINES. THE MOTIVATION HERE IS TO "OBEY THE REGS OR RISK BEING CAUGHT AND PUNISHED."

LIABILITY. THIS COULD BE THE GREATEST MOTIVATION IN TODAY'S LIABILITY-CONSCIOUS SOCIETY. COMPANIES (AND INDIVIDUALS) DISOBEYING ENVIRONMENTAL REGULATIONS CAN BE SUED BY INDIVIDUALS ADVERSELY AFFECTED. SUCH LAWSUITS CAN AWARD ENORMOUS MONETARY JUDGEMENTS AND CAN FORCE A COMPANY INTO BANKRUPTCY. THE ONLY SURE WAY TO AVOID ENVIRONMENTAL LIABILITY LAWSUITS IS TO OBEY EVERY ENVIRONMENTAL REGULATION.

"END OF PIPE APPROACH" — LIMITED SUCCESS

NEED TO INTERVENE UPSTREAM

ASA(I&L) ACTION MEMORANDUM (28 SEP 88)
FAILURE TO:

EVALUATE AND ELIMINATE ENVIRONMENTAL HAZARDS DURING SYSTEM DEVELOPMENT AND ACQUISITION

SNAP-SHOT OF PROBLEM

<table>
<thead>
<tr>
<th>GOAL</th>
<th>ENVIRONMENTAL STEWARDSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>MISSION</td>
<td>POLLUTION CONTROL</td>
</tr>
<tr>
<td>ORIENTATION</td>
<td>POLLUTION PREVENTION</td>
</tr>
<tr>
<td>FOCUS</td>
<td>FACILITIES OPN'S</td>
</tr>
<tr>
<td></td>
<td>WEAPON SYS ACQ</td>
</tr>
<tr>
<td>FOCUS</td>
<td>RESTORATION &amp; WASTE STREAMS</td>
</tr>
<tr>
<td></td>
<td>ACCEPTABLE MAT'LS &amp; PROCESSES</td>
</tr>
<tr>
<td>FUNCTIONS</td>
<td>SITE CLEAN-UP</td>
</tr>
<tr>
<td></td>
<td>INFLUENCE DESIGN</td>
</tr>
<tr>
<td></td>
<td>TREAT/DISPOSE WASTES</td>
</tr>
<tr>
<td></td>
<td>INFLUENCE MFG</td>
</tr>
<tr>
<td>EXAMPLES</td>
<td>&quot;MOVE DIRT&quot;</td>
</tr>
<tr>
<td></td>
<td>Cd/Cr ALTERNATIVES</td>
</tr>
<tr>
<td></td>
<td>HI TEMP INCINERATION</td>
</tr>
<tr>
<td></td>
<td>OZONE DEPLEATER</td>
</tr>
<tr>
<td></td>
<td>BIO-REMEDIATION</td>
</tr>
<tr>
<td></td>
<td>ALTERNATIVES</td>
</tr>
<tr>
<td></td>
<td>LOW VOC COATINGS</td>
</tr>
</tbody>
</table>
SNAP-SHOT OF PROBLEM
(SERVICE SPECIFIC)

GOAL

SERVICE SPECIFIC

ENVIRONMENTAL STEWARDSHIP

(MISSION)

(POLLUTION CONTROL)

(POLLUTION PREVENTION)

GENERATORS

ARMY INSTALLATIONS

ARMY CONTRACTORS

PROPOSENT (POLICY)

SAILE

? SARDA ?

STAFF (GUIDANCE)

CHIEF OF ENGINEERS

? AMC ?

(AD-HOC TEAM)

RESPONSIBLE AGENT

IMPLEMENT

FACILITY CDRS

PEO/PM

ON-SITE EXPERT

(IMPLEMENT)

DOER

DEH

? MSC ?

COMPLIANCE (POLICY)

CHIEF OF ENGINEERS

? SARDA ?

WHAT IS POLLUTION PREVENTION?

• PRO-ACTIVE
• BEGINNING-OF-PIPE
• PROCESS OR MATERIAL CHANGE
• MITIGATES IMPACT ON POLLUTION CONTROL

WHAT IT ISN'T!

• RE-ACTIVE
• END-OF-PIPE
• CLEAN-UP/REMEDICATION/REUTILIZATION
• POLLUTION CONTROL
POLLUTION PREVENTION DRIVERS

- REQUIREMENT FOR DAB/ASARC
- COST
  - ORDER OF MAGNITUDE SAVINGS
- COLLATERAL LIABILITY
  - LEGAL PRECEDENCE
  - PUNITIVE EXAMPLES
  - NEW LAWS
- ENVIRONMENTAL STEWARDSHIP

POLLUTION PREVENTION CUSTOMERS

- ARMY MATERIEL DEVELOPERS
  - PEO’S
  - MSC’S/PM’S, ETC.
- COCO’S
- ARMY FACILITY COMMANDERS
  - ARSENALS
  - DEPOTS
  - TEST RANGES, ETC.
- GOCO’S
ENVIRONMENTAL COMPLIANCE THROUGH SMART ACQUISITION PRACTICES
ARMY’S GOAL

- INSTITUTIONALIZE ENVIRONMENTAL AWARENESS/ACTIONS IN ARMY SYSTEMS ACQUISITION LIFE CYCLE

OBJECTIVES

- INFLUENCE/DEVELOP
  - ACQUISITION REGULATIONS/POLICIES/PAMPHLETS
  - PROGRAM ACQUISITION STRATEGIES AND MASTER PLANS
  - DETAILED PROGRAM DOCUMENTS/PROCEDURES
  - CONTRACTOR SELECTION DOCUMENTS/PROCEDURES

SOLUTION METHODOLOGY

- DEVELOP STRAWMAN POLICIES/PROCUREMENT/PLANS

- TEST/VERIFY THE PROPOSED SOLUTIONS

- INSTITUTIONALIZE THE SOLUTIONS

- DON’T WAIT — START NOW
INDUSTRIAL PRECEDENTS

- GM/SATURN – MATERIAL ASSESSMENT PROCEDURES
- GM/FREDERICKSBURG – FLUIDS MANAGEMENT
- BOEING – MATERIALS & PROCESS ASSESSMENT PROCEDURES

RESOURCE - SUPPORT

- SECRETARIAT/ARSTAFF
  (OFFICE OF)
  - MR. WALKER, DASA (I&L)(E)
  - MG OFFRINGA, ACE/AEO
  - MR. SINGLEY, DASA (R&D)
  - BG SCOTTI, OTSG

- MACOM
  - CORPS OF ENGINEERS
  - ARMY MATERIEL COMMAND
  - HEALTH SERVICES COMMAND

- PEO
  - ARMORED SYSTEMS MODERNIZATION
RESOURCE - PEOPLE

- AMC
- HQ STAFF
- IEA
- PBMA
- MTL
- MSC
- COE
- USATHAMA
- OTSG
- AEHA
- ARMY SAFETY CENTER

EXPERTS IN:
- SYSTEM ACQUISITION
- MATERIAL SELECTION
- MANUFACTURING PROCESS
- TRAINING
- ENVIRONMENT
- HEALTH
- MEDICAL
- SAFETY

RESOURCE - FUNDING

- PRODUCIBILITY ENGINEERING & PLANNING (PEP) (PROGRAM LINE ITEM)
- DEFENSE ENVIRONMENTAL RESTORATION ACCOUNT (DERA) (R&D) (DA LINE ITEM)
- MANUFACTURING TECHNOLOGY (MANTECH) (DA LINE ITEM)
POLICY

DOCUMENT |
--- |
ACQUISITION MGMT |
HAZMAT PREVENTION |
ACQ STRATEGY & MASTER PLANS |
TEST & EVAL MASTER PLAN |
PRODUCTION READINESS MASTER PLAN |
ILS MASTER PLAN |
ACQUISITION PLAN |
ENVIRONMENTAL ASSESSMENT LIFE CYCLE ENVIRONMENTAL DOCUMENT (LCED) |

SOURCE DOCUMENT |
--- |
DODD 5000.1 |
DODD 4210.15 |
AR 70-1 |
DODD 5000.3 |
DODD 5000.3-M-1 |
AR 70-72 |
AMC-P 70-2 |
AR 70-1 |
AR 200-2 |

