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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUL 18 1980

MEMORANDUM FOR: File WM-39

THRU: Hubert J. Miller, Section Leader
Uranium Recovery Licensing Branch

FROM: George Wu
Uranium Recovery Licensing Branch

SUBJECT: MEETING WITH DOE ON REMEDIAL ACTION PROGRAM

Date and Place

June 25, 1980; NRC Offices, Silver Spring, Maryland

Attendees

See Enclosure 1

Purpose

This meeting was requested by DOE to discuss the status and schedule of the Remedial Action (R.A.) Program and to allow NRC to provide guidance to DOE in coordinating future actions under the R.A. Program.

Summary

Attached (Enclosure 2) are the minutes for the meeting. The minutes were read and signed immediately following the meeting by the lead participants. The important points discussed and agreements reached during the meeting have been summarized in these minutes. Attached also (Enclosures 3 through 8) are the materials made available during the meeting by DOE and NRC staff.

George Wu

George Wu
Uranium Recovery Licensing Branch
Division of Waste Management

Enclosures:
As stated

cc: with all enclosures
D. Groelsema, DOE
R. Campbell, DOE-Alb.
M. Tierney, SLA

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Name	Organization	Telephone No.
Michael DeWitte	Sandia Labs	FTS 844-8359
Donald H. Groelsema	DOE/NE	Local 353-5221 FTS 233-5221
Martin Tierney	SNLA	FTS 844-1280
John McKiernan	SNLA	FTS 8442316
George Wu	NRC/WMUR	FTS 427-4088
Hubert Miller	NRC/WMUR	FTS 427-4103
Jack Rothfleisch	NRC/WMUR	FTS 427-4536
Ross Scarano	NRC/WMUR	FTS 427-4103
Ray Cooperstein	DOE-ESED	FTS 233-3639
Steven R. Miller	DOE-OGC, HPS	FTS 252-6947
Bob Strickler	DOE-EV	FTS 252-4597
Laura E. Santos	NRC/RES	FTS 427-4356
Don F. Harmon	NRC/OSD	FTS 443-5910
Bob Barber	DOE/EV	FTS 353-3548
Randy Scott	DOE/NEW	FTS 353-3984

ENCLOSURE 2

Meeting Minutes

1. DOE/NRC interface is to be as described in attached NRC handout (Enclosure 3) and as elaborated on below.

2. Specific meetings to be held as part of Remedial Action (R.A.) Program.

   - Technical Meeting/Site Visit - DOE/NRC (State) and consultants before finalization of Remedial Action Concept Paper (RACP) to:

     . Agree upon scope of alternatives

     . determine site investigation needs (detailed data aquisition at primary disposal site beyond reconnaisance level, data gathered on all sites)

   - Scoping Meeting (NEPA-CEQ) - when RACP is finalized and where EIS is to be prepared. DOE in some cases may propose for NRC concurrence not holding formal scoping meetings

   - Public Meetings in connection with NEPA-EIS process, if held.

3. Specific points of formal concurrence as currently known are marked up on the attached flow diagram (Enclosure 4).

4. Comments on RACP (Canonsburg draft)

   - Should capsulize NRC regulations (provided in draft final form during meeting for DOE guidance). Evaluation criteria should, in particular, include consideration of criteria established in regulations.

     NRC intends to utilize its impending final regulations at the inactive sites. DOE reserves judgement as to the applicability of some of the regulations to the inactive program.

5. A meeting between NRC and DOE will be held soon (within a month or so) on the DOE plan for remedial action at off-site structures and contaminated open lands to discuss at least the following:

   - DOE procedure for designation of candidate sites

   - Sampling methods and protocols for determining where remedial action is required.

   Points of contact: J. E. Rothfleisch (NRC) and DOE-NE-EV.

6. A generic health and safety plan which includes a radiation safety program will be submitted by DOE to NRC; NRC will concur. In the radiation safety portions, unique site specific differences will be concurred upon in connection with concurrence on the R.A. Plan.

   a. NRC involvement in audit and certification functions will be established in detail at a later time and will be defined taking into account the internal DOE audit and certification functions to be performed by DOE-EV.

7. Schedules - The attached schedules are tentative schedules* for the remedial actions. It calls for remedial action concept papers for four sites being prepared in fall of this year. This would mean, under the agreed upon interfaces defined above, that there would be at least four NRC/DOE technical/site visits this calendar year.

   a. It was agreed that NRC would be involved as a participating agency in the DOE NEPA/EIS process. DOE will within about 60 days formally request NRC participation.

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*This is for disposal sites only. Off-site cleanup will occur on an independent, accelerated schedule.

8. Information exchange -

- NRC provided the following during the meeting
    - Regulations (2 copies) - NRC draft final not for release (not attached)
    - NRC Participation Description (Enclosure 3)
    - Safety Evaluation Report (White Mesa) (not attached)
    - FES (Shootering Canyon) (not attached)
    - Mill License Package (as described in attached) (Enclosure 5)
    - MILDOS User's Guide (not attached)
    - SOW for assistance on structure and open lands cleanup (not attached)
- NRC to provide the following
    - NRC Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Program Plan (within several months)
- DOE supplied the following in the meeting
    - UMTRAP Schedules (levels 0 + 1) and Flow Chart (Enclosure 6)
    - RACP (draft) on Canonsburg and RACP Outlines No. 1 and No. 2 (Enclosure 7)
    - Activity/Deliverable Schedule (Sandia, June 3, 1980) (Enclosure 8)

- DOE to supply the following:

  - EIS Style and Format Guide
  - EIS/EA Scope and Content Guide*
  - NEPA Implementation Plan*
  - Site Characterization Plan (Generic Plan)**

    (Disposal and Processing site)

    -kinds of information
    -depths of information
    -time phasing
    -for what purpose

  - Disposal Site Qualification Criteria Document**
  - Tailings Removal Criteria

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*NRC Concurrence

**NRC review and comment

NRC PARTICIPATION IN TITLE I - REMEDIAL ACTION PROGRAM

1. Early involvement by NRC in evaluation of alternative remedial actions. Prior to preparation of RA Concept Paper NRC should participate with DOE and State in discussions of viable alternative actions and suitability of alternative disposal sites. This might involve an early site visit by NRC to inspect alternative sites.

2. Review proposed Concept Paper and along with consultants assist in defining scope of the EIS/EA. The Concept Paper should serve as the basis for a public scoping meeting held pursuant to NEPA procedures.

3. Review DEIS/EA and provide input on responses to comments as appropriate.

4. Review FEIS/EA and concur prior to publication.

5. Review Preliminary RA Plan and provide comments as required. RA Plan should follow appropriate NRC regulations with respect to tailings stabilization criteria.

6. Review and concur in final RA Plan (no concurrence in detailed design which will be reviewed by NRC for information only).

7. Review and concur in DOE Radiation Safety Program to be conducted during implementation of the RA Plan. NRC will audit performance of Radiation Safety Program.

