

**DEPLETED URANIUM WASTE HOLDING BASIN**

**William Stank  
&  
Joseph Parker**

**Armaments Research Development and Engineering Center**

**JOHN R. JURY  
Consulting Executive to  
Nuclear Metals, Inc.**

**November 22, 1994**

11/21/94 1

~~NMI PROPRIETARY~~

1-45

TO CFR 2.100

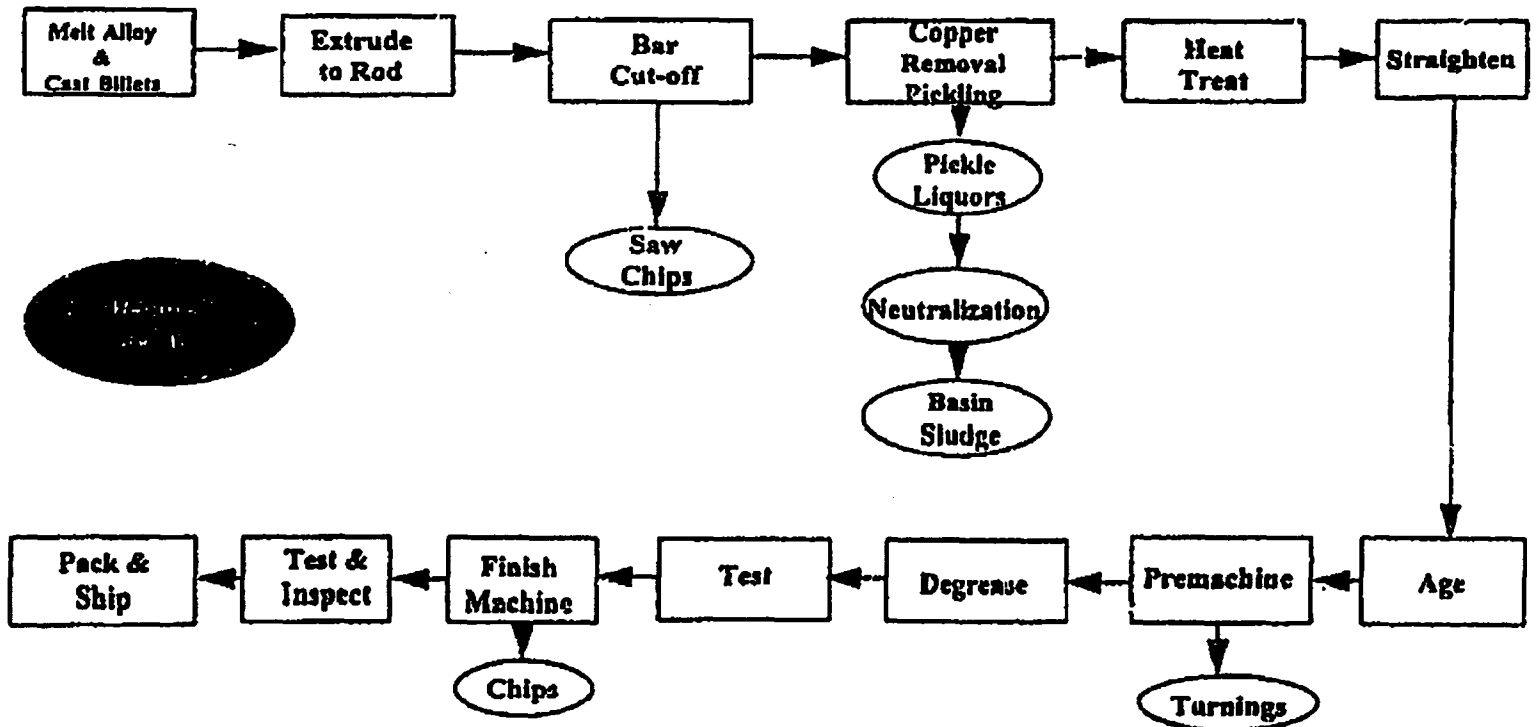
## PURPOSE

- NMI is seeking clear direction on disposition of residual government owned material at its Concord, Massachusetts facility
- Material is in a Dehydrated Salt form in a covered holding basin
  - 350,000 Pounds of Depleted Uranium (DU)
  - 700,000 Pounds of Copper
- Residual material worth approximately [\$1.3M]

## FACTS BEARING ON THE PROBLEM

- Holding basin created in 1958
- Legally licensed and permitted holding basin for neutralized acid waste (primarily DU residue from pickling operations through late 1985)
- Pickling operations removed copper jacket from DU extrusions
- Pickle liquors are 10% of all DU scrap
- Liquors neutralized with lime, to precipitate uranium and copper as hydrated oxides and hydroxides
- All depleted uranium for penetrators was Government furnished material
- 96% of basin contents directly attributed to US Government DU penetrator programs

# TANK PENETRATOR PROCESS FLOW



## **FACTS BEARING ON THE PROBLEM CONTINUED**

- **DU Penetrator Process controlled by Government approval**
- **NMI has always maintained that holding basin contents are GFM**
- **Government has never taken exception to the NMI GFM position**
- **Government has not issued directions for disposal, nor accepted NMI proposals.**
- **NMI has not submitted claims for basin clean-up on any contract**
- **One contract (production and facilities) remains open from era in which holding basin was used**

TO CFR 2.760 PROPRIETARY

## FACTS BEARING ON THE PROBLEM CONTINUED

- Federal, State, and local regulatory agencies require prompt removal of holding basin contents
- Contents pose no immediate threat to the environment
- Records have been maintained on holding basin contents in strict compliance with Government requirements
- Removal approaches available:
  - NMI burial at commercial landfill.....[\$20.0M]
  - Chemical separation and recovery.....[\$11.4M]  
(net of recovery value)
  - Direct burial at Utah site (Army cost).....[\$ 5.0M]
    - Removal and Packaging ( NMI proposal) .....[\$3.0M]

TO CFR 2.760 PROPRIETARY

## **FACTS BEARING ON THE PROBLEM CONTINUED**

### **ASA(RDA) letter of June 6, 1994**

- **Contains inaccurate statements, e.g.:**
  - NMI previously given opportunity to recoup clean-up costs as overhead
  - NMI declined this offer in order to gain larger contract share
  - NMI asking for lump-sum payment
  - Funding NMI would be unfair to AOT
- **Provides opportunity to charge clean-up costs as overhead in upcoming proposals**
  - This gives AOT unfair competitive advantage
  - Not feasible for NMI- No recoupment unless NMI wins NEW contract
  - Would require all NMI customers to share in clean-up cost
- **Implicitly recognizes Government has liability**

## **ACTIONS TAKEN BY NMI TO PROTECT GOVERNMENT-FURNISHED MATERIAL (GFM)**

- Kept records of all GFM usage including by-product generation
- Kept records of basin contents
- Provided physical security
- Covered basin with hypalon to prevent leaching from rain and snow
- Installed test wells to monitor ground water
- Performed extensive ground water and air monitoring



## **ACTIONS TAKEN BY NMI TO REDUCE OR DISPOSE OF PICKLING LIQUORS**

- Developed machining process to remove copper jacket from GAU-3 and PHALANX penetrators
- Developed recovery process to separate copper and uranium compounds into recyclable metals and commercial-classification landfill
- Qualified basin contents for bulk disposal

## **NMI INVESTMENTS TO MINIMIZE AND PROTECT THE DU SCRAP IN THE HOLDING BASIN**

- **\$8M<sup>+</sup> invested by NMI in:**
  - **Alternate technologies:**
    - **Machining vs pickling**
    - **Closed-loop pickling**
    - **Process to recycle basin scrap**
  - **Protection of Holding Basin's contents:**
    - **Hypalon covers**
    - **Wells**
    - **Monitoring**
- **Use of basin process discontinued in 1985**

## **GOVERNMENT OVERSIGHT**

- **NRC license controlled four classes of scrap:**
  - **Saw chips and turnings**
  - **Fines and sludges**
- **Each class of scrap is to be mixed with inert material ( e.g. sand), placed in drums and buried in licensed landfills. Liquids are to be treated and dumped as sludge**
- **Government contracts contained several relevant provisions:**
  - **NRC license incorporated into contracts**
  - **Records of waste stream discharges into holding basin**
  - **Disposal of low level radioactive scrap at Government expense**
  - **Government approval of NMI's processes**
  - **Government property administration**

## **GOVERNMENT HAS NEVER REFUTED OWNERSHIP**

### **The Government:**

- **Paid 72% of AOT's disposal costs for their pond**
- **Cleaned up National Lead of Albany operations**
- **Studied alternatives to establish most economic approach to disposal of basis contents**
  - **Reprocessing and recovery of copper and DU**
  - **Burial in landfill**
- **Took no contractual exceptions on responsibility for low level radioactive waste**

## PROPOSED RESOLUTION

- Provide direction for disposition of residual GFM
- Provide equitable adjustment (changes clause) on Contract DAAK10-81-C-0323

# Alternatives

- Submit claim under open contracts
- Submit claim under P.L. 85-804
- Alternative disputes resolution
- Executive agreement

## **SUMMARY**

- Long standing GFM problem
- Becoming major environmental issue with Federal and State regulatory agencies
- NMI has worked to find an economical solution
- Government has provided relief to AOT and other DU producers
- Government disposition of material required as soon as possible

~~(NMI PROPRIETARY)~~