DESCRIPTION |
--- |
PROG MGMT PROCEDURES |
HAZMAT PROCEDURES |
PROG'S OVERALL ROADMAP |
PROG'S TEST & EVAL ROADMAP |
PROG'S PRODUCTION READINESS ROADMAP |
PROG'S ILS ROADMAP |
PROG'S ACQ/CONTRACT ROADMAP |
DETAILED ID OF MAT'L & PROCESSES |

PROGRAM DOCUMENTATION HIERARCHY
## TOTAL TEAM SCHEDULE

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>0</th>
<th>6</th>
<th>12</th>
<th>18</th>
<th>24</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASELINE CHANGES (SARDA STUDY)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4/1/90</td>
<td></td>
</tr>
<tr>
<td>PILOT PGM I (HFM)</td>
<td>3/16/90</td>
<td></td>
<td></td>
<td></td>
<td>3/16/91</td>
<td></td>
</tr>
<tr>
<td>PILOT PGM II (LHX, AAWS-M, AMMO?)</td>
<td></td>
<td></td>
<td></td>
<td>4/1/91</td>
<td>10/16/91</td>
<td></td>
</tr>
<tr>
<td>VALIDATE CHANGES</td>
<td></td>
<td></td>
<td></td>
<td>10/16/90</td>
<td>10/16/91</td>
<td></td>
</tr>
<tr>
<td>INSTITUTIONALIZE</td>
<td></td>
<td></td>
<td></td>
<td>10/16/91</td>
<td>3/16/92</td>
<td></td>
</tr>
<tr>
<td>DISSOLVE TEAM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4/16/92</td>
<td></td>
</tr>
</tbody>
</table>

## MEASURES OF SUCCESS

- **TONNAGE OF HW**
- **NOTICE OF VIOLATION**
- **ENGINEERING CHANGE PROPOSALS**
- **COST SAVINGS/AVOIDANCE (DESIGN PLUS HANDLING/TREATING/DISPOSING)**
- **POLICY/GUIDANCE/PROCEDURES**
ENVIRONMENTALLY ACCEPTABLE MATERIAL TREATMENT PROCESSES

A MANUFACTURING TECHNOLOGY (MANTECH) THRUST FOR THE '90s

JACK HURD
THRUST MANAGER
HQ AMC, AMCCE-BD

CARMEN DIGIANDOMENICO
DIVISION CHIEF
HQ AMC, AMCCE-BD

PHONE: AV284-0815
COMM(703 274-0815)

ISSUES

- COMPOUND APPLICATIONS IN VIOLATION OF CURRENT OR PROJECTED RESTRICTIONS, ARE CURRENTLY SEEN ON ARMY PRODUCTION LINES FOR:
  - CLEANING AGENTS
  - SURFACE PREPARATIONS
  - COATINGS
  - SURFACE TREATMENT

- COMPOUND/COATING DEVELOPERS DO NOT DEVELOP NOR VALIDATE ATTENDANT MANUFACTURING PROCESSES

- NO CURRENT FOCUSED EFFORT WITHIN ARMY TO ADDRESS THESE MANUFACTURING PROCESSES
OBJECTIVE

- DEVELOP A COMPREHENSIVE PROGRAM TO ENSURE THE TECHNOLOGICALLY COMPLETE AND TIMELY VALIDATION OF MANUFACTURING PROCESSES FOR ENVIRONMENTALLY ACCEPTABLE COMPOUNDS
- AVOID POSSIBLE CLOSURE OF MANUFACTURING FACILITIES BY EPA DUE TO USE OF VOC
- MITIGATE PERSONNEL HAZARDS ASSOCIATED WITH ENVIRONMENTALLY UNACCEPTABLE MANUFACTURING METHODS/PROCESSES
- REDUCE/ELIMINATE SPECIAL HANDLING REQUIREMENTS FOR HAZARDOUS WASTE ATTENDANT WITH MANUFACTURING METHODS/PROCESSES

IMPACT

- LATEST COMPOUND TECHNOLOGY WILL HAVE CONCURRENT MANUFACTURING PROCESS/METHOD DEVELOPMENT/VALIDATION
- MODERNIZATION OF ARMY PRODUCTION FACILITIES WILL BENEFIT FROM PROCESS DATA/INFORMATION DEVELOPED
- DA/DOD WILL BE COMPLIANT WITH CURRENT/FUTURE ENVIRONMENTAL LAWS AND REGULATIONS
- UNINTERRUPTED DOD AND DEFENSE CONTRACTOR PRODUCTION LINES
JUSTIFICATION

- INTERNATIONAL ENVIRONMENTAL IMPLICATIONS — E.G., OZONE DEPLETION, TOXIC WASTE, ACID RAIN, ETC.

- INTERNATIONAL PROCESSES/METHODS WILL BE INCLUDED

- BROAD NATIONAL INVOLVEMENT ACROSS INDUSTRY & FEDERAL/STATE/LOCAL GOVERNMENTS (DOT, DOD, EPA, DEPT OF COMMERCE)

ENVIRONMENTAL MANTech "CORE TEAM"
PROJECTS

- VALIDATE MANUFACTURING PROCESSES/METHODS OF KNOWN ENVIRONMENTALLY COMPLIANT COMPOUNDS
- CONCURRENT DEVELOPMENT OF THESE PROCESSES/METHODS AND CONTROLS FOR NEWLY DEVELOPED COMPLIANT COMPOUNDS
- ESTABLISH MINI-FACTORY FOR GENERATING DATA
- PROVIDE "REAL-TIME" DATA/INFORMATION TO BOTH ARMY FACILITIES MODERNIZATION AND WEAPON SYSTEM PROGRAMS
- EVALUATE AFFECTS OF CRITICAL PROCESS PARAMETERS ON OPERATIONAL PERFORMANCE

EAMTP ONGOING PROJECTS

- PERFORMANCE EVALUATION OF CADMIUM PLATING ALTERNATIVES
- ELIMINATION OF CHROMIC ACID RINSE FOR PHOSPHATING
- ION IMPLANTATION AS AN ALTERNATIVE FOR CADMIUM/CHROME PLATING
- ALTERNATIVES FOR CFCs (FREON) FOR METAL PARTS AND ELECTRONICS CLEANING
PROJECTS

COORDINATED PROJECTS

- ALUMINUM ION VAPOR DEPOSITION AS AN ALTERNATIVE TO CD/CR
- EXTENSION OF CHROMIC ACID SOLUTION BATH LIFE BY ELECTRODIALYSIS
- FILTRATION OF PAINT STRIPPING BATH TO INCREASE LIFE OF SOLUTION
- EVALUATION OF PLASTIC BEAD MEDIA BLASTING
- EVALUATION OF PAINT APPLICATION PROCESSES
- ALTERNATIVES FOR CHEMICAL STRIPPING
- EVALUATION OF CO₂ PELLET STRIPPING
- FLUIDIZED PAINT STRIPPING/CLEANING

INTRODUCING THE...

NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE
NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE

SPONSOR: DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR THE ENVIRONMENT

MISSION: TO TRANSITION ENVIRONMENTALLY ACCEPTABLE MATERIALS AND PROCESSES TO INDUSTRY. TO PROVIDE TRAINING SUPPORTING USE OF NEW ENVIRONMENTALLY ACCEPTABLE TECHNOLOGIES AND TO PERFORM RESEARCH AND DEVELOPMENT WHERE APPROPRIATE TO ACCELERATE TRANSITIONING NEW TECHNOLOGIES.

STAFF: • INDUSTRIAL ENGINEERS
       • ENVIRONMENTAL ENGINEERS
       • TRAINERS
       • SUPPORT
       • MATERIALS ENGINEERS
       • INDUSTRIAL HYGIENISTS
       • SCIENTISTS
       • MANAGEMENT

NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE

THRUST AREAS

- EXPORT ENVIRONMENTALLY ACCEPTABLE MATERIALS AND PROCESSES TO INDUSTRY

- TRAIN ALL LEVELS OF THE WORK FORCE ON PROACTIVE APPROACHES AND SOLUTIONS

- PERFORM RESEARCH AND DEVELOPMENT WHERE NEEDED TO SOLVE PROBLEMS
NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE

MANAGEMENT RELATIONSHIPS

- UNIVERSITY OF PITTSBURGH TRUST
- NATIONAL DEFENSE ENVIRONMENTAL CORPORATION
- NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE
- SENIOR ADVISORY BOARD
- JOINT ENVIRONMENTAL AND MANUFACTURING TECHNOLOGY POLICY COUNCIL

CONTRACTOR
GOVERNMENT & INDUSTRY
GOVERNMENT

NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE

MANAGEMENT RESPONSIBILITIES

- UNIVERSITY OF PITTSBURGH TRUST:
  - COORDINATION WITH OTHER TRUST SUBSIDIARIES
  - CONDUIT TO ACADEMIC RESOURCES
  - COMMON CORPORATE RESOURCES
NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE

MANAGEMENT RESPONSIBILITIES

NATIONAL DEFENSE ENVIRONMENTAL CORPORATION -
- UNIQUE CORPORATE RESOURCES
- DIRECT SUPERVISION OF THE CENTER’S TECHNICAL DIRECTOR
- CONTRACTUAL ORGANIZATION
- NETWORK TO INDUSTRY

NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE

NDCEE PROVIDES -
- DAY TO DAY OPERATION
- EXECUTES TECHNICAL WORK
- FACILITIES - "BRICK AND MORTAR"
  • PRACTICAL TECHNOLOGY DEMONSTRATION
  • TRAINING AND EXPERT SERVICES
  • EXPORTS TECHNOLOGY TO THE SHOP FLOOR

PR-32
NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE

PROJECT GENERATION

PROJECTS WILL BE GENERATED BY THREE SOURCES -

- IDENTIFIED IN THE FIVE YEAR PLAN
  - CORE EFFORTS - $15M

- IDENTIFIED BY THE EXECUTIVE ADVISORY COUNCIL AS INDUSTRY RELATED PROBLEMS
  - DIRECT INDUSTRY FUNDING

- IDENTIFIED BY INDIVIDUAL SERVICES, AGENCIES OR OUTSIDE FEDERAL SOURCES
  - ADDITIONAL $35M CEILING LIMIT

NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE

INITIAL NDCEE TASKS

CONGRESSIONALLY MANDATED -

- ORGANIZE A FULLY FUNCTIONING, NOT-FOR-PROFIT NDCEE PROGRAM OFFICE WITH APPROVED MANAGERIAL, TECHNICAL, ADMINISTRATIVE AND FINANCIAL SYSTEMS IN PLACE

- DEVELOP A DETAILED TECHNICAL, MANAGEMENT AND BUDGETARY PLAN FOR THE FULL FIVE YEAR NDCEE PROGRAM

- SOLICIT CANDIDATE ORGANIZATIONS FOR THE INDIVIDUAL TECHNOLOGY BASED NDCEE'S REQUIRED BY DOD FOR THE FULLY OPERATING PROGRAM

PR-33
INITIAL NDCEE TASKS

POLICY COUNCIL APPROVED TASK ORDERS -
- EVALUATION OF NON-CHROMATE CONVERSION COATING
- ZERO DISCHARGE POWDER COATING
- CADMIUM PLATING SUBSTITUTE
- ELECTROLESS NICKEL PLATING
- CHROME PLATING SUBSTITUTE
- ELECTRODEPOSITED COATING SYSTEM
- NON-HALOGENATED SYSTEMS FOR CLEANING
- ION BEAM PROCESSING

NATIONAL DEFENSE CENTER FOR ENVIRONMENTAL EXCELLENCE (NDCEE)

$5M $5M - $15M EACH YEAR

ACTION IS REQUIRED TO ASSURE CONTINUED FUNDING OF NDCEE. CONTRACT AWARD HAS HIGHEST PRIORITY.

BUSINESS STRATEGY:
- NEAR TERM ACTIVATE LOW RISK SOLUTIONS
  FORMULATE FIVE YEAR PLAN
- LONG TERM EXECUTE FIVE YEAR PLAN
  DEVELOP MATURE PARTNERSHIPS WITH STATE GOVERNMENTS, ACADEMIA AND INDUSTRY
  SPONSOR TRANSITION OF TECHNOLOGY FOR COMPETITIVE INDUSTRIAL GROWTH
ENVIRONMENTAL EFFORT

SURPRISES
THE CENTER OF TECHNICAL EXCELLENCE (CTX)

Diane Michaels
U.S. Army System Command (DESCOM)