

June 25, 1996

MEMORANDUM TO: Materials Files

FROM: Michael F. Weber, Reviewer

THRU: John R. Madera, Chief, Nuclear Materials Licensing Branch

SUBJECT: ADVANCED MEDICAL SYSTEMS, INC. (AMS)
LICENSE NO. 34-19089-01
DOCKET NO. 030-16055

On June 25, 1996, a telephone conference was held between representatives from NRC Headquarters, NRC Region III, and AMS to discuss AMS' proposal to dispose of its cobalt-60 sources and solid waste. A brief summary of the meeting follows.

AMS representatives indicated that in their June 10, 1996 report entitled "Building Recovery Project," they were proposing that NRC release decommissioning funds in order to honor the invoices for the disposal costs as they became due. NRC representatives indicated that they preferred that AMS amend its letter of credit such that the reduced collateral would pay the disposal costs. AMS would also request a license amendment to: 1) receive authorization to dispose of the sources and solid waste, 2) commit that the funds would only be used to dispose of the sources and solid waste, 3) commit that any funds not spent on the disposal of sources and solid waste would be returned as collateral for the letter of credit, and 4) provide a date before which a new decommissioning funding plan, with a cost estimate for the facility without the disposed sources and solid waste, would be submitted to NRC. AMS representatives agreed with NRC's request.

NRC representatives also indicated that they agreed in principle with the entire "Building Recovery Project"; however, at this time they were only considering in detail the disposal of sources and wastes. AMS representatives indicated that this was understood.

AMS representatives indicated that they would meet with their bank and send an amendment request to NRC within a week. They also indicated that at a future date they would request a change in some waste handling procedures currently tied down in the license.

List of attendees:

NRC Headquarters
George Pangburn - NMSS
Timothy Johnson - NMSS
Louis Bykowski - NMSS
Marian Zabler - OGC
Steven Lewis - OGC

NRC Region III
Geoffrey Wright - DNMS
John Madera - DNMS
Kevin Null - DNMS
Michael Weber - DNMS

AMS
David Cesar - Vice President
Robert Meschter - Radiation Safety Officer
Steven Haddock - Alternate Radiation Safety Officer
Dwight Miller - Attorney
Carol Berger - Contract Health Physicist
Alan Duff - Contract Health Physicist

ATTACHMENT 3

ADVANCED MEDICAL SYSTEMS, INC.			
INCIDENT/EVENT REPORT			
I/E Number <u>96-001</u>		Page <u>1</u> of <u>5</u>	
I/E Date: <u>6-17-96</u>		I/E Location: <u>NEW FRONT SEWER MANHOLE - LONDON RD</u>	
I/E Time: <u>0717</u>		Areas/Equipment Affected: <u>FOUNDATION DRAIN SYSTEM</u>	
I/E CLASSIFICATION		EVENT TYPE	
<input type="checkbox"/> Site Area Emergency	<input type="checkbox"/> Electrical Failure	<input type="checkbox"/> Injury to Personnel involving Contamination	
<input type="checkbox"/> Alert	<input checked="" type="checkbox"/> Water/Sewer Failure	<input type="checkbox"/> Natural Disaster	
<input checked="" type="checkbox"/> Unusual Event	<input type="checkbox"/> Security	<input type="checkbox"/> Fire	
<input type="checkbox"/> Incident	<input checked="" type="checkbox"/> Minor Spill or Release (on-site)	<input type="checkbox"/> Minor Release (off site)	
<input type="checkbox"/> Transportation Event	<input type="checkbox"/> Major Spill or Release (on-site)	<input type="checkbox"/> Major Release (off site)	
<input type="checkbox"/> Information Only	<input type="checkbox"/> Other (Describe)		
<input type="checkbox"/> Other			
EVENT DESCRIPTION			
<u>A 0700 RSO ARRIVED ON SITE TO DISCOVER CRACK</u> <u>WELLING FROM THE GROUND BETWEEN THE NEW</u> <u>SEWER MANHOLE COVER & THE FRONT WALK. RSO</u> <u>IMMEDIATELY ENTERS BUILDING, TURNS OFF SECURITY</u> <u>SYSTEM AND GOES DIRECTLY TO INSIDE FOUNDATION</u>			
NOTIFICATIONS			
<input checked="" type="checkbox"/> USNRC Region III	<input type="checkbox"/> University Hospital of Cleveland	<input type="checkbox"/> C ANT Security Services	<input checked="" type="checkbox"/> Other <u>AMS CORP</u>
<input type="checkbox"/> USNRC Operations Center	<input type="checkbox"/> Ohio Emergency Management Agency	<input checked="" type="checkbox"/> EMTA	<input checked="" type="checkbox"/> Other <u>AMS LEGAL</u>
<input type="checkbox"/> Cleveland Fire Department	<input type="checkbox"/> Cleveland Emergency Medical Services	<input type="checkbox"/> Ohio Department of Health	<input type="checkbox"/> Other
<input type="checkbox"/> Cleveland Police Department	<input type="checkbox"/> Ohio State Highway Patrol	<input type="checkbox"/> Ohio Environmental Protection Agency	<input type="checkbox"/> Other
<input type="checkbox"/> CRITIQUE HELD	IF YES, DATE/TIME:	<input type="checkbox"/> ROOT CAUSE ANALYSIS REQUIRED	
APPARENT CAUSE: <u>UNKNOWN, LEAK</u>		IMMEDIATE CORRECTIVE ACTIONS: <u>SEE</u>	
<u>PIPC.</u>		<u>ATTACHED.</u>	

475

ATTACHMENT 3 (CONTINUED)

ADVANCED MEDICAL
SYSTEMS, INC.INCIDENT/EVENT REPORT
(Continued)

Page 2 of 3

ADDITIONAL INFORMATION/CORRECTIVE ACTIONS/COMMITMENTS

DRAIN HOLD THANKS AND DETERMINED THERE IS NO FLOW FROM THE FOUNDATION DRAIN SYSTEM. RSO THEN IMMEDIATELY INSPECTS OUTSIDE ON SOUTH END OF BUILDING. RSO RETURNS TO FRONT OF BUILDING AND OBSERVES THE WATER WELLING FROM THE GROUND HAD STOPPED & DRAINED AWAY. RSO PULLS MANHOLE COVER & OBSERVES WATER WELLING FROM THE GROUND AGAIN. AT 0717 RSO CALLS M. WEBER US NRC REGION III AND LEAVES A VOICE MAIL MESSAGE THAT THIS HAS DECLARED AN UNUSUAL EVENT @ 0717 (NO PHONE ATTENDANT WAS AVAILABLE PER THE RECORDED MESSAGE). SUBSEQUENT EVALUATION OF THE SITUATION SUGGESTED THAT THE DISCHARGE PIPE FROM THE SYSTEM OUTSIDE THE SEWER VAULT AND UNDERGROUND HAD RUPTURED AND THE WELLING OF WATER WAS FROM THE PUMPING ACTION OF THE SUMP PUMP INSIDE THE MAN HOLE. 0725 C. REED (AMS) ARRIVED AND IS INFORMED OF THE SITUATION. 0730 S. HADDICK (AMS) ARRIVES AND IS INFORMED OF THE SITUATION. THE SITUATION IS DISCUSSED & THE FOLLOWING

SIGNATURES

Prepared by: R. Kioschta R. Kioschta

Approved by (Vice President)

Approved by (RSO): R. Kioschta A-17-96

Approved by (Other, specify)

Long-term Corrective Action Plan Approved by:

ATTACHMENT 3 (CONTINUED)

ADVANCED MEDICAL
SYSTEMS, INC.INCIDENT/EVENT REPORT
(Continued)

Page 3 of 3

ADDITIONAL INFORMATION/CORRECTIVE ACTIONS/COMMITMENTS

ACTIONS TAKE PLACE 1) 1" HOSE FROM THE FOUNDATION DRAIN SYSTEM IS RE ROUTED FROM THE INSIDE TANK AREA, ACROSS THE WAREHOUSE & OUT THE OLD LOBBY FRONT DOOR TO THE SEWER MAN HOLE. AN EXISTING PORTABLE SUMP PUMP IS CONNECTED - INSERTED INTO THE MAN HOLE & TURNED ON. THE PORTABLE SUMP PUMP IS INADEQUATE TO OVERCOME THE HEAD. 2) PARALLEL TO THE ABOVE ACTIVITY THE BASEMENT WAS QUICKLY INSPECTED - NO WATER INCREASED INTO THE BASEMENT. 3) A SUITABLE PUMP WAS IDENTIFIED AVAILABLE FROM A LOCAL VENDOR AND PLACED ON ORDER TO BE OBTAINED IMMEDIATELY. SINCE THERE HAS BEEN NO RAIN FOR THE PAST 2 DAYS & SINCE THE FOUNDATION DRAIN WATER LEVEL WAS AT A MINIMUM DEPTH, THE RSO STOOD DOWN FROM THIS UNUSUAL OCCUR. AND NOTIFIED MR. K. E. CLER, US NRC, REGION III TO THAT FACT.

FOLLOW UP ACTIONS INCLUDE - INSTALL NEW TEMPORARY SUMP PUMP, EXCAVATE & REPAIR. RUPTURED UNDER GROUND DISCHARGE LINE.

SIGNATURES

Prepared by: R Meschick, R Meschick Approved by (Vice President):

Approved by (RSO) R Meschick 6-17-86 Approved by (Other, specify):

Long-term Corrective Action Plan Approved by:



Advanced Medical Systems, Inc.

1020 London Rd.
Cleveland, Ohio 44110
216-692-3270

June 25, 1996

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

Re: USNRC License No. 34-19089-01

Dear Mr. Wright:

On March 1, 1995 and March 20, 1995, Advanced Medical Systems, Inc. (AMS) submitted applications to amend the referenced license to permit release of ground/surface water that collects in the *remediated* underdrain system of the London Road facility. As of the date of this letter, USNRC authorization to proceed on this request has not yet been received.

Since the date of those applications, AMS has faced a series of extenuating circumstances that have increased the urgency for action. However, we recognize that considerable time has passed since then, and that some of the original descriptions and specifications contained in the 1995 applications are no longer applicable. The purpose of this letter is to reiterate our request to amend the referenced license to permit free discharge of water pumped from the foundation drainage system. Attached is a brief description of the regulatory action on this issue to date, a discussion of the reason for our request and its justification, and a description of the procedure we intend to follow when USNRC authorization to proceed is given.

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 asking for prompt USNRC action on this important issue.

Sincerely,

Robert Meschter, RSO

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

9174
JUL 02 1996

9608260278 7pp.

REQUEST TO DISCHARGE GROUND/SURFACE WATER FROM THE REMEDIATED SEWER SYSTEM

Purpose

As a result of technically-indefensible legal action taken by the Northeast Ohio Regional Sewer District (NEORS), the Advanced Medical Systems, Inc. (AMS) facility on London Road does not have a direct connection between the building and the regional sewer system for the discharge of sanitary waste, rain water from the building's roof drains or the storm water that surrounds the building. Even after completion of an extensive sewer remediation project that involved installation of a new foundation drainage system and a new manhole, the free-flow of water away from the building is still not possible for a variety of legal and regulatory reasons.

As of the date of this letter, AMS is bound by court order and USNRC license requirements to pump water from the foundation drains into hold-up tanks, sample the tanks for the presence of radioactivity, notify the NEORS of pending discharge of each tank, and await the results of a NEORS confirmatory sampling effort prior to discharge. As a result, a major portion of the daily activities performed by the AMS staff at the London Road facility involves water management.

Because of the delay associated with discharge of each tank (e.g., typically four days), coupled with the increased precipitation AMS experiences during the spring, early summer and fall months, temporary limitations in tank storage capacity may occur. If a spring or summer storm should cause our tank or pumping capacity to be exceeded, AMS has one of two options: (1) it must discharge the pumped water without sampling and in violation of the court order, or (2) it must cease pumping the water out of the manhole. If pumping ceases, (e.g., if the foundation drainage system is rendered non-functional), the storm water that accumulates around the building is likely to enter the building basement, come into contact with the contents of the WHUT Room and the stored waste, and become contaminated. This water cannot be discharged until the radioactivity has been removed.

The financial and radiological impacts associated with foundation drain failure or impaired tank capacity would be similar to those suffered during the financially-devastating flood of 1995. This occurrence forced AMS to implement an expensive water treatment and sewer remediation program that cost in excess of \$1M.¹ It also drained the corporation of almost all of its cash reserves, rendering it unable to bear the cost of another water clean-up project if such an event should be required.

The 1995 basement flood also raised questions in regard to the structural integrity of the building. In subsequent inspections by the USNRC and a registered Professional Engineer working under contract to AMS, it was determined that this event caused no apparent damage to the building or its ability to contain its inventory of licensed radioactive materials. However, there is no guarantee that a future flood event will have a similar outcome. Thus it is imperative that AMS receive USNRC authorization to freely discharge the water from the foundation drainage system, without lengthy and costly hold-

¹ As of the date of this letter, the treated water from the 1995 project continues to be stored in the AMS warehouse in collapsible storage tanks.

up/sampling steps, so that a permanent (functional) drainage system can be installed. Only then will the potential for water incursion into the basement be minimized.²

Regulatory Action to Date

On March 1, 1995, AMS submitted an application to amend USNRC License No. 34-19089-01 to permit water treatment and sewer remediation to proceed at the London Road facility.³ Included in that application was a proposed methodology for evaluating contaminant levels in the ground/surface water after the work was complete so that water could be freely discharged. In response, Amendment No. 32 to the license was issued. However, re-connection of the remediated foundation drainage system to a new manhole and installation of a methodology for evaluating contaminant levels were specifically excluded.

On March 20, 1995, AMS requested another amendment to License No. 34-19089 wherein re-connection of the remediated foundation underdrain system to a new manhole, installation of a sampling device, and authorization to discharge through the new lateral ground/surface water that meets the release criteria were specifically requested. In a June 14, 1995 communication, the USNRC solicited additional information in regard to AMS's request. AMS provided that information on June 16, 1995, and on June 21, 1995, the USNRC responded as follows:

"... we have received your June 16, 1995 response to our June 14, 1995 deficiency letter and will make every effort to review your response in an expeditious manner. We will notify you if we have additional questions. Again, please note that we have only approved the installation of a new manhole and lateral and its re-connection to the existing under drain system. We will need to evaluate all of the other issues regarding cobalt-60 contamination within the existing underdrain system and soils both under the building and in the vicinity of the underdrain system prior to discharge of collected water."

On June 27, 1995, AMS received Amendment No. 37 to the referenced license, wherein the water discharge issue was again excluded. However, in the transmittal letter, the USNRC stated the following in regard to how effective the sewer remediation might be:

"Note that we are still in the process of reviewing information you submitted relative to installation of a sampling device on the new lateral connection (reference Item 2 of your 3/22/95 letter, and letter dated June 16, 1995). Also regarding your June 16 letter, we are reviewing Item II.C. which describes your proposed soil sampling program to evaluate the radiological conditions of the soil under the building and in the vicinity of the under drain system. We anticipate that we will have additional questions on both of these issues and will forward them to you as soon as possible."

² AMS recognizes that it is barred, by court order, from freely releasing the ground/surface water collected from the underdrain system. However, USNRC authorization to free-release the water is a necessary part of a permanent legal solution.

³ The March 1, 1996 amendment application was supplemented in a March 3, 1995 communication.

On July 17, 1995, AMS received Amendment No. 38 to the referenced license. Again, the water discharge issue was excluded. However, the following statement in regard to the effectiveness issue and subsequent free-release of water was in the transmittal letter:

"Note that we are still in the process of reviewing Item II. in your June 16, 1995 letter, regarding your proposed soil sampling program, and the grouting/remediation project. We anticipate that we will have additional questions on these issues and will forward them to you as soon as possible".

As of the date of this letter, no additional regulatory action on our requests to freely discharge ground/surface water from the remediated sewer system has been taken.

Effectiveness of the Sewer Remediation

In its June 27, 1995 and July 17, 1995 communications, the USNRC expressed concern over the effectiveness of the sewer remediation project, and implied that this was the reason for delayed action on issuing a license provision to discharge water from the underdrain system. AMS maintains that the sewer remediation project was completely effective in removing or isolating all residual radioactivity outside of the London Road building, and that the only residual contamination remaining outside of the building after the remediation (e.g., that in the abandoned footer drain in the immediate vicinity of the Source Garden and the abandoned lateral connection between the old manhole and the London Road interceptor) is hydraulically isolated from ground/surface water paths to the underdrain system. AMS also maintains that the soils upon which the London Road building was constructed have the same radiological character now as they did before the 1995 flood and thus cannot contribute to future contaminant migration. The following are the reasons why these positions are justified:

(1) Throughout the period of time that the basement of the London Road facility was flooded due to the regional sewer district's intentional blocking of all discharge paths, AMS maintained a minimal pressure differential between the inside and outside water levels in order to minimize uplift on the floor slab and eliminate the possibility of "back flow" of contaminated water to areas outside of the building. AMS's pumping efforts clearly provided the necessary level of pressure control.⁴ This was evidenced in USNRC Inspection Report No. 030-16055/95006(DNMS) wherein it was stated that, with the exception of one location on the second floor of the building, "the reinforced concrete core structure of the 1958 building that forms the hot cell, the WHUT room, the original radiography room, the source garden and the front and back basements was found to be in good condition". Furthermore, the inspector found "no additional signs of distress" on the basement slab, and concluded that "there was no observable significant impact on the structural integrity of the 1958 building as a result of the basement flooding event". This finding was confirmed during an independent evaluation performed by a registered Professional Engineer under contract to AMS.⁵ Thus the structural evidence supports our position that pressure gradients sufficient to jeopardize the integrity of the slab did not occur.

⁴ Documentation to support this position is available for USNRC review.

⁵ See June 7, 1996 letter from R. Meschter (AMS) to Mr. Geoffrey C. Wright (USNRC, Region III).

(2) During the 1995 sewer remediation project, AMS confirmed, through measurements and sampling, that the shale layer upon which the building is built and which formed the base of the existing footer drains, did not contain detectable radioactivity. In fact, no detectable activity was identified during the remediation other than that in the existing drain tile and the fill material upon which the drain tile rested. Thus the radiological data acquired during the remediation project support our position that the radiological conditions of the soil under the basement and the WHUT room are equivalent to their pre-flood conditions (e.g., when core samples taken through the basement in prior to the flood exhibited radiologically-benign conditions).

(3) In an April 12, 1996 communication to Mr. John Madera (USNRC, Region III), AMS attached a Registered Hydrogeologist's report wherein he concluded that the new drain tile is hydraulically connected to the soils under the basement floor. In other words, if contamination migrated from the basement to these soils, it would appear in the water that is pumped out of the system.

(4) Between the 1995 completion date of the sewer remediation project and the date of this letter, over 140,000 gallons of water have been pumped from the foundation drainage system, confirmed to be "clean" through laboratory analyses, and discharged.⁶ This is further proof that no mobile contamination is under the basement or in the new drainage system.

The findings of the USNRC Inspection Report, the hydraulic connection between the soils under the building and the drain tile, and the fact that the water being pumped from the foundation drains has been and continues to be radiologically benign, provide an abundance of evidence to support our position that the new underdrain system is completely isolated from any sources of radioactivity.

Basis for Modifying the 1995 Discharge Procedure

In AMS's March 1, 1995 and March 20, 1995 license amendment requests to discharge ground/surface water, it was anticipated that an immediate outcome of the sewer remediation project would be re-connection of the sanitary and storm sewers from the London Road facility to the NEORSD's interceptor. Therefore, in those applications AMS proposed a monitoring methodology designed to accomplish two purposes:

- *Confirming* that water that entered the sewer system was free of radioactivity;
- Demonstrating that the remediation efforts were, in fact, effective.

⁶ Cobalt-60 was identified in two 3,000-gallon batch tanks and one 25,000 gallon frac tank. However, the source of this contamination was the tanks themselves, which were used as process tanks for the water treatment project. The residual ⁶⁰Co that remained in the batch tanks when they were first filled with water from the remediated underdrain system was removed by filtration. Sampling of subsequent batches of water held in these tanks has been negative for the presence of ⁶⁰Co. Remedial action for the frac tank is delayed pending resolution of a non-radiological issue.

Because the water in the remediated underdrain system was intended to flow by gravity into the London Road interceptor, the proposed monitoring methodology involved installation of an in-line flow meter and composite sampler into the lateral connection. The intent was to collect and analyze composite samples on a planned and periodic basis until such time as all parties were confident of the effectiveness of the sewer remediation effort.

Unfortunately, due to the on-going litigation between AMS and the regional sewer district, re-connection of the building sewers to the London Road interceptor is not likely in the foreseeable future. Therefore, an alternative methodology for meeting the intent of the March 1 and March 20, 1995 applications (e.g., one that does not require a gravity-fed discharge path) is necessary.

The water that enters the underdrain system is neither effluent from the London Road facility per 10 CFR 20.1302(b)(2)(i), nor is it discharged licensed materials into the sanitary sewer system per 10 CFR 20.2003(a). It is simply groundwater and storm water that collects within the "bathtub" of shale surrounding the building. Since this groundwater and storm water does not come in contact with any sources of ⁶⁰Co, continuous monitoring of the radionuclide content of this water as required in 10 CFR 20.1302(a) is not necessary.

On the other hand, 10 CFR 20.1501 and license condition 23.J of License No. 34-19089-01 require AMS to conduct a surveillance program in order to estimate doses to the public and to document that migration of radioactive materials from known locations does not occur. USNRC Regulatory Guide Reg Guide 8.37, "ALARA Levels for Effluents from Materials Facilities" indicates that Regulatory Guide 4.14, "Radiological Effluent and Environmental Monitoring at Uranium Mills" is a useful source of guidance for materials licensees in this regard.

Regulatory Guide 4.14 recommends that samples of water from "any surface water crossing the site boundary and offsite streams or rivers that may be subject to drainage from potentially contaminated areas or from a tailings impoundment failure" be collected at least monthly.⁷ Pursuant to this guidance, AMS intends to implement an even more aggressive sampling program for the surface water that enters the underdrain system in order to document that migration of radioactivity from potentially contaminated areas has not occurred. The following section describes the proposed sampling program.

Description of the Ground/Surface Water Sampling Program

Once USNRC and legal authority to freely discharge the storm/ground water that collects in the underdrain system of the London Road building has been received, AMS will operate a temporary automatic pumping system to remove water that accumulates in the new manhole. This water will be discharged to a storm sewer catch basin on the west side of the building's west parking lot. AMS will then pursue the legal authority to re-institute a permanent (gravity-fed) discharge system.

Consistent with the Regulatory Guide 4.14 guidance, a one-liter sample of water will be collected from the manhole once per week and analyzed pursuant to Radiation Safety Procedure No. RSP-018,

⁷ The Regulatory Guide also states that "operational samples should be collected upstream and downstream of the area of potential influence", and that "any unusual releases (such as surface seepage) that are not part of normal operations should be sampled".

"Operation of the Gamma Spectrometer", and RSP-019, "Assessment of Radioactivity in Water Sample".⁸ All results will be documented and maintained as described in RSP-003, "Radiation Protection Records".

Regulatory Guide 4.14 recommends that the lower limits of detection for the sample analysis be 10% of the appropriate concentration limit listed in Table II of Appendix B to 10 CFR 20 (e.g., 300 pCi per liter for ⁶⁰Co). However, the following release criteria that are specific to AMS (see RSP-019) and which demand a more stringent performance standard, are applicable:

- Water that contains greater than 100 pCi per liter of ⁶⁰Co in any form (e.g., "soluble" or "insoluble"), as determined from the sampling and analysis effort, shall not be discharged.
- Water than contains no detectable ⁶⁰Co activity by direct counting (e.g., analytical results that are below a nominal detection limit of 70 pCi per liter) may be discharged.
- Water that exhibits both of the following may be discharged:

Less than 100 pCi per liter of ⁶⁰Co by direct counting and

No detectable ⁶⁰Co activity. (e.g., analytical results that are below a nominal detection limit of 15 pCi per liter) on a 0.45 micrometer filter after filtration.

Since AMS would consider any detectable ⁶⁰Co in samples collected from the manhole to be an "unusual release", such an occurrence would trigger re-instatement of "tanking" procedures (e.g., the water will be pumped to hold-up tanks, sampled, and confirmed to meet the release criteria prior to discharge) until the cause has been identified and corrective action instituted.

⁸ As recommended in Regulatory Guide 4.14 if the manhole is dry on a scheduled sampling collection date, that sample will be collected immediately after water starts to flow.

PAGE 1 OF 8

Advanced Medical Systems, Inc.

Fax Cover Sheet

Date 6/26/96

1020 Landon Road

Cleveland Ohio 44110

(216) 692-3270

Fax (216) 692-3269

ATTN: Geoffre Wright

FAX NO.:

COMPANY:

FROM: Bob Meschter EXT.

SUBJECT:

MESSAGE

See Attached - ORIGINAL VIA US. MAIL

Revision Submitted on 7/1
Stew Holbrook
by hearing on Attachment to
to change letter
2/7/96

c/78



Advanced Medical Systems, Inc.

1020 London Rd.
Cleveland, Ohio 44110
216-692-3270

01524

June 25, 1996

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

Re: USNRC License No. 34 19089-01

Dear Mr. Wright:

On March 1, 1995 and March 20, 1995, Advanced Medical Systems, Inc. (AMS) submitted applications to amend the referenced license to permit release of ground/surface water that collects in the *remediated* underdrain system of the London Road facility. As of the date of this letter, USNRC authorization to proceed on this request has not yet been received.

Since the date of those applications, AMS has faced a series of extenuating circumstances that have increased the urgency for action. However, we recognize that considerable time has passed since then, and that some of the original descriptions and specifications contained in the 1995 applications are no longer applicable. The purpose of this letter is to reiterate our request to amend the referenced license to permit free discharge of water pumped from the foundation drainage system. Attached is a brief description of the regulatory action on this issue to date, a discussion of the reason for our request and its justification, and a description of the procedure we intend to follow when USNRC authorization to proceed is given.

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 asking for prompt USNRC action on this important issue.

Sincerely,

Robert Meschter, RSO

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

9608260278 7/96

201-762-0502

REQUEST TO DISCHARGE GROUND/SURFACE WATER
FROM THE REMEDIATED SEWER SYSTEM

Ex 2. Stronghold sub-surface system?

Purpose

As a result of technically-indefensible legal action taken by the Northeast Ohio Regional Sewer District (NEORS), the Advanced Medical Systems, Inc. (AMS) facility on London Road does not have a direct connection between the building and the regional sewer system for the discharge of sanitary waste, rain water from the building's roof drains or the storm water that surrounds the building. Even after completion of an extensive sewer remediation project that involved installation of a new foundation drainage system and a new manhole, the free-flow of water away from the building is still not possible for a variety of legal and regulatory reasons.

As of the date of this letter, AMS is bound by court order and USNRC license requirements to pump water from the foundation drains into hold-up tanks, sample the tanks for the presence of radioactivity, notify the NEORS of pending discharge of each tank, and await the results of a NEORS confirmatory sampling effort prior to discharge. As a result, a major portion of the daily activities performed by the AMS staff at the London Road facility involves water management.

Because of the delay associated with discharge of each tank (e.g., typically four days), coupled with the increased precipitation AMS experiences during the spring, early summer and fall months, temporary limitations in tank storage capacity may occur. If a spring or summer storm should cause our tank or pumping capacity to be exceeded, AMS has one of two options: (1) it must discharge the pumped water without sampling and in violation of the court order, or (2) it must cease pumping the water out of the manhole. If pumping ceases, (e.g., if the foundation drainage system is rendered non-functional), the storm water that accumulates around the building is likely to enter the building basement, come into contact with the contents of the WHUT Room and the stored waste, and become contaminated. This water cannot be discharged until the radioactivity has been removed.

The financial and radiological impacts associated with foundation drain failure or impaired tank capacity would be similar to those suffered during the financially-devastating flood of 1995. This occurrence forced AMS to implement an expensive water treatment and sewer remediation program that cost in excess of \$1M.¹ It also drained the corporation of almost all of its cash reserves, rendering it unable to bear the cost of another water clean-up project if such an event should be required.

The 1995 basement flood also raised questions in regard to the structural integrity of the building. In subsequent inspections by the USNRC and a registered Professional Engineer working under contract to AMS, it was determined that this event caused no apparent damage to the building or its ability to contain its inventory of licensed radioactive materials. However, there is no guarantee that a future flood event will have a similar outcome. Thus it is imperative that AMS receive USNRC authorization to freely discharge the water from the foundation drainage system, without lengthy and costly hold-

¹ As of the date of this letter, the treated water from the 1995 project continues to be stored in the AMS warehouse in collapsible storage tanks.

up/sampling steps, so that a permanent (functional) drainage system can be installed. Only then will the potential for water incursion into the basement be minimized.²

Regulatory Action to Date

On March 1, 1995, AMS submitted an application to amend USNRC License No. 34-19089-01 to permit water treatment and sewer remediation to proceed at the London Road facility.³ Included in that application was a proposed methodology for evaluating contaminant levels in the ground/surface water after the work was complete so that water could be freely discharged. In response, Amendment No. 32 to the license was issued. However, re-connection of the remediated foundation drainage system to a new manhole and installation of a methodology for evaluating contaminant levels were specifically excluded.

On March 20, 1995, AMS requested another amendment to License No. 34-19089 wherein re-connection of the remediated foundation underdrain system to a new manhole, installation of a sampling device, and authorization to discharge through the new lateral ground/surface water that meets the release criteria were specifically requested. In a June 14, 1995 communication, the USNRC solicited additional information in regard to AMS's request. AMS provided that information on June 16, 1996, and on June 21, 1996, the USNRC responded as follows:

"... we have received your June 16, 1995 response to our June 14, 1995 deficiency letter and will make every effort to review your response in an expeditious manner. We will notify you if we have additional questions. Again, please note that we have only approved the installation of a new manhole and lateral and its re-connection to the existing under drain system. We will need to evaluate all of the other issues regarding cobalt-60 contamination within the existing underdrain system and soils both under the building and in the vicinity of the underdrain system prior to discharge of collected water."

On June 27, 1995, AMS received Amendment No. 37 to the referenced license, wherein the water discharge issue was again excluded. However, in the transmittal letter, the USNRC stated the following in regard to how effective the sewer remediation might be:

"Note that we are still in the process of reviewing information you submitted relative to installation of a sampling device on the new lateral connection (reference Item 2 of your 3/22/95 letter, and letter dated June 16, 1995). Also regarding your June 16 letter, we are reviewing Item II.C. which describes your proposed soil sampling program to evaluate the radiological conditions of the soil under the building and in the vicinity of the under drain system. We anticipate that we will have additional questions on both of these issues and will forward them to you as soon as possible."

² AMS recognizes that it is barred, by court order, from freely releasing the ground/surface water collected from the underdrain system. However, USNRC authorization to free-release the water is a necessary part of a permanent legal solution.

³ The March 1, 1996 amendment application was supplemented in a March 5, 1995 communication.

On July 17, 1995, AMS received Amendment No. 38 to the referenced license. Again, the water discharge issue was excluded. However, the following statement in regard to the effectiveness issue and subsequent free-release of water was in the transmittal letter:

"Note that we are still in the process of reviewing Item 11. in your June 16, 1995 letter, regarding your proposed soil sampling program, and the grouting/remediation project. We anticipate that we will have additional questions on these issues and will forward them to you as soon as possible".

As of the date of this letter, no additional regulatory action on our requests to freely discharge ground/surface water from the remediated sewer system has been taken.

Effectiveness of the Sewer Remediation

In its June 27, 1995 and July 17, 1995 communications, the USNRC expressed concern over the effectiveness of the sewer remediation project, and implied that this was the reason for delayed action on issuing a license provision to discharge water from the underdrain system. AMS maintains that the sewer remediation project was completely effective in removing or isolating all residual radioactivity outside of the London Road building, and that the only residual contamination remaining outside of the building after the remediation (e.g., that in the abandoned footer drain in the immediate vicinity of the Source Garden and the abandoned lateral connection between the old manhole and the London Road interceptor) is hydraulically isolated from ground/surface water paths to the underdrain system. AMS also maintains that the soils upon which the London Road building was constructed have the same radiological character now as they did before the 1995 flood and thus cannot contribute to future contaminant migration. The following are the reasons why these positions are justified:

(1) Throughout the period of time that the basement of the London Road facility was flooded due to the regional sewer district's intentional blocking of all discharge paths, AMS maintained a minimal pressure differential between the inside and outside water levels in order to minimize uplift on the floor slab and eliminate the possibility of "back flow" of contaminated water to areas outside of the building. AMS's pumping efforts clearly provided the necessary level of pressure control.⁴ This was evidenced in USNRC Inspection Report No. 030-16055/95006(DNMS) wherein it was stated that, with the exception of one location on the second floor of the building, "the reinforced concrete core structure of the 1958 building that forms the hot cell, the WHUT room, the original radiography room, the source garden and the front and back basements was found to be in good condition". Furthermore, the inspection found "no additional signs of distress" on the basement slab, and concluded that "there was no observable significant impact on the structural integrity of the 1958 building as a result of the basement flooding event". This finding was confirmed during an independent evaluation performed by a registered Professional Engineer under contract to AMS.⁵ Thus the structural evidence supports our position that pressure gradients sufficient to jeopardize the integrity of the slab did not occur.

⁴ Documentation to support this position is available for USNRC review.

⁵ See June 7, 1996 letter from R. Meschter (AMS) to Mr. Geoffrey C. Wright (USNRC, Region III).

(2) During the 1995 sewer remediation project, AMS confirmed, through measurements and sampling, that the shale layer upon which the building is built and which formed the base of the existing footer drains, did not contain detectable radioactivity. In fact, no detectable activity was identified during the remediation other than that in the existing drain tile and the fill material upon which the drain tile rested. Thus the radiological data acquired during the remediation project support our position that the radiological conditions of the soil under the basement and the WHUT room are equivalent to their pre-flood conditions (e.g., when core samples taken through the basement in prior to the flood exhibited radiologically-benign conditions).

(3) In an April 12, 1996 communication to Mr. John Madera (USNRC, Region III), AMS attached a Registered Hydrogeologist's report wherein he concluded that the new drain tile is hydraulically connected to the soils under the basement floor. In other words, if contamination migrated from the basement to these soils, it would appear in the water that is pumped out of the system.

(4) Between the 1995 completion date of the sewer remediation project and the date of this letter, over 140,000 gallons of water have been pumped from the foundation drainage system, confirmed to be "clean" through laboratory analyses, and discharged.⁶ This is further proof that no mobile contamination is under the basement or in the new drainage system.

The findings of the USNRC Inspection Report, the hydraulic connection between the soils under the building and the drain tile, and the fact that the water being pumped from the foundation drains has been and continues to be radiologically benign, provide an abundance of evidence to support our position that the new underdrain system is completely isolated from any sources of radioactivity.

Basis for Modifying the 1995 Discharge Procedure

In AMS's March 1, 1995 and March 20, 1995 license amendment requests to discharge ground/surface water, it was anticipated that an immediate outcome of the sewer remediation project would be re-connection of the sanitary and storm sewers from the London Road facility to the NEORSD's interceptor. Therefore, in those applications AMS proposed a monitoring methodology designed to accomplish two purposes:

- *Confirming that water that entered the sewer system was free of radioactivity;*
- *Demonstrating that the remediation efforts were, in fact, effective*

⁶ Cobalt-60 was identified in two 3,000-gallon hatch tanks and one 25,000 gallon frac tank. However, the source of this contamination was the tanks themselves, which were used as process tanks for the water treatment project. The residual ⁶⁰Co that remained in the hatch tanks when they were first filled with water from the remediated underdrain system was removed by filtration. Sampling of subsequent batches of water held in these tanks has been negative for the presence of ⁶⁰Co. Remedial action for the frac tank is delayed pending resolution of a non-radiological issue.

Because the water in the remediated underdrain system was intended to flow by gravity into the London Road Interceptor, the proposed monitoring methodology involved installation of an in-line flow meter and composite sampler into the lateral connection. The intent was to collect and analyze composite samples on a planned and periodic basis until such time as all parties were confident of the effectiveness of the sewer remediation effort.

Unfortunately, due to the on-going litigation between AMS and the regional sewer district, re-connection of the building sewers to the London Road Interceptor is not likely in the foreseeable future. Therefore, an alternative methodology for meeting the intent of the March 1 and March 20, 1995 applications (e.g., one that does not require a gravity-fed discharge path) is necessary.

The water that enters the underdrain system is neither effluent from the London Road facility per 10 CFR 20.1302(b)(2)(i), nor is it discharged licensed materials into the sanitary sewer system per 10 CFR 20.2002(a). It is simply groundwater and storm water that collects within the "bathtub" of shale surrounding the building. Since this groundwater and storm water does not come in contact with any sources of ^{60}Co , continuous monitoring of the radionuclide content of this water as required in 10 CFR 20.1302(a) is not necessary.

On the other hand, 10 CFR 20.1501 and license condition 23.J of License No. 34-19089-01 require AMS to conduct a surveillance program in order to estimate doses to the public and to document that migration of radioactive materials from known locations does not occur. USNRC Regulatory Guide Reg Guide 8.37, "ALARA Levels for Effluents from Materials Facilities" indicates that Regulatory Guide 4.14, "Radiological Effluent and Environmental Monitoring at Uranium Mills" is a useful source of guidance for materials licensees in this regard.

Regulatory Guide 4.14 recommends that samples of water from "any surface water crossing the site boundary and offsite streams or rivers that may be subject to drainage from potentially contaminated areas or from a tailings impoundment failure" be collected at least monthly.⁷ Pursuant to this guidance, AMS intends to implement an even more aggressive sampling program for the surface water that enters the underdrain system in order to document that migration of radioactivity from potentially contaminated areas has not occurred. The following section describes the proposed sampling program.

Description of the Ground/Surface Water Sampling Program

Once USNRC and legal authority to freely discharge the storm/ground water that collects in the underdrain system of the London Road building has been received, AMS will operate a temporary automatic pumping system to remove water that accumulates in the new manhole. This water will be discharged to a storm sewer catch basin on the west side of the building's west parking lot. AMS will then pursue the legal authority to re-institute a permanent (gravity-fed) discharge system.

Consistent with the Regulatory Guide 4.14 guidance, a one liter sample of water will be collected from the manhole once per week and analyzed pursuant to Radiation Safety Procedure No. RSP-018.

⁷ The Regulatory Guide also states that "operational samples should be collected upstream and downstream of the area of potential effluence", and that "any unusual releases (such as surface seepage) that are not part of normal operations should be sampled".

"Operation of the Gamma Spectrometer", and RSP-019, "Assessment of Radioactivity in Water Samples". All results will be documented and maintained as described in RSP-003, "Radiation Protection Records".

Regulatory Guide 4.14 recommends that the lower limits of detection for the sample analysis be 10% of the appropriate concentration limit listed in Table II of Appendix B to 10 CFR 20 (e.g., 300 pCi per liter for ^{60}Co). However, the following release criteria that are specific to AMS (see RSP-019) and which demand a more stringent performance standard, are applicable:

- Water that contains greater than 100 pCi per liter of ^{60}Co in any form (e.g., "soluble" or "insoluble"), as determined from the sampling and analysis effort, shall not be discharged.
- Water that contains no detectable ^{60}Co activity by direct counting (e.g., analytical results that are below a nominal detection limit of 70 pCi per liter) may be discharged.
- Water that exhibits both of the following may be discharged:
 - Less than 100 pCi per liter of ^{60}Co by direct counting and
 - No detectable ^{60}Co activity (e.g., analytical results that are below a nominal detection limit of 15 pCi per liter) on a 0.45 micrometer filter after filtration.

Since AMS would consider any detectable ^{60}Co in samples collected from the manhole to be an "unusual release", such an occurrence would trigger re-instatement of "tanking" procedures (e.g., the water will be pumped to hold-up tanks, sampled, and confirmed to meet the release criteria prior to discharge) until the cause has been identified and corrective action instituted.

* As recommended in Regulatory Guide 4.14, if the manhole is dry on a scheduled sampling collection date, the sample will be collected immediately after water starts to flow.

Advanced Medical Systems, Inc.

121 North Eagle Street • Geneva, Ohio 44041
(216)466-8005 FAX (216)466-8629

July 1, 1996

Mr. Geoffrey Wright
U. S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

RE: Advanced Medical Systems, Inc. Application to Amend
USNRC License No. 34-19089-01

Dear Mr. Wright:

The purpose of this letter is to request an amendment to the Advanced Medical Systems, Inc. (AMS) radioactive materials license in regard to decommissioning financial assurance. Specifically, AMS wishes to modify its standby letter of credit dated January 27, 1995, to reflect a reduction from its current amount of \$1,800,000 to \$940,000.¹ The released funds will be used to finance a portion of the Building Recovery Project that was described in our June 10, 1996, proposal. The following are the specific provisions associated with this amendment request:

(1) Upon receipt of the license amendment, AMS will request Bank One to reduce the collateral used to secure the letter of credit line of credit by \$860,000 and issue a new letter of credit for \$940,000.

(2) The \$860,000 released from the collateral will be used by AMS for the sole purpose of funding transfer/disposal of the sealed sources of ⁶⁰Co, the canisters of bulk ⁶⁰Co, and the low-level radioactive waste. Task 1 and Task 2 of the June 10, 1996, proposal for the Building Recovery Project contain a description of these materials and the general approach AMS intends to follow to effect their final disposition.

(3) Any funds remaining after the fees associated with Tasks 1 and 2 of the Building Recovery Project have been paid will be returned to Bank One for the sole purpose of increasing the value of the letter of credit. At that time, AMS will request Bank One to issue a new letter of credit to reflect the increased collateral amount.

¹ Irrevocable Standby Letter of Credit No. SB300980 in the amount of \$1,800,000, issued by Bank One, Cleveland on January 27, 1995, currently serves as the AMS decommissioning funding instrument. This Letter of Credit is secured with the following: A one-year CD with Bank One (Certificate No. 088-006-0292518, matures 07/22/96, principle amount at inception was \$250,000); a 180-day CD with Bank One (Certificate No. 086-006-0292517, matures 07/16/96, balance at last maturity, \$256,595.89); a 30-day CD with Bank One (Certificate No. 086-006-292516, matures 05/17/96, balance at last maturity, \$285,171.88); and pledged assets of approximately \$1,000,000 in the form of negotiable securities and government bonds.

RECEIVED

JUL 02 1996

REGION III

July 1, 1996

(4) By August 30, 1996, AMS will submit Revision 1 of the "Conceptual Decommissioning Plan for the London Road Facility" to reflect the abbreviated quantity of items to be decommissioned after the Building Recovery Project is complete.² Because the USNRC has not yet made a decision as to the appropriate decommissioning methodology for the London Road Facility (e.g., DECON versus SAFSTOR), all applicable technologies will be evaluated in Revision 1. Revision 1 will also contain a clear description of the preferred methodology and a detailed cost estimate for implementing that methodology.³

(5) By September 15, 1996, and in anticipation of USNRC approval of Revision 1 of the "Conceptual Decommissioning Plan for the London Road Facility", AMS will submit a revised Decommissioning Funding Plan wherein new decommissioning financial assurance instruments will be described. Within 15 days after USNRC approval of the Plan, AMS will request Bank One to issue a new letter of credit for the amount shown in Revision 1 of the "Conceptual Decommissioning Plan for the London Road Facility".

A license amendment fee, in the amount of \$680, is enclosed. If I can answer any questions or assist you in any way in expediting your review, please call me at 216/466-8005. We are asking for prompt USNRC action on this important issue.

Sincerely,



DAVID CESAR
Vice President and Treasurer

DC/cs
Enclosure

cc: R. Meschter
D. A. Miller, Esq. - Stavole & Miller
R. A. Duff - IEM
C. D. Berger - IEM

² Since the only items remaining will be the Hot Cell, the stabilized WHUT Room, the Hot Cell ventilation system, a small section of abandoned drain tiles, and the abandoned lateral connection from the building to the regional sewer system, the estimated decommissioning cost will be significantly reduced from those contained in Revision 0 of the Plan, dated October 20, 1995.

³ The cost estimated for the preferred alternative will be presented in the same format as Appendix F of USNRC Regulatory Guide 3.66, "Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72" (June, 1990).

DOCKET NO: 030-16055

LICENSEE: Advanced Medical Systems, Inc.
Cleveland, Ohio

SUBJECT: SAFETY EVALUATION REPORT: ADVANCED MEDICAL SYSTEMS, INC.,
APPLICATION TO AMEND NRC LICENSE NO 34-19089-01 DATED JULY
1, 1996

The purpose of this memorandum is to document the staff's safety review of a license amendment application submitted by Advanced Medical Systems (AMS) in a letter of July 1, 1996. In that letter, AMS requested that NRC amend License No. 34-19089-01 to allow it to implement Tasks 1 and 2 of the Building Recovery Plan which AMS submitted in a letter of June 10, 1996. Task 1 encompasses disposal of all accessible sealed cobalt-60 sources and all canisters of bulk cobalt-60 currently possessed at the licensee's London Road facility at a commercial low-level radioactive waste disposal facility while Task 2 includes disposal of dry solid waste currently stored at the facility.

The effect of these tasks would be to reduce the inventory of cobalt-60 at the licensee's London Road facility by approximately 52,000 curies. In its July 1 letter, AMS also proposed to reduce its standby letter of credit from its current amount of \$1,800,000 to \$940,000 and thereby free up \$860,000 to finance the cost of implementing Tasks 1 and 2. These funds would be used solely for the purpose of funding transfer/disposal of the bulk and sealed sources of cobalt-60 and low-level radioactive waste. AMS also agreed in this letter to submit by August 30, 1996 a revision to the "Conceptual Decommissioning Plan for the London Road Facility" that will reflect the reduced onsite source inventory, and by September 15, 1996, assuming approval of the revised conceptual Decommissioning Plan, a revised Decommissioning Funding Plan that will contain a description of a new decommissioning financial assurance instrument.

BACKGROUND

From 1979 to 1989, AMS manufactured cobalt-60 sealed sources for teletherapy and radiography machines at its London Road facility. Since May 1991, the licensee has not been authorized, nor does it now desire, to manufacture sealed sources. License No. 34-19089-01 currently authorizes possession of up to 300,000 curies of cobalt-60. At present, approximately 55,000 curies of cobalt-60 in the form of bulk metal, sealed sources and dry solid waste are onsite at AMS' facility. (Of this inventory, approximately 3,000 curies is located in a storage well behind the hot cell stuck plug and will not be removed as part of Tasks 1 and 2.) This large quantity of cobalt-60 is not needed for the limited operations currently authorized under the AMS license.

On November 29, 1994, AMS submitted an application for license renewal. As part of the license renewal process and in accordance with 10 CFR 30.35 (c)(2) and (e), AMS submitted on January 27, 1995, an executed standby letter of credit in the amount of \$1,800,000, which was supposed to reflect its cost estimate for decommissioning. By letter dated March 30, 1995, NRC informed AMS that AMS had underestimated the cost of decommissioning the facility.

C/80

On October 11, 1995, in response to a Demand for Information issued by NRC on September 17, 1995, AMS submitted a Strategic Plan to NRC for review. This plan described a number of tasks needed to assure regulatory compliance as well as streamlined routine operations and assigned priorities of high, medium and low to those tasks, as appropriate. One of the highest priority items in the AMS Strategic Plan is a reduction in the inventory of radioactive materials at the London Road facility.

On October 20, 1995, AMS submitted a "Conceptual Decommissioning Plan for the London Road Facility" to NRC. In this document, AMS estimated decommissioning costs to range between \$913,000 and \$3,300,000 depending on decommissioning methodology. As noted above, AMS' January 27, 1995 standby letter of credit submitted in support of its license renewal application was executed in the amount of \$1,800,000. By letter dated March 20, 1996, NRC requested additional information from AMS regarding its decommissioning plan. NRC has received AMS' response and it is currently under staff review.

On June 10, 1996, AMS requested NRC authorization to proceed on a comprehensive Building Recovery Project (BRP) at the AMS facility. The BRP contained a twelve point scope of work. AMS developed this plan because it is currently facing a number of extenuating regulatory, legal and financial circumstances that are hindering its efforts to remain a viable business entity. Included in that letter was a request that NRC release a portion of the funds that AMS has committed for decommissioning the London Road facility to support the commercial disposal costs. AMS believes that once the project is complete, there will be a significantly-reduced radiological risk at the facility, license commitments will more accurately reflect AMS's on-going operational activities, compliance costs will be lower, and routine personnel exposures will be lower.

As noted above, AMS submitted an amendment request on July 1, 1996 to, among other things, amend License No. 34-19089-01 to approve implementation of Tasks 1 and 2 of the BRP.

DISCUSSION

Task 1 of the BRP involves stabilization, transfer and disposal of approximately 52,000 curies of cobalt-60. Under Task 1, the licensee and the contractor will stabilize the sources and bulk cobalt-60 (excepting those sources inside the hot cell stuck plug) with a disposal site stabilization agent that has been approved by the State of South Carolina. This stabilization will be performed inside shipping cask liners by AMS and the contractor. AMS has committed to use remote handling capabilities to the greatest possible extent in order to minimize personnel exposures from handling and stabilization of the materials. Once the stabilization agent has cured sufficiently, the cask liner will be loaded by AMS and contractor personnel into a lead-shielded, Type B shipping cask for shipment to the Low-Level Waste (LLW) disposal facility at Barnwell, South Carolina. AMS anticipates that this task will be accomplished in one or two shipments, based upon the size of Type B cask that is used. Under Task 2, approximately 2500

cubic feet of dry solid radioactive waste (containing approximately 25 curies of cobalt-60) will be inventoried by AMS, packaged in appropriate shipping containers by the contractor and shipped for disposal at the Barnwell LLW disposal facility. All onsite operations, including those of the contractor, will be conducted under the AMS license.

NRC's Office of Nuclear Material Safety and Safeguards (NMSS) and Region III have been interested in reducing the radioactive source inventory at the AMS London Road Facility since AMS amended its license in 1991 to limit authorized use of licensed materials to non-manufacturing purposes. The highest priority concern listed in the staff's September 17, 1995 Demand for Information (DFI) was "...removal of large quantities of radioactive material and low-level radioactive waste from the facility...." While AMS' continued possession of 55,000 Curies of cobalt-60 in the form of bulk metal, sealed sources and dry solid waste poses no imminent public health and safety risk, the staff noted in the DFI that continued possession of this material "...serves no useful purpose to AMS and poses avoidable risks to the workers and potential risk to members of the public." Staff believes that reduction in this inventory is consistent with the ALARA philosophy and will allow the licensee to focus on the remaining concerns expressed in the staff's September 17, 1995 DFI and the resultant AMS Strategic Plan.

Interest in decreasing source inventory has been heightened by recent legal and financial circumstances facing AMS that have the potential to hinder AMS' efforts to remain a viable business entity that can continue to provide control over activities at the London Road facility so as to protect public health and safety from radiological hazards. Staff believes that AMS' plan to reduce source inventory is a positive step towards reducing any potential for significant repercussions that could impact public health and safety should AMS cease to be a viable entity.

AMS indicated in its June 10, 1996, letter that approximately 40 curies of radioactive material that is stored onsite at the London Road facility is in a potentially dispersible form. This material consists primarily of dry solid waste, carbon granules and ion exchange resins stored in sealed 55-gallon drums or B-25 (steel) boxes. Given that this material is potentially dispersible, staff is concerned that continued storage of material increases the long-term likelihood that radioactive material may be dispersed into areas outside AMS' control.

The request to reduce the amount of the present financial instrument, and use those funds to dispose of the bulk metal, sealed sources and dry radioactive waste is premised on:

- o The importance of prompt action since the waste broker's proposal will be valid for a limited period of time. If NRC does not proceed expeditiously to approve the licensee's proposal, AMS may not be in a position to initiate the project.
- o The Licensee's operating funds are limited and are not sufficient to pay the costs of preparation, transfer and disposal of the material by the waste broker.

ENVIRONMENTAL REVIEW

Issuance of this license amendment is covered by the categorical exclusion set forth in 10 CFR 51.22 (c)(14)(xvi) from the requirement to prepare an environmental assessment or environmental impact statement. AMS was previously licensed to manufacture and distribute to specific licensees teletherapy and radiography units containing Cobalt-60 sources. The authorization of that activity is covered under a categorical exclusion set forth in 10 CFR 51.22 (c)(14)(xiii). The activities authorized by this amendment involve quantities and forms of byproduct material similar to those previously authorized and hence are covered by 10 CFR 51.22 (c)(14)(xvi). Transportation of the materials from the AMS facility to the Barnwell LLW disposal facility will be accomplished under a general license pursuant to 10 CFR Part 71 and is not part of this licensing action.

CONCLUSION

Based on information provided in this safety evaluation and in the licensee's June 10, 1996, and July 1, 1996 letters, staff concludes that License No. 34-19089-01 should be amended to authorize the licensee to proceed with the actions described in its July 1, 1996 amendment request: i.e., implementation of Tasks 1 and 2 of the BRP. