

STRATEGIC PLAN FOR THE LONDON ROAD FACILITY

Submitted by:

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INTRODUCTION

Advanced Medical Systems, Inc. (AMS) manufactured and fabricated sealed sources of ^{60}Co for teletherapy and radiography machines. Under the provisions of U. S. Nuclear Regulatory Commission (USNRC) license No. 34-19089-01, and as of the date of this report, AMS possesses 56,269 curies of ^{60}Co , and 2,200 kilograms of depleted uranium (nickel plated) for use as shielding material.¹ Included are approximately 40 curies of radioactive material in a potentially dispersible form. This material, which consists primarily of dry solid waste, carbon granules and ion exchange resins, is stored in sealed 55-gallon drums or B-25 (steel) boxes. The types and quantities of all licensed materials currently in the possession of AMS are shown in Table 1.

As part of its license compliance efforts, AMS is faced with completing a number of tasks ranging from license renewal efforts to significant reductions in the existing radionuclide inventory. Timely completion of these activities is critical since they will ultimately result in streamlined routine operations, recovery of needed building/facility capabilities, and reduced regulatory demands on the operating staff.

However, due to limited personnel and financial resources, it is not possible for AMS to complete all of the outstanding activities in a single campaign. Therefore, to avoid unnecessary and negative financial impacts on the company, yet ensure steady and well-managed progress toward completion, the activities were prioritized based upon an activity's ability to improve the implementability of other activities, AMS's ability to fund the activity in the near-, intermediate- and long-term, and on the cost/benefit associated with the activity's timely completion. Table 2 shows the listing of the outstanding activities, along with their priorities (e.g., high priority, intermediate priority, and lower priority).²

A number of additional activities not shown in Table 2 will run concurrent with the prioritized activities. These include audit/assessment of the radiation protection program, upgrade of standard operating procedures, improvements in housekeeping, and attempts to increase community relations.

The remainder of this report contains additional discussion on each of the outstanding activities. Included is a brief discussion of the AMS strategy for each activity, the plan of action for completing the activity, a description of the current status (as of the date of this report) and an implementation schedule, where appropriate.

¹ There is negligible radiological hazard associated with the depleted uranium inventory. Therefore, it is not addressed further in this report.

² In general, high priority items are scheduled for completion within the next year, intermediate priority items within the next one to three years, and lower priority items within the next three to five years.

- 1 Over the intermediate and long term, as actions are completed and as the scope/approach of
- 2 specific activities (subitems) become solidified, the individual action plans will be expanded and
- 3 specific dates will be entered in the implementation schedules. Therefore, this report will be
- 4 revised on a quarterly basis and numbered revisions will be issued.

HIGH PRIORITY ACTIONS

Complete the Remediation Report

In late 1994, the Northeast Ohio Regional Sewer District (NEORS) intentionally isolated AMS access to regional sewage treatment system. This action rendered the facility drainage system non-functional, increased the hydrostatic pressure on the foundation structure, and caused groundwater to enter the basement of the AMS facility.

After AMS made timely notification to the USNRC about the deteriorating conditions at the building, AMS initiated action to drain the basement, remove the ^{60}Co from the water in the basement, remediate the foundation drainage system, isolate the residual radioactivity in the manhole and sewer line exiting the facility to the London Road Interceptor, and remediate the residual radioactivity in the London Road interceptor.³

One commitment made to the USNRC as part of the remediation project was to provide a final report that contains a description of the events that led to the site conditions, a review of the remedial actions implemented and their results, and a summary of all data acquired during the process.

Since all remedial activities are not yet complete, the final remediation report is still being compiled. Outstanding items are disposition of water in the collapsible storage tanks, disposition of contaminated solids (e.g., soils and water treatment media), implementation of the long-range surveillance plan for residual radioactivity that exists outside of the AMS building (e.g., in the abandoned footer drains and lateral connection from the building to the London Road Interceptor), disposition of water in the WHUT Room, and remediation of the London Road Interceptor.