8. Audit and Certify compliance with EPA standards for disposal sites.

9. Review License Application submitted by Project Office.

10. Issue By-product Material License to DOE including conditions for monitoring, maintenance and emergency measures.

MAJOR ITEMS IN NRC INVOLVEMENT
IN REMEDIAL ACTION PROGRAM

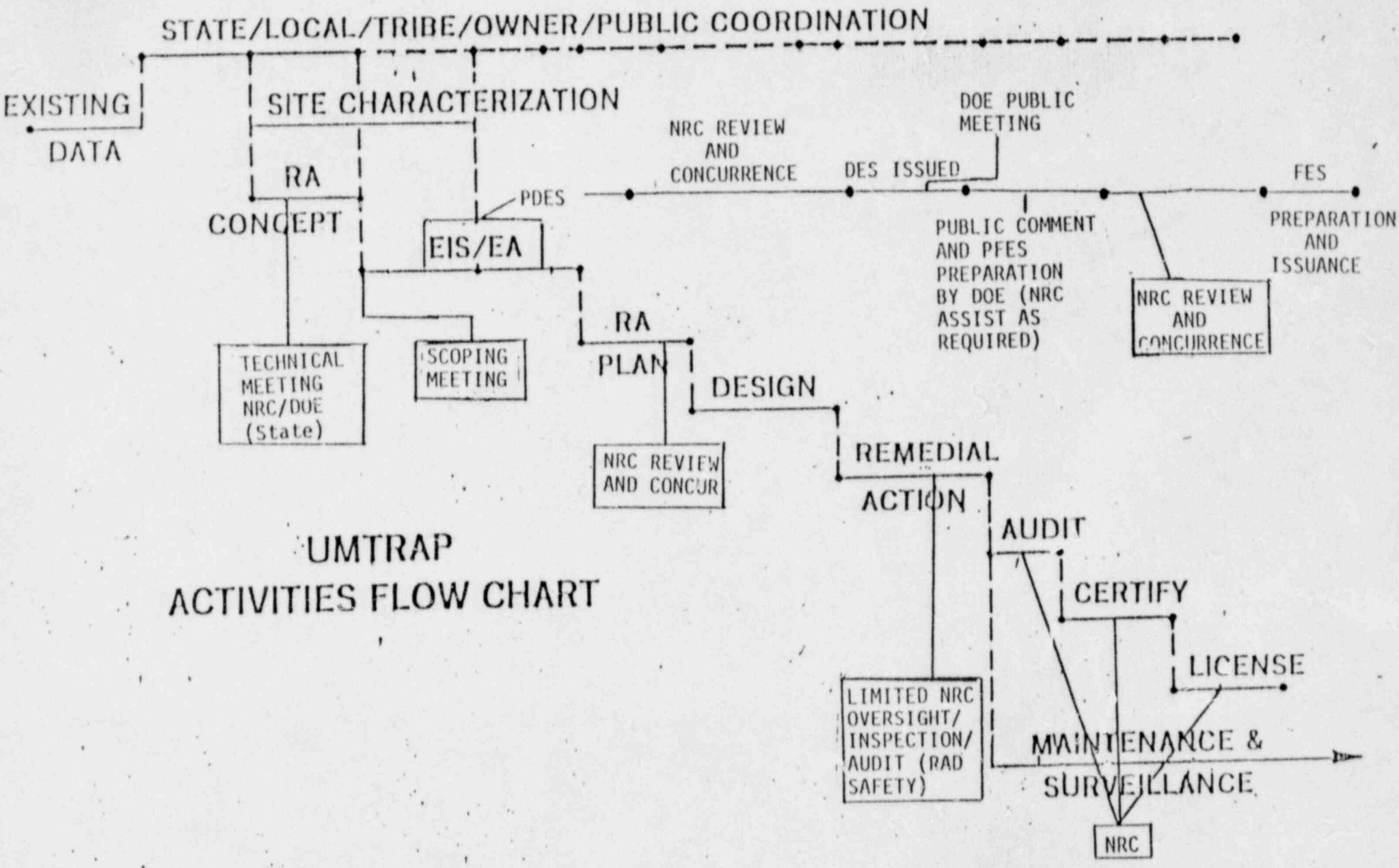
A. Designation of off-site structures requiring remedial action. Need for working up interim procedures to obtain required data for comparison with proposed EPA standards.

B. Selection of required remedial action and evaluation of remedial action performance.

C. Sufficient survey data to provide basis for concurrence that remedial action program has been satisfactorily completed.

D. Issue license for possession of byproduct material.

ENCLOSURE 4



UMTRAP
ACTIVITIES FLOW CHART

UMTRAP 4/80

ENCLOSURE 5

Uranium Recovery Licensing Branch
Mill Package

Branch Positions -

1. *Uranium Mill Tailings Management,* dated May 13, 1977

2. *Exploration for Design and Evaluation of Uranium Mill Tailings Retention Systems,* dated January, 1979

3. *Contents of Applications for Uranium Ore-Buying Station Licenses,* dated February 8, 1978

4. *Bioassay at Uranium Mills,* dated June, 1978

5. *Suggested Contents of Applications for Licenses Authorizing Small Scale or Research and Development Processing of Uranium Ores,* dated February 27, 1978

6. *Preoperational Radiological Environmental Monitoring Programs for Uranium Mills,* dated January 9, 1978

7. *Operational Radiological Environmental Monitoring Programs for Uranium Mills,* proposed Branch Position (draft)

8. *Interim Land Cleanup Criteria for Decommissioning Uranium Mill Sites,* dated May, 1978

Regulatory Guides -

1. Regulatory Guide 1.132 - *Site Investigations for Foundations of Nuclear Power Plants*

2. Regulatory Guide 1.138 - *Laboratory Investigations of Soils for Engineering Analysis and Design of Nuclear Power Plants*

3. Regulatory Guide 3.8 - *Preparation of Environmental Reports for Uranium Mills*

4. Regulatory Guide 3.11 - *Design, Construction, and Inspection of Embankment Retention Systems for Uranium Mills*

5. Regulatory Guide 3.11.1 - *Operational Inspection and Surveillance of Embankment Retention Systems for Uranium Mill Tailings*

6. Regulatory Guide 4.14 - *Measuring, Evaluating, and Reporting Radioactivity in Releases of Radioactive Materials in Liquid and Airborne Effluents from Uranium Mills*

7. Regulatory Guide 4.15 - *Quality Assurance for Radiological Monitoring Programs (Normal Operations)--Effluent Streams and the Environment*

8. Regulatory Guide 8.22 - *Bioassay at Uranium Mills*

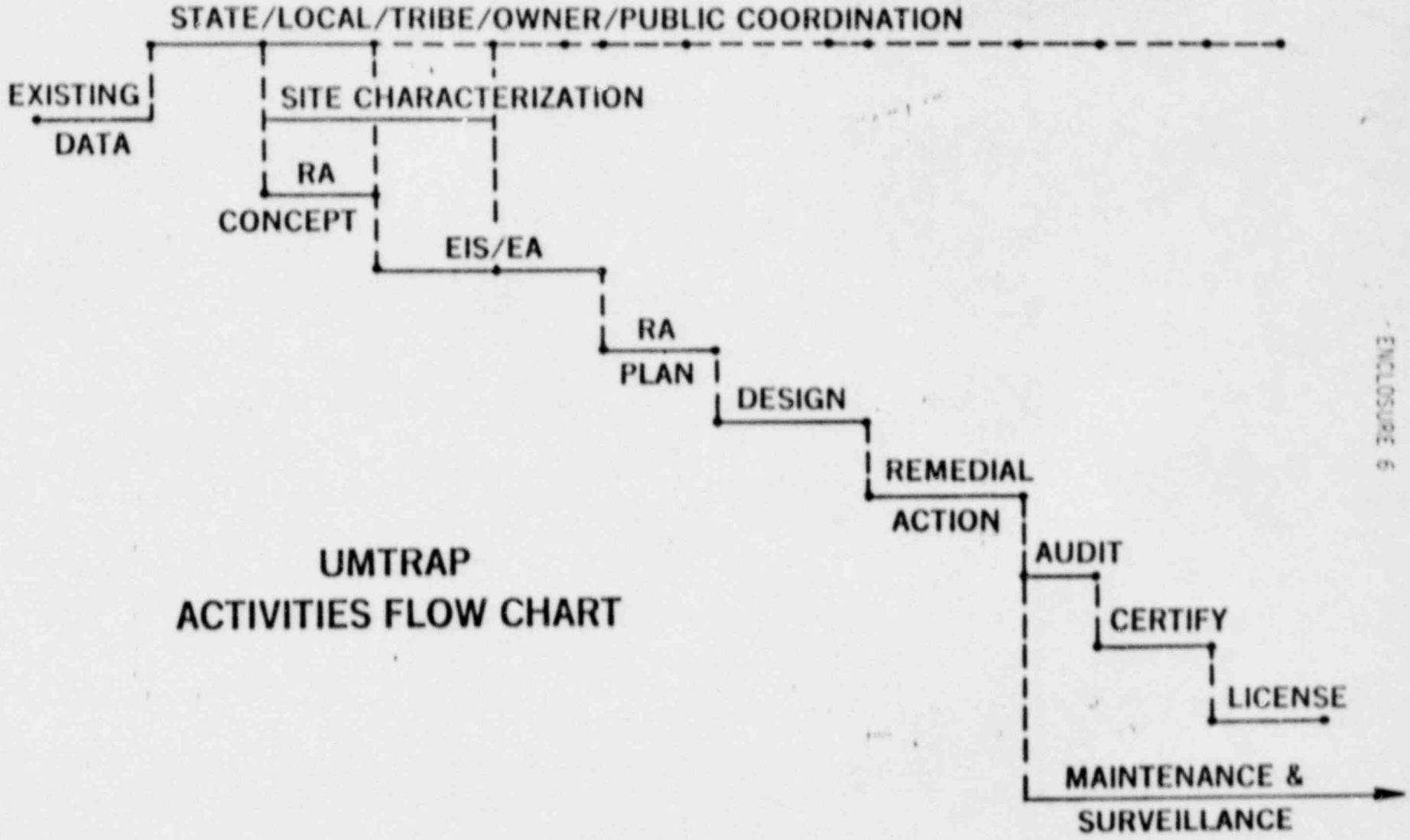
Additional Items

Included as Part of Mill Package

1. Annex C: Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material.

2. Task RH 802-4: Calculational Models for Estimating Radiation Doses to Man from Airborne Radioactive Materials Resulting from Uranium Milling Operations.

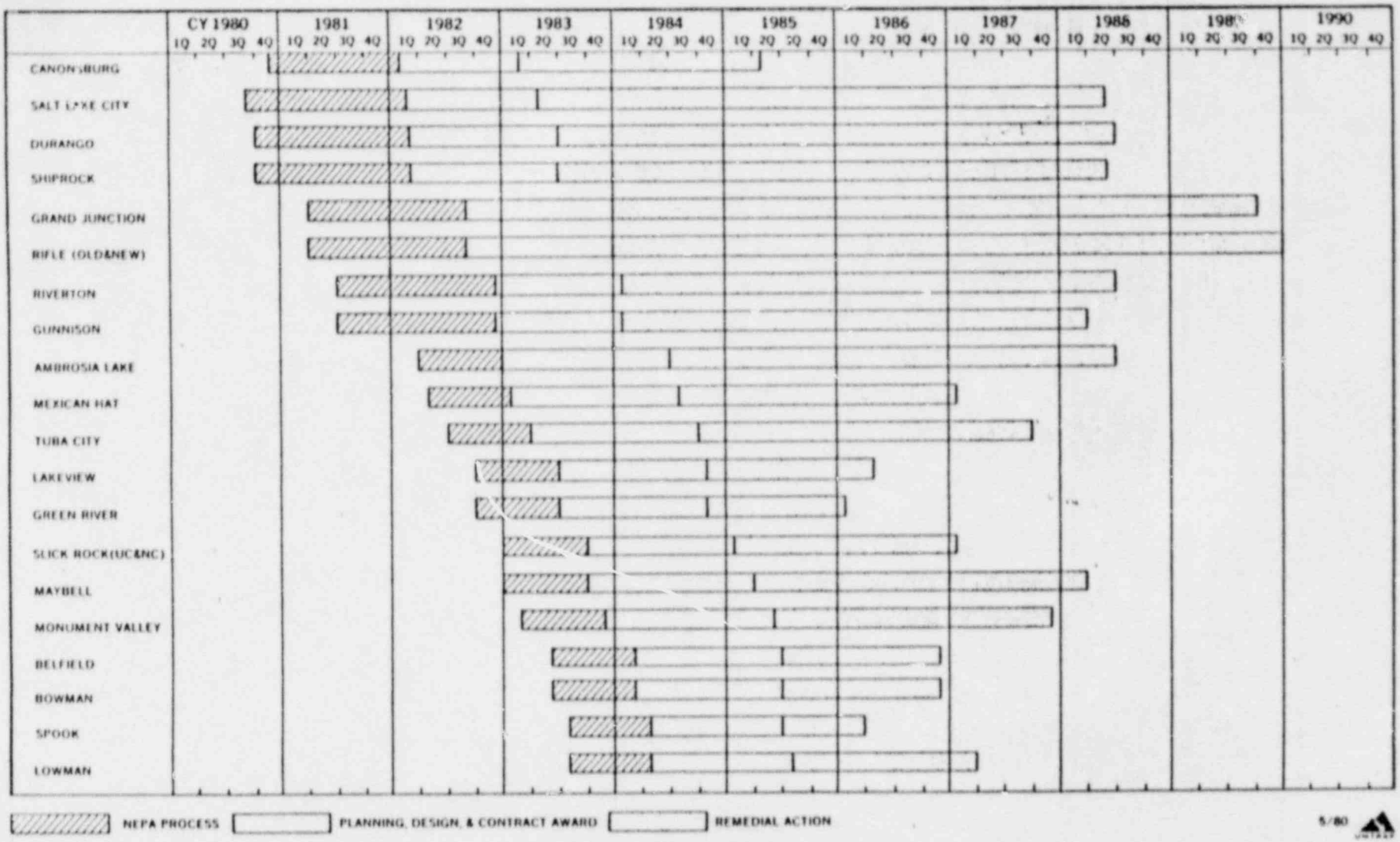
3. MILDOS User's Guide, NRC, 1980.



UMTRAP
ACTIVITIES FLOW CHART

ENCLOSURE 6

REMEDIAL ACTION PROCESS MASTER SCHEDULE



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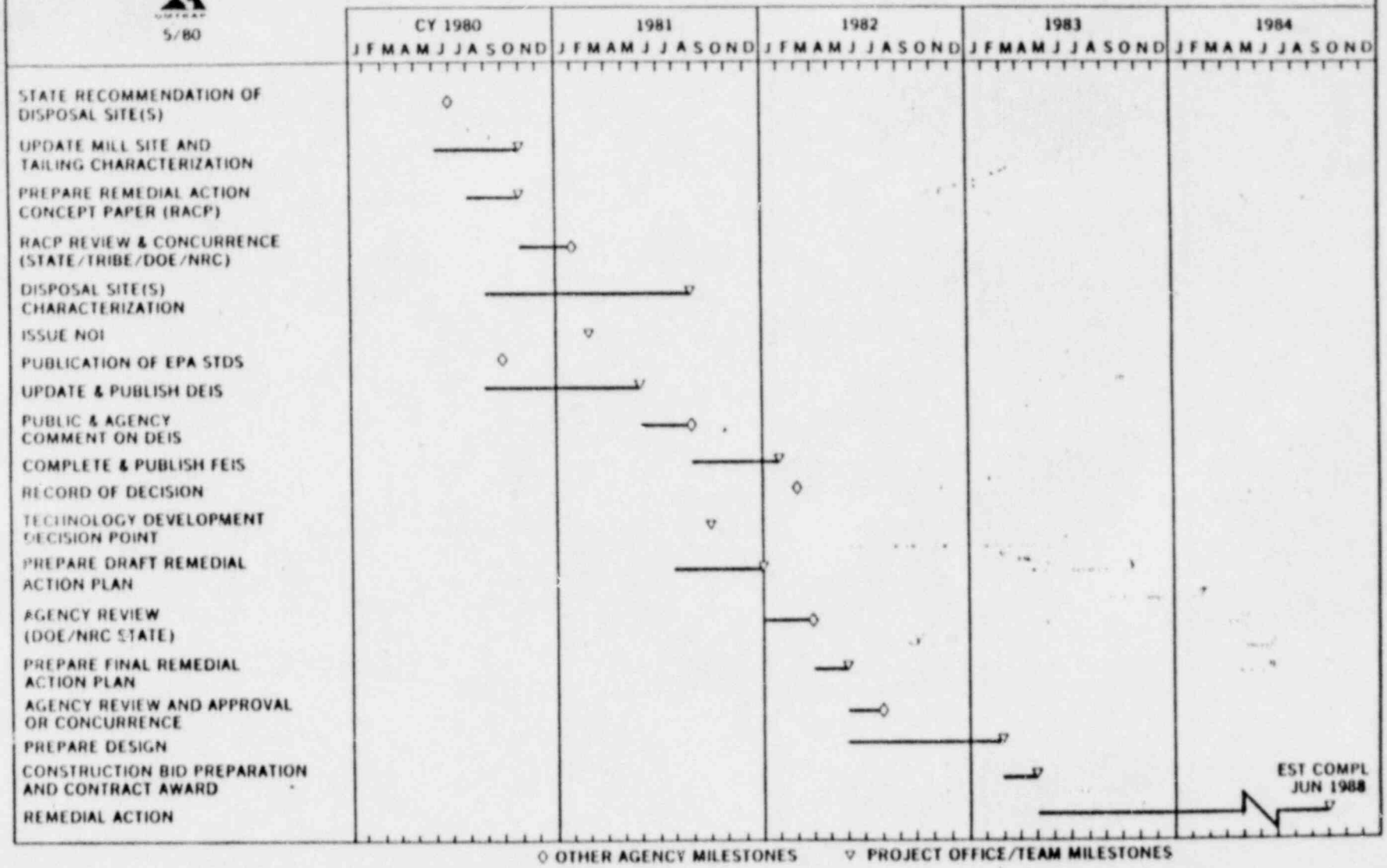
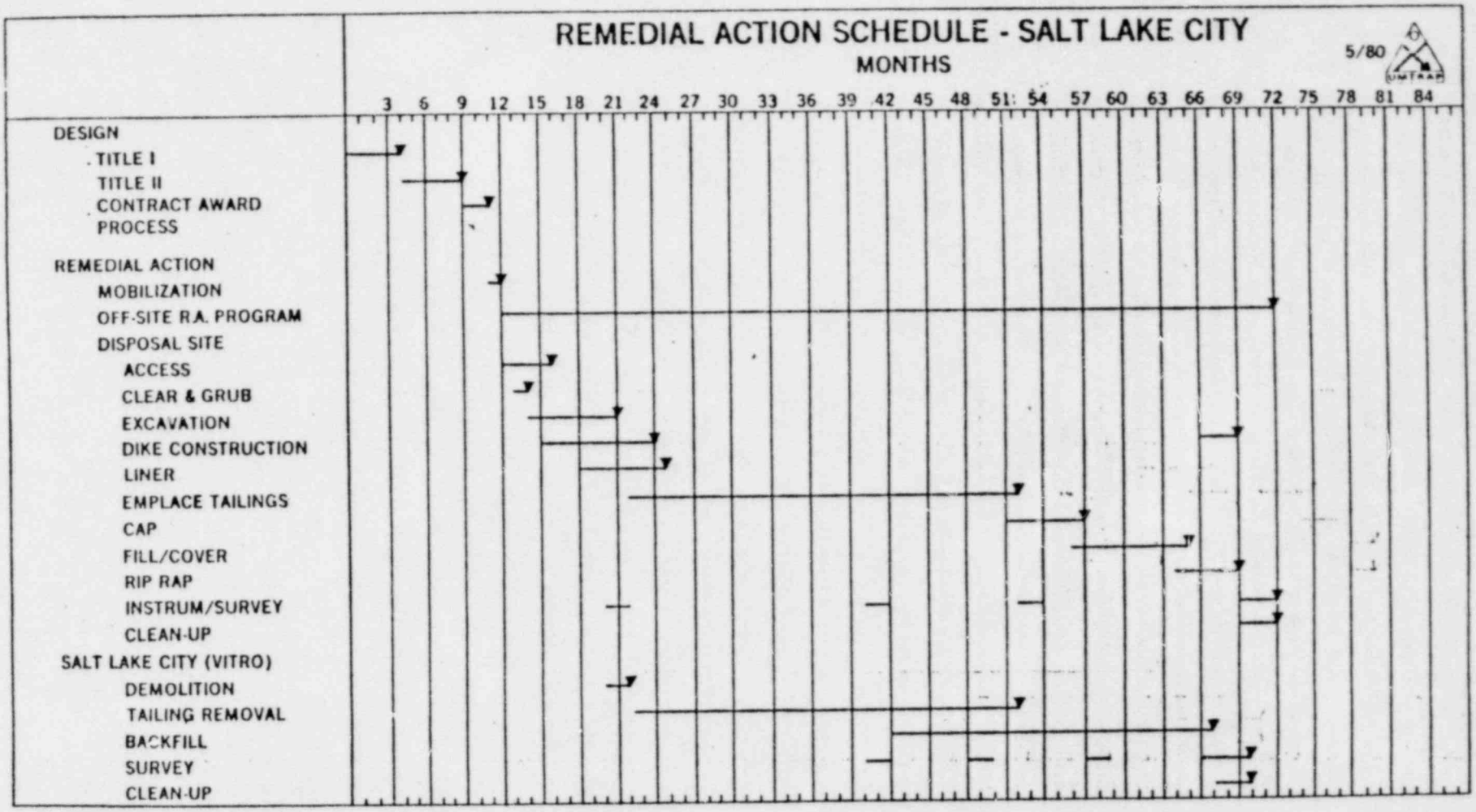
REMEDIAL ACTION PROCESS SCHEDULE FOR SALT LAKE CITY

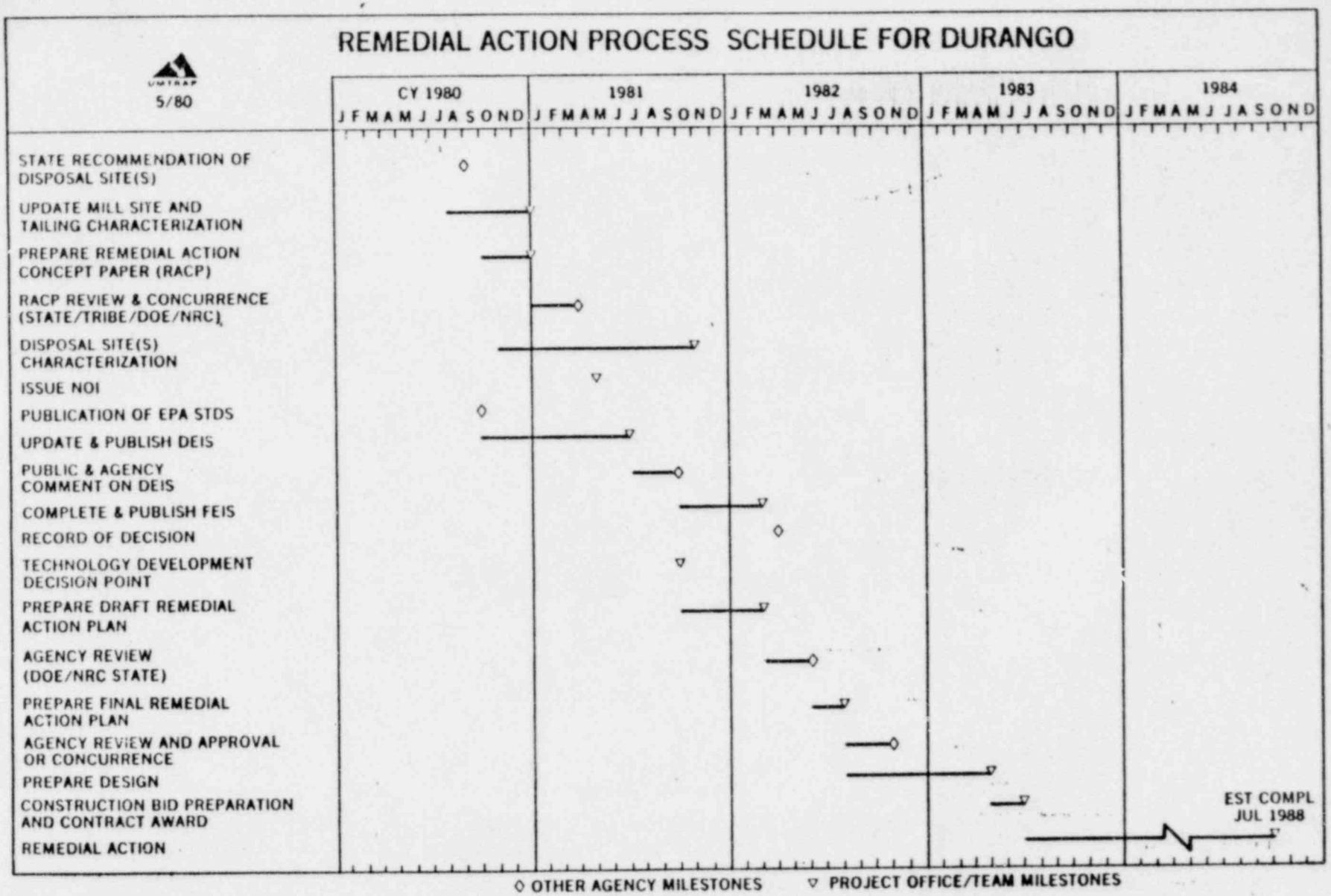
5/80

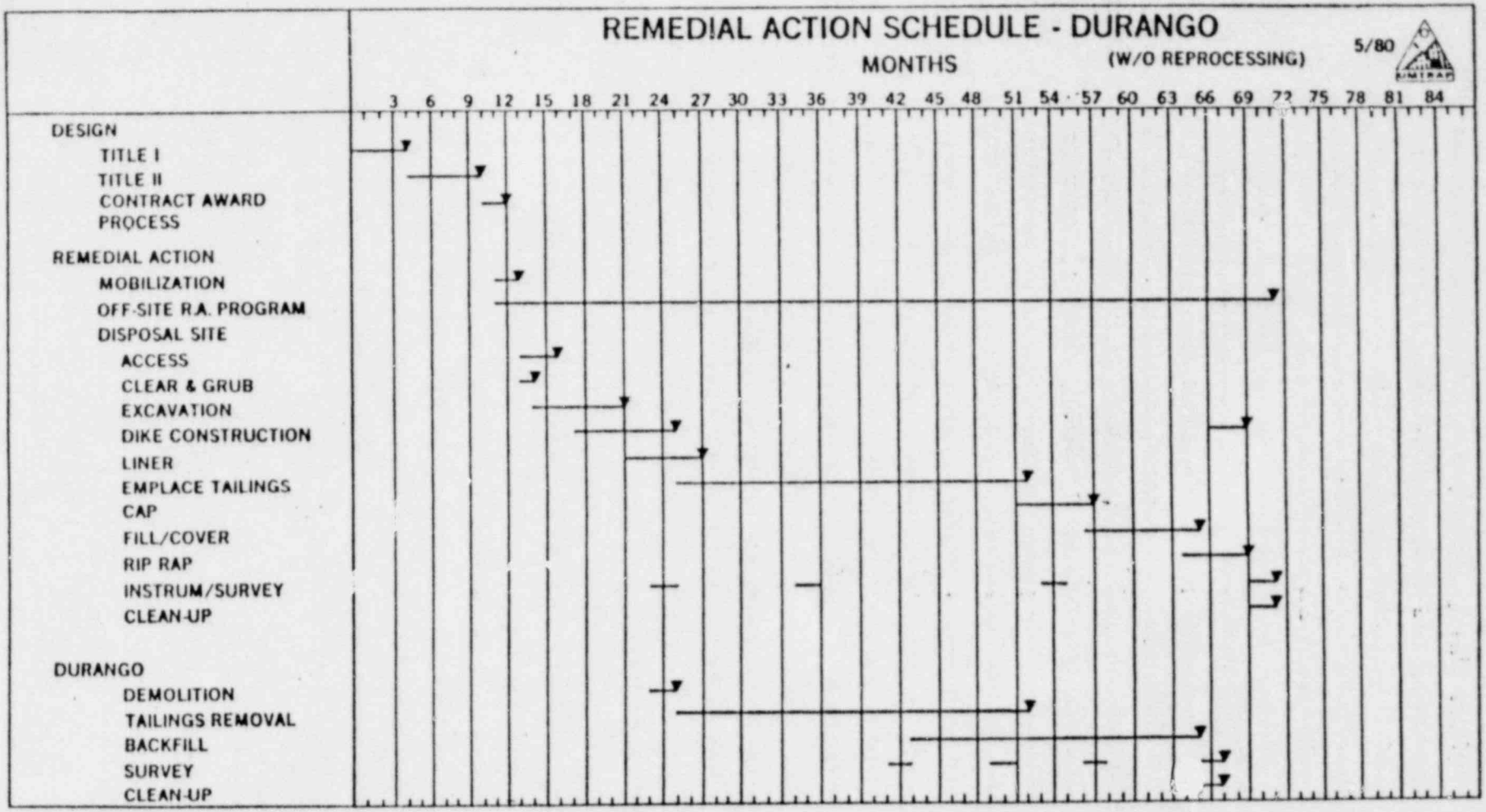



REMEDIAL ACTION SCHEDULE - SALT LAKE CITY
MONTHS
5/80
3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60 63 66 69 72 75 78 81 84
DESIGN
TITLE I
TITLE II
CONTRACT AWARD PROCESS
REMEDIAL ACTION
MOBILIZATION
OFF-SITE R.A. PROGRAM
DISPOSAL SITE
ACCESS
CLEAR & GRUB
EXCAVATION
DIKE CONSTRUCTION
LINER
EMPLACE TAILINGS
CAP
FILL/COVER
RIP RAP
INSTRUM/SURVEY
CLEAN-UP
SALT LAKE CITY (VITRO)
DEMOLITION
TAILING REMOVAL
BACKFILL
SURVEY
CLEAN-UP

REMEDIAL ACTION PROCESS SCHEDULE FOR DURANGO

UMTRAP 5/80




REMEDIAL ACTION SCHEDULE - DURANGO
MONTHS
(W/O REPROCESSING)
5/80
3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60 63 66 69 72 75 78 81 84
DESIGN
TITLE I
TITLE II
CONTRACT AWARD PROCESS
REMEDIAL ACTION
MOBILIZATION
OFF-SITE R.A. PROGRAM
DISPOSAL SITE
ACCESS
CLEAR & GRUB
EXCAVATION
DIKE CONSTRUCTION
LINER
EMPLACE TAILINGS
CAP
FILL/COVER
RIP RAP
INSTRUM/SURVEY
CLEAN-UP
DURANGO
DEMOLITION
TAILINGS REMOVAL
BACKFILL
SURVEY
CLEAN-UP

DRAFT

Remedial Actions Concept Paper for Canonsburg, Pennsylvania

In November 1978, Congress enacted Public Law 95-604, the "Uranium Mill Tailings Radiation Control Act of 1978." The Act authorized the Department of Energy (DOE) to enter into cooperative agreements with the affected States, Indian tribes, and owners of the inactive uranium mill tailings, in order to establish assessment and remedial action programs at inactive uranium mill tailings sites. Title I of the Act further stipulated that DOE would meet all the radiation standards as promulgated by the Environmental Protection Agency (EPA), and the licensing conditions and rules issued by the Nuclear Regulatory Commission (NRC) for implementation of the remedial action program. Additionally, DOE is to finance up to 90 percent of the remedial action costs, and the affected states will be required to pay the remaining costs. An exception to this latter requirement are those sites on Indian tribal lands, where 100 percent of the costs for remedial action will be borne by the Federal Government.

In November 1979, twenty-five sites including Canonsburg, Pennsylvania were designated as eligible for remedial actions. The Cooperative Agreement, which establishes the guidelines, responsibilities, and conditions for remedial actions at Canonsburg, was signed by Pennsylvania and DOE on _____.

In order to provide the preliminary plan of action for the Canonsburg site, this concept paper has been developed by the Uranium Mill Tailings Remedial Actions Project Office (UMTRA-PO) of DOE and concurred in by the Commonwealth of Pennsylvania.

Site Description

The Canonsburg site is the location of the former Vitro Rare Metals Plant, which is situated in Washington County in southwestern Pennsylvania and within the Borough of Canonsburg. Canonsburg is approximately 20 miles southwest of downtown Pittsburgh, Pennsylvania. The site is divided into three parcels of land: Area A, Area B, and Area C, as shown in Figure 1. Chartiers Creek is adjacent to Areas B and C.

The Canonsburg site originally was operated as a radium extraction plant by the Standard Chemical Company from 1911 to 1922. Later, Vitro Corporation of America acquired the property and processed the on-site tailings to extract radium and uranium salts. From 1942 until 1957, Vitro was under contract to the federal government to recover uranium from ore and scrap. For the next nine years the site was used only for storage, under an AEC contract. Since 1967, the property has been owned by the Canon Development Company and is called the Canonsburg Industrial Park. The various buildings on site are leased to tenant companies for light industry.

Processing of radioactive residues, scrap, and other material at the Canonsburg site by Vitro and later storage of radioactive materials at the site eventually led to contamination of the soil to various depths. The residues

contained widely varying concentrations of radium, thorium, uranium, and other naturally occurring radionuclides. These residues have been detected over most of the site. Apparently all of the buildings in the Canonsburg Industrial Park are either built over or are adjacent to soils containing elevated quantities of radium.

The Canonsburg site, which consists of 19 acres, contains more than 200,000 tons of tailings and contaminated materials.

The major vicinity location that was contaminated with radioactive material from Canonsburg is the Pennsylvania Railroad Landfill site. This latter site is located approximately 1 mile east of the town of Blairsville in Indiana County, Pennsylvania, north of the Conemaugh River and south of the mainline tracks of ConRail (see Figure 2). The Pennsylvania Railroad owned the property that contains the landfill during the time radioactive material was dumped at the site. Ownership passed to the Penn-Central Transportation Company Properties Division (now ConRail), but the Pennsylvania Railroad Landfill name has been retained though the location is also called the Burrell Township site.

During a 4-month period, October 1956 through January 1957, radioactive material was shipped by rail from Vitro Corporation's uranium processing plant in Canonsburg, Pennsylvania to the Landfill site. Ordinary, noncontaminated materials later were placed over the contaminated waste to reduce the radiation at the surface. Subsequent radiological surveys revealed that the depth of cover over the contaminated material was not uniform and that radiation levels above background were observed at several locations.

The Landfill site consists of approximately 9 acres and contains about 120,000 tons of radioactive materials. In addition, this site has been used as a chemical dump, and it is likely that dispersion and migration has occurred between the chemical and radioactive materials. The Burrell Township site is included in this Remedial Actions Concept Paper due to its containing a large amount of radioactive materials from the Canonsburg site.

Remedial Action Objectives

The objective of the remedial action project at Canonsburg is to implement a clean-up program according to EPA standards (Figure 3). This will consist of identifying the locations of the tailings and contaminated soils and materials, as well as the transfer of these tailings and materials to the designated disposal site. The purpose of the project is to allow for vicinity properties that are contaminated with tailings and processing sites that are not designated as disposal sites to be released for unrestricted use. In addition, by combining and stabilizing all tailings and contaminated materials at specified, controlled disposal sites, potential health effects caused by exposure to the tailings will be significantly lessened. In effect, then, by stabilizing and controlling the tailings in a safe and environmentally sound manner, the health risks to the public will be minimized.

Remedial Action Alternatives

The basic options available for implementing remedial actions are to undertake no action, to perform stabilization-in-place at Canonsburg, or to transport the tailings to a new disposal site and decontaminate the former processing site. Further descriptions of the options are discussed as follows:

Option 1: No Action

This option consists of performing no remedial actions, i.e., allowing the present situation to continue with no corrective action. This option is included mainly for comparison purposes with the other options.

Option 2: Stabilization-in-place

This alternative consists of decontaminating vicinity properties that are contaminated with tailings by accumulating all off-site contaminated materials at the Canonsburg Development Company property. The vicinity properties would include all open lands, homes, businesses, churches and other dwellings where the radiation levels are higher than the EPA criteria due to the presence of tailings or other radioactive materials from the processing site at the off-site properties. The Pennsylvania Railroad Landfill would be designated as a vicinity property and would undergo the same procedure.

The Commonwealth of Pennsylvania would acquire the Canonsburg Development Company property, and it would be designated as a diposal site. Stabilization of all tailings and contaminated materials would then be conducted at the site, with the buildings on the site being demolished and buried. If required in order to prevent ground water contamination, a liner system would be placed under the tailings either by excavating the tailings at the site, installing a liner system and then placing the tailings on the underground liner, or using an alternate procedure that will be developed by DOE's research and development program. An as yet to be determined covering would then be installed on top of the tailings and contaminated materials and soils, and this would reduce the radon flux to the prescribed EPA limit.

While all vicinity properties would be available for unrestricted use, the 19 acre Canonsburg site would become the disposal site and therefore, with the installation of a security fence and monitoring devices as deemed necessary, would be under restricted access. When stabilization had been completed, ownership of the site would be transferred from Pennsylvania to DOE, and NRC would issue a license for the disposal site.

Option 3: Decontamination of Canonsburg Site and Transfer of Tailings to New Disposal Site

This alternative consists of selecting a disposal site other than Canonsburg for the tailings. All contaminated materials and soils at vicinity properties and the Canonsburg site would be transported by rail or truck to one of the new disposal sites discussed below. In all of these cases, the Commonwealth of Pennsylvania would acquire both the Canonsburg Development Company property and the new disposal site. Acquisition of the Canonsburg site will enable the

tenants on the site to be relocated to other locations and facilities which are not contaminated with tailings. The Canonsburg site will also be used as a temporary storage area for contaminated materials and soils from vicinity properties until such time as the new disposal site is available for receipt of radioactive materials. The procedures for decontaminating off-site properties will be identical to those used in Option 2.

The method and procedures of transport of the tailings and other materials from Canonsburg to the new disposal site will be selected on the basis of potential health effects, environmental and safety concerns, accessibility, and cost effectiveness. The schedules and routes used in moving the tailings will be established to minimize the impact on the surrounding communities. In all cases, the stabilization procedures and systems would be the same as discussed in Option 2, as required.

Descriptions of the new, potential disposal sites are as follows:

Option 3A: Disposal Site at Pennsylvania Railroad Landfill

This option would involve removing all the tailings and contaminated materials from the Canonsburg site and vicinity properties and transporting them to the Landfill site near Blairsville. This would allow consolidation of the radioactive material at the 1956-1957 dump site. Railroad cars would be used in transporting the material from Canonsburg to the Landfill. A liner system would be installed in the large cavity or depression at the site, and the tailings and other materials would be dumped on top of the liner. A cover system would then be placed on top of the radioactive material. The type and design of both the liner and cover systems would be determined at a later date.

Option 3B: Disposal Site X

Option 3C: Disposal Site Y

Option 3D: Disposal Site Z

Criteria for Alternatives Evaluation

In the assessment of the alternatives for disposing of the Canonsburg tailings, criteria have been developed that will be used as the guidelines in the determination of the preferred option. These criteria include, but are not limited to, the following:

(1) Assurance of achieving EPA standards requirements for 1,000 years.
(2) Vulnerability to catastrophic natural phenomena, e.g., seismic disturbance, floods, etc.
(3) Present and forecasted population density surrounding the potential disposal sites.
(4) Potential health effects from the mode of transport of the tailings. This criterion will enable a comparison of the health effects of stabilizing the tailings in place at Canonsburg with transporting, by various means, the tailings to alternate disposal sites.
(5) Hydrology of the disposal site area.
(6) Characteristics, e.g., geochemical, physical, etc., of the surrounding soils and rocks.
(7) Meteorological information of the site locations.
(8) Economics of the decontamination/transport/stabilization alternatives.
(9) Differences in long-term maintenance/surveillance requirements among the various sites.
(10) Land use potential of disposal sites for other activities.

Evaluation of the Alternatives

This section will be concerned with the assessment of the various disposal site alternatives. While the National Environmental Policy Act (NEPA) process must be completed prior to assigning a quantitative evaluation factor to the characteristics of each alternative, a general qualitative value has been ascribed to each option, as shown in Figure 4. It should be emphasized that ratings for each option are preliminary at this time, and more detailed analyses will be conducted. In Figure 4, a "Positive" notation means that a particular criterion seems to favor that option, while a "Negative" notation means the criterion probably does not favor the option, and a "Neutral" notation means that no determination can be made at this time. The criteria are in a very approximate order of importance, and a "Negative" rating for criteria 1 or 2 will effectively eliminate that option.

Option 1: No action

This alternative involved no remedial actions. Since radon daughter concentrations (RDC) and external gamma radiation (EGR) at the Canonsburg site exceed the draft EPA standards, Criterion 1, which is achievement of EPA standards, is not met and thus this option is rejected.

Option 2: Stabilization-in-place

This alternative involves using the Canonsburg Industrial Park as the disposal site. This option can achieve the EPA standards, and it does not locate the tailings at a site vulnerable to natural catastrophe. In addition, this alternative minimizes health risks from tailings transport since it limits the amount and distance of the transport of the tailings. Nevertheless, this option has an overall negative rating because it results in a relatively high population density surrounding the tailings disposal site. Other more remote sites would be more attractive.

Option 3A: Transport Tailings to Pennsylvania Railroad Landfill

This alternative is rejected because it violates the criterion that require the site not to be vulnerable to natural phenomena. The Landfill is located next to the Conemaugh River and it lies within the flood plain of the river. Thus, the integrity of the disposal site cannot be assured.

Option 3B

Option 3C

Option 3D

Preferred Alternative

As briefly noted in the above section and in Figure 4, the preferred alternative is Option ___ because, more specifically, _____ _____.

Future Activities

The Remedial Action Concept Paper for Canonsburg is the preliminary plan of action for the Canonsburg tailings. Before a final decision is made, however, additional activities will be performed, as noted below:

— Data Gathering
More detailed data, including meteorological, seismic, hydrological, geochemical, physical, etc., is required for the potential disposal sites before assurance can be provided that the currently preferred alternative is indeed the best option. DOE contractors will be instructed to visit the disposal sites for Options 3B, 3C, and 3D, and gather and accumulate all data necessary to make an informed, recommended decision concerning the best disposal site.

— Acquisition of Canonsburg Site
Since all alternatives, excluding Option 1, require acquisition of the Canonsburg Industrial Park, the Commonwealth of Pennsylvania with DOE concurrence will initiate negotiations with the owner of the site to buy the property. This will enable the individuals working on the site to be relocated to less contaminated surroundings in the near future.

— Decontamination of Off-Site Properties
For remedial actions to commence at vicinity properties contaminated with tailings, the following actions must first be accomplished:

(1) The Cooperative Agreement signed by Pennsylvania and DOE;
(2) State funds appropriated or earmarked for remedial actions;
(3) Off-site properties officially designated by DOE;
(4) Temporary storage site identified for contaminated materials until permanent disposal site selected (the most feasible storage site seems to be the Canonsburg Industrial Park);
(5) Permission from vicinity property owner to survey his property;
(6) Preparation, review and approval of Engineering Assessment Report and design for remedial action for each property; and
(7) Contractor selected by DOE to accomplish off-site remedial actions at Canonsburg.

Once the above actions are completed, remedial actions can commence on off-site properties, and this is expected to occur by late 1980.

— On-site Remedial Actions
To implement remedial actions at the Canonsburg site, the following activities must be accomplished:

Prepare an EIS
An Environmental Impact Statement (EIS) for the Canonsburg tailings situation is being prepared by a DOE contractor. The draft EIS is expected to be issued by May 1981 and the final EIS in late 1981.

Acquire Disposal Site
The Commonwealth of Pennsylvania, with DOE concurrence, will acquire the preferred disposal site following the issuance of the final EIS.

Obtain A-E/CM Services and Perform Design

An architect-engineer/construction manager will be selected by DOE by the summer of 1981. The A-E/CM will use the output of the DOE research and development program and the draft EIS to develop detailed designs and issue subcontracts to move the tailings to a new disposal site.

Conduct On-Site Remedial Action Efforts
An outline of the remedial action process at Canonsburg is shown in Figure 5. It is expected that remedial actions that will decontaminate the current Canonsburg site will be initiated in 1982.

— Public Participation
The Canonsburg Task Force will hold public hearings and meetings throughout the remedial actions process so that current information can be provided to the community, as well as allow the populace to provide input into the decision-making process of determining the best remedial action alternative for the Canonsburg tailings.

Figure 3

EPA STANDARDS FOR REMEDIAL ACTION (RA)

Type of Radiation	Remedial Action (RA) Criteria
External Gamma Radiation (EGR) in Dwellings	RA required if EGR 0.02 mR/hr above background
Radon Daughter Concentration (RDC) in Dwellings	RA required if RDC 0.015 WL including background
^{226}Radium Concentration on Open Lands	RA required if ^{226}Ra 5 pCi/gm
Radon Flux Limit (RFL) for Tailings Disposal Site	RFL 2 pCi/m^2/sec for Disposal Sites

Legend

mR/hr = MilliRoentgen per Hour
WL = Working Level, or RDC per liter of air that results in eventual emission of 1.3×10^5 MeV of alpha energy
pCi/gm = picocuries per gram

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Figure 4

Evaluation of Alternatives

	Criteria	Option 1	Option 2	Option 3A	Option 3B	Option 3C	Option 3D
I.	Achievement of EPA Standards	Negative	Positive	Negative			
II.	Vulnerability to Catastrophe	Negative	Positive	Negative			
III.	Population Density	Negative	Negative	Positive			
IV.	Health Effects From Transport	Positive	Positive	Negative			
V.	Hydrology	Negative	Negative	Negative			
VI.	Soil Characteristics	Neutral	Neutral	Neutral			
VII.	Meteorological Info	Neutral	Neutral	Neutral			
VIII.	Economics	Positive	Positive	Neutral			
IX.	Maintenance/Surveillance Requirements	Negative	Negative	Positive			
X.	Land Use Potential	Negative	Negative	Positive			
	Evaluation:	Negative	Negative	Negative			

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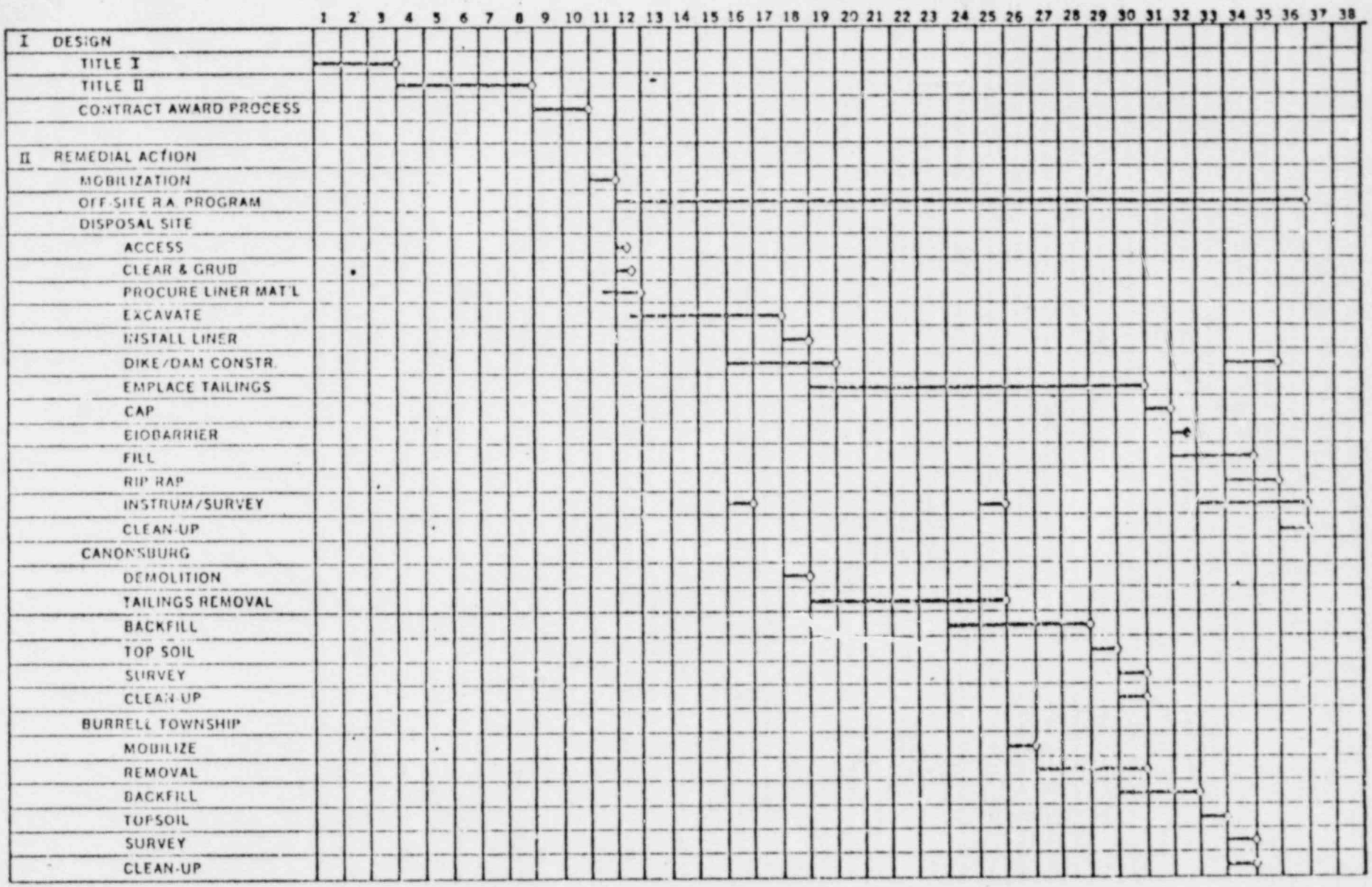
Figure 5

REMEDIAL ACTION SCHEDULE - CANONSBURG

UMTRAP
2/80



Outline #1

Remedial Actions Concept Paper

Introduction

1. Site Description

2. Remedial Action Objectives

3. Remedial Action Alternatives

4. Criteria for Alternatives Evaluation

5. Alternatives Evaluation

6. Preferred Alternative

7. Future Activities

Appendices

Outline #2

Remedial Actions Concept Paper

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D. EPA Standards

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H. Preferred Alternative

I. Environmental Concerns

J. Future Activities and Schedules

K. Appendices

Activity/Deliverable Schedule Date: 6/3/80

Sandia National Laboratory (SNLA)
Interim Technical Support for the
Uranium Mill Tailings Remedial Actions (UMTRA) Project

Item	Task/Sub-Task	Schedule
Task I - Planning and Studies (AP-10-15-05-0)		
I-1	Support planning & coordination efforts involving other DOE and Federal organizations, State and local governments, Indian tribes, and private owners of sites and properties.	Continuing activity.
I-2	Prepare Remedial Action Concept Papers (RACP's) for sites as directed.	(1) For sites involving tailings removal: Final draft RACP 90 days after State designation of disposal sites. (2) For sites involving stabilization in place: Final draft RACP 60 days after DOE/State agreement on stabilization in place.
I-3	Prepare Remedial Action Plans (RAP's) for sites as directed.	Final draft 60 days after Final EIS published.
I-4	Analyze DOE/NRC interface and licensing procedures & requirements, and prepare UMTRA Licensing Plan.	Final draft 10/1/80.
I-5	Review current engineering & radiological survey documentation, assess current site conditions, and prepare Site Characterization Plan.	Final draft generic plans for processing and disposal sites 7/31/80.
I-6	Prepare decision criteria for determinations on removal of tailings from processing sites.	Final draft 6/30/80.
I-7	Prepare Disposal Site Qualification Criteria document.	Final draft 6/30/80.

Item	Task/Sub-Task	Schedule
I-8	Analyze research & development requirements and prepare technology development plan that is coordinated with NRC and EPA activities.	Final draft 7/15/80.
I-9	Prepare Project Management Plan.	Final draft 8/29/80.
I-10	Review Headquarters Generic Program Plan and prepare recommendations for revisions to the Plan.	Complete 6/20/80.
I-11	Prepare Public Participation Plan.	Final draft 8/15/80.
I-12	Prepare Project Quality Assurance Plan.	First draft 6/20/80. Final draft 10/1/80.
I-13	Prepare Project Safety Plan.	Final draft 10/1/80.
Task II - Environmental Activities (AP-10-15-15-0)		
II-1	Provide overall management, planning & direction for preparation, review and publication of NEPA documentation.	Continuing activity.
II-2	Prepare NEPA Implementation Plan.	First draft 6/2/80. Final draft 6/30/80.
II-3	Prepare Guidelines for Environmental Assessment (EA) preparation.	First draft 7/1/80. Final draft 7/31/80.
II-4	Prepare EIS Style and Format Guidelines.	Final draft completed 5/8/80.
II-5	Prepare EIS Scope and Content Guidelines.	First draft 6/2/80. Final draft 6/30/80.
II-6	Prepare schedule for publication of EIS's and EA's.	(1) Generic schedule included in NEPA Implementation Plan (Task II-2). (2) Site specific schedules included in Level Zero and Level One project schedules (Task III-9). (3) Specific NEPA EIS/EA schedule due 6/16/80.

Item	Task/Sub-Task	Schedule
II-7	Prepare Draft EIS's for Salt Lake City, Durango, Shiprock, Grand Junction, Riverton, Gunnison, and Rifle (2) sites; support review process; and prepare masters for publication of Final EIS's.	Continuing activity (delivery schedules included in Task II-6).
II-8	Analyze relationships of EIS to Safety Analysis Report (SAR) requirements and recommend actions required.	Recommendations due 6/30/80.
II-9	Review the existing environmental data base, incorporate requirements into the Site Characterization Plan (Task I-5), and accomplish data acquisition as required.	Continuing activity.
II-10	Coordinate EIS preparation on Canonsburg site with Weston.	Continuing activity.
	Task III - Technical Support (AP-10-15-40-0)	
III-1	Provide technical capability to assist in identification of candidate disposal sites.	Continuing activity.
III-2	Review EPA standards and associated EIS and provide recommendations for comments to EPA.	(1) For off-site standards, 5/29/80. (2) For disposal standards, 30 days after EPA issuance.
III-3	Review reprocessing proposals and provide recommendations for actions.	90 days after receipt of each proposal.
III-4	Define areas of responsibilities for TSC and AE/CM contractors.	Cancelled.
III-5	Prepare draft Scope of Work for TSC.	Completed 5/7/80.
III-6	Prepare draft Scope of Work for AE/CM contractor.	First draft 7/31/80. Final draft 8/29/80.

Item	Task/Sub-Task	Schedule
III-7	Analyze remedial actions operational requirements resulting from EPA standards, NRC licensing, NEPA impact analyses, and other sources; and prepare design criteria for AE/CM contractor.	Cancelled.
III-8	Identify applicable Federal, State and local standards, regulations & permit requirements.	Due 9/30/80.
III-9	Prepare Level Zero (overall project), Level One (Sites), and SNLA schedules.	(1) Preliminary Level Zero schedule 6/16/80. (2) Level One schedules 6/6/80. (3) Level Zero and Level One schedule revisions as required. (4) SNLA schedule 6/6/80.
III-10	Develop preliminary project TEC and individual preliminary TEC's for the sites.	Preliminary project TEC (including sites, off-site properties, NEPA activities, technology and technical support) 10/1/80.
III-11	Provide support for preparation of project status and technical reports and preparation of visual aids for presentations.	Continuing activity.
III-12	Provide support for public participation and information programs; including preparation of UMTRA Fact Sheets, UMTRA information pamphlet, Site Data books, and State Information books.	Continuing activity.
III-13	Develop and manage a capability for acquiring site radiological and environmental data to be used in planning, analyzing environmental impacts, design and performance of remedial actions, and audit of completed remedial actions.	Continuing activity.