In regard to the residual water in the WHUT Room, AMS is investigating the use of a stabilizing agent known as STERGO™. This product is a solid granular, cross-linked polymer that rapidly absorbs and retains large quantities of aqueous-based liquids. It is being considered because it is non-toxic, will hold from 12 to 40 times its weight in aqueous solutions, and testing indicates that its capacity to retain liquids at high dose rates and large integrated doses is good. AMS's intent is to inject STERGO™ directly into the WHUT Room through the existing access holes where it will absorb residual liquids. The ventilation in the area then will be increased to facilitate slow evaporation. However, even after full de-hydration, STERGO™ does not lose its capacity to re-absorb moisture. Therefore, should there be future incursions of water into the WHUT Room, its outward migration will be prevented. AMS is awaiting the vendor's final testing of the holding capacity of STERGO™ under conditions of very high integrated exposures before proceeding further. The testing results are due in early February of 1996.

³ As of the date of this report, the NEORS has not permitted AMS access to the London Road Interceptor. AMS's ability to complete the remediation is beyond its control.

In regard to the contaminated solids from the excavation (rock, soil) that exist outside the AMS facility, a structure is being built to secure and house them. The lined wooden structure will be built on the south west quadrant of the property, approximately 200 feet from the building. Once constructed, the solids will be transferred to the structure. The structure and its environs will be posted pursuant to RSP-011, "Posting and Labeling", and will be included in the quarterly radiological surveillance program pursuant to RSP-008, "Instrumentation and Surveillance".

In regard to the long-range surveillance plan for residual radioactivity, AMS submitted the plan to the USNRC on September 5, 1995. The USNRC issued a request for additional information on December 7, 1995. AMS forwarded responses to that request on December 14, 1995. To date, USNRC approval of the plan, as modified, has not been received.

Once all of the actions associated with the water treatment and sewer remediation project are complete, the remediation report will be finalized and submitted to the USNRC. However, for reasons that are beyond AMS's control, final implementation of the surveillance plan and remediation of the London Road Interceptor may be delayed significantly. Therefore, AMS may elect to submit the Remediation Report in advance and exclusive of these items. Table 3 shows the action plan for this task.

License Renewal Application

In early 1995, AMS submitted an application to renew its USNRC license under the provisions of timely renewal. After initial USNRC review of the application, a letter of deficiency was issued and additional information was requested. Subsequently, an in-house review of the application, in light of the short- and long-range plan of AMS, was completed. This review confirmed that the application was indeed cumbersome and permitted AMS little flexibility in achieving its intermediate- and long-term goals. Therefore, a significantly revised application was submitted on October 30, 1995. To date, AMS has received no response from the USNRC and continues to operate under the provisions of the existing license. Table 3 shows the action plan for this task.

Emergency Plan

As part of license renewal efforts, an emergency plan was submitted to the USNRC for review and comment. On June 7, 1995, after initial USNRC review of the Plan, a letter of deficiency was issued and additional information was requested. Because the magnitude of deficiencies was significant, a revised Plan was submitted on September 22, 1995. This revision was consistent with the guidance contained in USNRC Regulatory Guide 3.67 (1992), "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities". To date, AMS has received no response from the USNRC in regard to this plan.⁴ Table 3 contains the action plan for this task.

⁴ Comments have been received, however, from the Ohio Environmental Protection Agency, the Ohio Department of Health, and the Cuyahoga Emergency Assistance Center.

Decommissioning Funding Plan

As part of the recent license renewal efforts, a decommissioning funding plan was submitted to the USNRC for review and comment. On August 17, 1995, after initial USNRC review of the Plan, a letter of deficiency was issued and additional information was requested. Specifically, the USNRC indicated that the January 1995 cost estimate and site characterization submitted by AMS "are no longer valid". However, the January 1995 estimate was based upon a "decontaminate and release" decommissioning option, which is not suitable for a facility like AMS where the primary radionuclide of concern has a radiological half life of only five years. Therefore, AMS prepared a Conceptual Decommissioning Plan for the facility pursuant to 10 CFR 40.46(d) that is based upon a "safe storage" decommissioning option.⁵

The Plan, which was submitted to the USNRC on October 20, 1995, describes the decommissioning objective for the facility and its basis, a description of the items to be decommissioned, the proposed decommissioning methodology, an ALARA analysis to support the proposed methodology, a cost estimate (1995 costs) for implementing the methodology, and a review schedule for ensuring the Plan's continued applicability for the duration of License No. 34-19089-01. Once approved by the USNRC, the Plan will be funded by the corporation and reviewed for continued applicability on a planned and periodic basis. Table 3 contains the action plan for this task.

Train First Responders in Emergency Plan Provisions

As part of its emergency response requirements, AMS must provide annual radiation safety training for first responders. Pursuant to the revised Emergency Plan, this training must include a review of items of mutual interest, instruction in emergency procedures, radiation protection guidelines, and the responder's anticipated role in an emergency. During the training session, the emergency response team activation scheme, notification procedures, and overall response coordination process will be reviewed.

Within 60 days after USNRC approval of the revised Emergency Plan, a training session for first responders will be scheduled. After training is complete, agency attendance will be documented and letters of agreement will be updated, as necessary. The training sessions will be scheduled annually thereafter. Table 3 contains the action plan for this task.

Stage Emergency Exercise and Perform Critique

As part of its emergency response requirements, and in order to maintain emergency preparedness, AMS must conduct an emergency exercise on a planned and periodic basis. Within 60 days after all first responders have received initial training in the provisions of the AMS Emergency Plan, the emergency exercise will be scheduled and staged.

Pursuant to the revised Emergency Plan, the exercise will include one or more of the accident scenarios postulated for the facility, and will involve off-site agencies that have provided letter

⁵ Pending its concurrence with the Conceptual Decommissioning Plan, the USNRC did, in a January 8, 1996 letter to AMS, accept AMS's decommissioning financial assurance submittal based upon the January, 1995 cost estimate.

1 agreements for support services (e.g., first responders). The scenario will not be known in
2 advance by exercise participants, and a non-participating observer will provide an evaluation of
3 the effort, along with recommendations for improvement.
4

5 The critique of the exercise will be used as a basis for modifying the Emergency Plan or for
6 supplementing the training of off-site agencies. Deficiencies identified during critiques will be
7 corrected and closure will be documented. As necessary, changes to the Emergency Plan, based
8 upon the findings of the critique, will be implemented. Table 3 contains the action plan for this
9 task.
10

INTERMEDIATE PRIORITY ACTIONS

Recover Hot Cell Capabilities

In order to decontaminate, leak test, package and ship sealed sources of ^{60}Co from the AMS facility, a functional hot cell is needed. Currently, the Hot Cell contains significant residual removable radioactivity. Consequently, cross-contamination of items that enter the Hot Cell is a concern. Therefore, AMS intended to recover sufficient Hot Cell capabilities to support inventory reduction efforts.

Shortly after issue of the initial version of this Strategic Plan, the Hot Cell capabilities that were needed to facilitate inventory reduction were evaluated. From this evaluation, it was determined that improved lighting and construction of a source transfer mechanism were the only items necessary to support initial inventory reduction. These items were implemented, a successful "trial run" of the system occurred on December 19, 1995, and the system became fully operational on December 27, 1995. Table 3 contains the action plan for this task.

Return NPI Sources

There are currently 35 sealed sources in the AMS inventory that belong to Neutron Products Inc. (NPI). As part of on-going operations, AMS purchases sources from NPI for delivery to a customer. When the shipping cask is sent to NPI, one of the sources in the AMS permanent inventory is enclosed, thereby reducing the inventory. AMS intends to escalate the return of all of the remaining sources now that Hot Cell capability has been recovered.

For this task, AMS evaluates whether there is residual radioactivity on the remaining NPI sources, decontaminates and leak tests the sources as necessary, packages the sources, and ships them to NPI. As sources leave the London Road facility, the inventory log is debited appropriately. Since the initial version of this Strategic Plan was issued, a total of two (2) sources have been returned to NPI, and two (2) additional sources are staged for shipment. Table 3 contains the action plan for this task.

Identify a Market for Remaining Bulk Material

There are approximately 11,750 curies of bulk ^{60}Co metal in the AMS inventory. AMS is attempting to identify a domestic or foreign market for this material, prepare and submit whatever permit or license applications are necessary, package the material, and ship it to a buyer.

AMS has initiated discussions with a variety of source distribution firms, with brokers, and with public health departments in a number of countries. Possible foreign uses being pursued include medical (therapy), industrial (gauges and sensors), health (food and medical products irradiation), and education (universities). Once one or more markets are identified, permitting requirements will be determined, applications will be filed, and materials will be packaged/shipped. Table 3 contains the action plan for this task.

LOWER PRIORITY ACTIONS

Remove Plug in the Hot Cell

An estimated 4,000 curies of ^{60}Co in the form of sealed sources are located in a storage well in the Hot Cell. Because the well plug has become lodged in the well, these sources cannot be removed and included in the inventory reduction efforts. Therefore, AMS intends to dislodge the plug.

A methodology for dislodging the plug has been determined, and a contract for services has been let. Once the decision is made to proceed and the work plan and Radiation Work Permit have been completed, equipment and personnel will be staged, "dry runs" will be completed, and the plug will be removed. Table 3 contains the action plan for this task.

Decontaminate the Hot Cell

After the plug removal project is complete, significant residual radioactivity will likely exist within the Hot Cell. In order to ensure its continued usefulness, AMS intends to decontaminate the Hot Cell to levels necessary to support planned future operations.

The first step in the process will be determination of the methodology for Hot Cell decontamination. Once complete, the work plan will be prepared, outside services, if necessary, will be contracted, and the project will begin. Table 3 shows the action plan for this task.

Complete/Confirm the Physical Inventory and Transfer/Ship Remaining Sources

After removal of the plug, AMS will be able to confirm the physical inventory of licensable radioactive material present at the London Road facility. (AMS is obliged, by License Condition 14, to complete a physical inventory of all sources in its custody. In light of the low priority associated with this task, an amendment to License No. 34-19089-01 to postpone the inventory requirement may be necessary, depending upon the timeliness of action on AMS's recent license renewal application.) AMS then intends to identify a market for the remaining sources, evaluate their levels of residual radioactivity, decontaminate and leak test the sources as necessary, package the sources, and ship them to the purchaser. As sources leave the London Road facility, the inventory log will be debited appropriately. Table 3 contains the action plan for this task.

Disposition of Solid Waste at the Facility

As shown in Table 1, there is a significant quantity of solid waste at the AMS facility. These materials are stored either within the AMS facility, or in a secured storage location within the fenced portion of the property. The disposition of this solid waste is dependent upon the decommissioning methodology selected for the facility, and upon the availability/cost of off-site disposal at the time of project initiation.

AMS intends to evaluate disposition options and select/implement the one that results in the lowest personnel exposures and disposal costs. Justification for the preferred option will be prepared and presented. Table 3 contains the action plan for this task.

Disposition of Treated Water in Collapsible Storage Tanks

As part of the 1995 sewer remediation project, approximately 100,000 gallons of water was treated by the methodology of sub-micron filtration and reverse osmosis in order to reduce its radionuclide content to below drinking water standards. There are approximately 40 microcuries of ^{60}Co in the water, which is currently stored in collapsible storage tanks at the London Road facility. The solubility of the residual radioactivity was confirmed using American Public Health Association's Method 7110 "Gross Alpha and Gross Beta Radioactivity (Total, Suspended, and Dissolved)" from Standard Methods for Examination of Water and Wastewater.

AMS requested and received permission from the U. S. Environmental Protection Agency (USEPA) and the USNRC to evaporate this water. However, due to delays and difficulties in implementing the treatment process that were beyond AMS's control, more than four times the original amount of water had to be treated to reduce its concentration of radioactive cobalt at a cost that went well-beyond the original projection. In light of the magnitude of these unbudgeted expenses, the evaporation option became significantly more costly. Therefore, AMS is pursuing other options for disposing of the water.

Since the treated water meets the USEPA's criteria for man-made radionuclides in drinking water pursuant to 40 CFR 141, and since it contains no other hazardous substances, its presence at the AMS facility poses no radiological risk. Therefore, there is no urgency to ensure its final disposition. Nonetheless, AMS will pursue a direct discharge option until such time as it becomes patently unattainable. At that time, the evaporation option will be re-visited in light of available financial resources. Table 3 contains the action plan for this task.

ON-GOING ACTIONS

Audit/Assessment of Radiation Protection Program

In light of changing operational issues, pending licensing activity, and the desire to "streamline" compliance efforts, AMS intends to perform a series of audits of its radiation protection program in order to compare AMS's performance to that required and/or recommended by existing license/permit provisions, U. S. Nuclear Regulatory Commission regulations, and standard industry practices (e.g., USNRC Regulatory Guides, ANSI, ASME and ASTM Standards, ICRP Publications, NCRP Publications). The audits will be performed by AMS personnel and consultants to AMS. They will involve initial review of applicable operating procedures, quality assurance procedures, and other pertinent documentation related to a particular performance issue.⁶ The initial document review is performed in order to identify possible areas of failure or liability, and to derive an efficient schedule for on-site assessments. While on site, AMS compliance with existing procedures will be determined and areas of inefficiency or poor function, as compared to industry standards and practices, will be identified.

While the results of the audits are intended to be used for demonstrating compliance and/or to guide future program modifications or improvements, any findings of significant regulatory non-compliance or conditions of imminent hazard will be immediately reported to and addressed by the RSO. The audit schedule for 1996 will be set during the Quarter 1, 1996 Radiation Safety Committee meeting.

Upgrade of Standard Operating Procedures

In response to audit findings, and in light of changing operational demands and licensing activities, the current collection of standard operating procedures (ISPs) are being reviewed for continued applicability. Wherever possible, multiple procedures that address a single topic will be combined, out-dated procedures will be revised, and obsolete procedures will be deleted. Consistency between procedures will be confirmed and compliance with the requirements of the AMS Radiation Protection Program Plan will be assured. Since October 10, 1995, the following new/revised procedures have been developed and approved by the Radiation Safety Committee:

- RSP-001, Radiation Protection Program Plan
- RSP-002, Definitions
- RSP-003, Control of Radiation Safety Procedures

⁶ The following programmatic issues will be audited on a planned and periodic basis: Organization and Administration; Facilities and Equipment; Training in Radiation Protection; Radiation Exposure Control; ALARA Program; Contamination Control; Instrumentation and Surveillance; Posting and Labeling; Receipt and Control of Radioactive Material; Packaging and Transportation of Radioactive Materials; Control of Radioactive Waste; Radiation Protection Records; Documentation; Emergency Response and Notifications; and Quality Assurance in Radiological Protection.

- RSP-004, Radiation Protection Records
- RSP-005, ALARA Program
- RSP-007, Training in Radiation Protection
- RSP-009, Contamination Control
- RSP-011, Radiological Areas and Posting
- RSP-012, Control of Work
- RSP-014, Receipt, Handling, and Identification of Radioactive Materials
- RSP-015, Packaging and Transportation of Radioactive Materials
- RSP-016, Emergency Response and Notifications
- RSP-017, Stop Work Authority

Housekeeping Improvements

Currently, there are only three permanent employees at the London Road facility. Therefore, only a small fraction of the available space is used for routine operations, office areas and storage. However, AMS has instituted improvements in housekeeping in the useable areas of the facility. Additional improvements will be implemented on an on-going basis. Since October 10, 1995, the following has taken place:

- The stairwell to the basement has been fully decontaminated and released for unrestricted use.
- The temporary restricted area in the warehouse that housed the water treatment equipment has been cleared and released for unrestricted use.
- Two (2) of the three (3) process batch tanks used for the water treatment project have been decontaminated.

Community Relations

In the past, issues or activities at AMS that required state, federal and local approvals were hampered due to lack of knowledge of AMS operations and/or an understanding of the fundamental principles of radiation and radioactivity on the part of decision-makers. In an effort to streamline future decision-making, AMS intends to mount a community relations program to acquaint various officials and members of the print and broadcast media with the AMS function, its capabilities, and its short-, intermediate-, and long-range plans. This will be accomplished

through briefings, tours, and development/publication of hand-out materials and brochures. Since October 10, 1995, the following has taken place:

- A briefing with local print media representatives was held on October 31, 1995, which resulted in publication of an article that was favorable to AMS in the local press.
- Two briefings with City of Cleveland officials were arranged and invitations were issued. The briefing dates were August 29, 1995 and October 31, 1995. Although AMS received acceptances from the office of the Mayor and other individuals, no officials appeared for either briefing.
- A Cleveland City Council member (R. Coates) visited the London Road facility on November 22, 1995.

Reconnection of Sewer System to London Road Interceptor

Currently, the London Road facility does not have a direct connection to the regional sewer system. There are no sanitary discharges from the building, the roof drains discharge onto the ground surface, and all groundwater is pumped from a manhole on the property into a storage tank. Once the tank is full, the water is sampled and discharged. For operational reasons, and because current discharge paths do not comply with local building codes, AMS continues to pursue re-connection of all drainage paths to the London Road Interceptor through legal channels.

TABLES

Table 1 - Current Cobalt-60 Inventory

Item	Form	Material Description	Estimated Activity (Ci)
Licensed Material	Solid	Bulk Metal and Sealed Sources	56186
Packaged waste	Solid	Materials contained in high-level waste storage, LSA boxes and drums in the basement of the facility.	29
Packaged waste	Solid	Solid waste generated during the water treatment project.	0.4
Unpackaged waste	Solid/sludge	Materials contained in WHUT Room	53
Surface radioactivity	Solid	Uncharacterized surface activity in the restricted areas of the facility	1
TOTALS			56269

Table 2 - Action Plan Summary⁷

High Priority Activity	Intermediate Priority Activity	Lower Priority Activity
Submit the Remediation Report for the water treatment and sewer remediation project	Recover the capabilities of the Hot Cell.	Remove the plug in the Hot Cell and extract the remaining sources
Finalize site emergency plan.	Reduce the inventory of sealed sources and bulk cobalt.	Decontaminate the Hot Cell.
Submit conceptual decommissioning plan		Complete the physical inventory of sources.
Finalize decommissioning funding plan.		Ship out remaining sources
Finalize license renewal activities.		Address solid waste issues.
Implement training requirements of the approved site emergency plan (e.g., train first responders and perform emergency exercise and critique)		Pursue disposition of treated water that currently exists in the collapsible storage tanks.

⁷ Shaded areas denote closure.

Table 3 - Action Plan for Each Task⁸

Primary Action Item	Sub-Item	Scheduled Start Date	Scheduled End Date	Current Status
Complete Remediation Report	Determine remedial alternative for the WHUT Room	8/29/95	10/3/95	Closed. Solidification has been identified as the preferred alternative.
	Determine storage methodology for contaminated solids	8/29/95	10/3/95	Closed. Construction of an above-ground storage container has been identified as the preferred alternative.
	Stabilize liquids that currently exist in the WHUT Room	10/3/95	3/1/96	Open
	Implement storage option for contaminated solids	10/3/95	1/31/96	Open
	Finalize and submit remediation report	8/1/95	TBD	Pending resolution of AMS/NEORSR litigation
	Begin direct discharge of ground and surface water from the AMS foundation drainage system.	1/15/96	TBD	Pending resolution of AMS/NEORSR litigation and reconnection of sewer system
License Renewal Application	Submit revised application	9/1/95	10/31/95	Closed. Application mailed to USNRC on 10/31/95
	Begin operations under provisions of renewed license.	1/1/96	TBD	Pending USNRC action on renewal application
Emergency Plan	Submit revised Emergency Plan to the USNRC	8/15/95	9/30/95	Closed. Plan mailed to USNRC and first responders on 9/26/95.
	Begin operations under provisions of approved plan.	1/1/96	TBD	Pending USNRC approval of Emergency Plan.
Decommissioning Funding Plan	Submit Conceptual Decommissioning Plan	9/8/95	10/23/95	Closed. Plan mailed to USNRC on 10/20/95.
	Submit Decommissioning Funding Plan	10/21/95	TBD	Pending USNRC approval of Conceptual Decommissioning Plan
	Scheduled review of Conceptual Decommissioning Plan and Decommissioning Funding Plan for continued applicability	TBD	One (1) year after USNRC approval	Pending USNRC approval of Decommissioning Funding Plan
Recover Hot Cell Capabilities	Determine Hot Cell requirements for inventory reduction.	8/29/95	10/27/95	Closed.
	Specify Hot Cell recovery actions	11/1/95	12/1/95	Closed

⁸ As actions are completed and as the scope/approach of specific activities (subitems) become solidified, the individual action plans will be expanded and specific dates will be entered in the implementation schedules. Changes will be noted in future revisions of this Plan. Shaded entries denote closure.

Primary Action Item	Sub-Item	Scheduled Start Date	Scheduled End Date	Current Status
	Implement recovery actions	12/1/95	1/1/95	Closed
Return NPI Sources	Evaluate residual radioactivity on NPI Sources	9/11/95	9/15/95	Closed.
	Determine decontamination methodology	9/25/95	11/24/95	Closed.
	Perform "trial run" of decontamination methodology.	11/1/95	12/20/95	Closed
	Decontaminate and leak test sources	12/20/95	1/1/97	Open
	Package and ship sources	12/20/95	1/1/97	Open
Identify a Market for Remaining Bulk Cobalt	Identify domestic market possibilities	8/1/95	12/31/96	Open
	Identify foreign market possibilities	11/1/95	12/31/96	Open
	Determine and implement permitting requirements	12/31/96	6/1/97	Unscheduled
	Complete contracts with purchasers	TBD	TBD	Unscheduled
	Package and ship sources	TBD	TBD	Unscheduled
Train First Responders in Emergency Plan Provisions	Receive USNRC approval of the Emergency Plan	10/20/95	TBD	Pending response from USNRC
	Schedule initial first responder training session	10 days after USNRC approval	TBD	Unscheduled pending USNRC approval of the Emergency Plan
	Complete training and documentation	60 days after USNRC approval	TBD	Unscheduled
	Obtain updated letters of agreement, as necessary	TBD	TBD	Unscheduled
	Schedule refresher training	TBD	TBD	Unscheduled
Implement an Emergency Exercise and Critique	Schedule emergency exercise	60 days after completion of training	TBD	Unscheduled pending completion of first-responder training
	Prepare scenario	TBD	TBD	Partially complete
	Contract outside observer	TBD	TBD	List of qualified personnel prepared.
	Initiate emergency exercise	TBD	TBD	Unscheduled
	Generate critique report	TBD	TBD	Unscheduled
	Modify Emergency Plan in light of critique findings	TBD	TBD	Unscheduled

Primary Action Item	Sub-Item	Scheduled Start Date	Scheduled End Date	Current Status
Remove Plug in Hot Cell	Determine methodology for plug removal	7/1/95	8/1/95	Closed
	Generate specifications plan for plug removal	7/1/95	8/1/95	Closed
	Issue Request for Quotation for plug removal	7/1/95	8/1/95	Closed
	Review bids and issue contract for services	7/1/95	8/1/95	Closed
	Prepare work plan and Radiation Work Permit	TBD	TBD	Unscheduled
	Mobilize personnel and equipment	TBD	TBD	Unscheduled
	Train personnel in provisions of work plan	TBD	TBD	Unscheduled
	Perform dress rehearsals	TBD	TBD	Unscheduled
	Remove plug	TBD	TBD	Unscheduled
Decontaminate the Hot Cell	Specify Hot Cell decontamination methodology and clean-up criteria	TBD	TBD	Unscheduled pending plug removal
	Generate work plan for decontamination activities	TBD	TBD	Unscheduled
	Contract decontamination services, as necessary	TBD	TBD	Unscheduled
	Mobilize equipment and personnel	TBD	TBD	Unscheduled
	Complete decontamination	TBD	TBD	Unscheduled
Complete/Confirm Inventory and Transfer/Ship Remaining Sources	Request amendment to License Condition 14 to postpone the physical inventory requirement pending plug removal.	5/1/98	6/30/98	Open pending action by USNRC on October, 1995 license renewal application
	Confirm physical inventory of remaining sealed sources	TBD	TBD	Unscheduled pending final decontamination of Hot Cell
	Evaluate residual radioactivity on remaining sources	TBD	TBD	Unscheduled
	Decontaminate and leak test sources	TBD	TBD	Unscheduled
	Obtain shipping cask	TBD	TBD	Unscheduled
	Package and ship sources	TBD	TBD	Unscheduled
Disposition of Solid Waste at the Facility	Evaluate disposition options in light of Conceptual Decommissioning Plan	10/1/95	TBD	Pending USNRC approval of Conceptual Decommissioning Plan
	Select the preferred option based upon an ALARA analysis.	TBD	TBD	Unscheduled
	Characterize the materials.	TBD	TBD	Unscheduled
	Prepare necessary permits and licenses	TBD	TBD	Unscheduled
	Implement the preferred option	TBD	TBD	Unscheduled

Primary Action Item	Sub-Item	Scheduled Start Date	Scheduled End Date	Current Status
Disposition of Treated Water in Collapsible Storage Tanks	Identify disposition options.	8/1/95	TBD	Open
	Prepare necessary permits and licenses	TBD	TBD	Unscheduled
	Implement preferred disposition option.	TBD	TBD	Unscheduled

ACTION LIST

1. The licensee shall conduct an on-site inspection of the condition of the structural integrity of the building facilities, or portions thereof, that house, or could interact with radioactive source material, radioactive stored wastes or radioactive contamination. Documentation of the inspection findings shall be provided. An evaluation shall be performed, based on the inspection findings, to assess the capability of the facility to continue to provide protective confinement of the radioactive materials over the intended future utilization period of the facility. Any necessary corrective actions shall be identified along with the proposed repair or rehabilitation method and the schedule for action. At the current time, NRC has identified at least two areas that the inspection and evaluation should include. These are the precast concrete roof panels that in several areas exhibit corrosion products on the visible surface, and the second floor concrete slab in the area where it forms the ceiling of the hallway in front of the hot cell and the radiography room and exhibits the effects of previous fluid flows through the slab from above. The results of these actions shall be submitted to NRC by October 1, 1996.
2. The licensee shall restore the integrity of the cracked load-bearing masonry wall in the southeast corner of the 1958 building after determining the depth, extent of the cracking and the necessary repairs. Associated distress that could limit the ability of the facility to continue to provide protective confinement of the radioactive materials over the intended future utilization period of the facility will also be identified and needed corrective actions taken. The repairs shall be completed by September 1, 1997.
3. The licensee shall restore the integrity of the north bay of the east masonry filler/curtain wall of the 1958 building after determining the extent of the distressed area. Associated distress that could lead to degradation of the ability of the facility to continue to provide protective confinement of the radioactive materials over the intended utilization period of the facility by the introduction of moisture and other waterborne contaminants shall also be identified and needed corrective actions taken. The repairs shall be completed by September 1, 1997.
4. The licensee shall prepare a written program for the inspection and evaluation of the building facility to perform its defined intended functions over the future period of utilization. The program shall incorporate a frequency of inspection and evaluation activities of not less than one each ten years or after major loading events. The program shall be submitted to NRC by December 31, 1997.

FILE: ACTION.Lis

c/7



Advanced Medical Systems, Inc.

1020 London Rd
Cleveland, Ohio 44110
216-682-3270

April 19, 1996

Mr. Geoffrey Wright
United States Nuclear Regulatory Commission
801 Warrenville Road
Lisle, Illinois 60523-4351

Re: Approval of Isotope Procedures

Dear Mr. Wright:

On February 8, 1996, Carol D. Berger, a technical consultant to Advanced Medical Systems, Inc. (AMS), forwarded copies of the following procedures to Mr. Michael Weber: RSP-018, "Operation of the Gamma Spectrometer" and RSP-019, "Assessment of Radioactivity in Water Samples". These procedures, which were approved by the AMS Radiation Safety Committee, were submitted pursuant to the USNRC's request of February 7, 1996 and as additional information for Amendment 40, Control No. 399566. However, as of the date of this letter, we have received no response from you in this regard.¹

Because the AMS facility on London Road is not directly connected to the regional sewage treatment system, the water that accumulates around the foundation of the building must be pumped into tanks and sampled prior to discharge. Since AMS must conduct its program in accordance with procedures that have been approved by the USNRC, your approval of the manner in which we test and discharge the foundation water is necessary.

In anticipation of your positive response, we are assuming that the procedural methods described in RSP-018 and RSP-019 are acceptable. Therefore, we are conducting our program as described therein. Please call me at (216) 692-3270 if you have any questions or if I can assist you in any way in expediting your review. We are looking forward to prompt USNRC action on this important request.

Sincerely,

Robert Meschter, RSO

cc: D. Cesar
D. A. Miller, Esq. - Survale & Miller
C. D. Berger, C.H.P. - IEM

¹ A copy of each procedure was also submitted to Mr. Kevin Mull on February 13, 1996 for his use in reviewing our most recent license renewal application.

Advanced Medical Systems, Inc.

PAGE 1 OF 2

Fax Cover Sheet

Date 1/19/96

1020 Lorain Road

Cleveland, Ohio 44110

(216) 692-3270

Fax (216) 692-3269

ATTN: MR. G. WRIGHT

FAX NO.:

COMPANY:

FROM: Bornescher

EXT.

SUBJECT:

MESSAGE

see Attached - ORIGINAL via U.S.
MAIL.

C/8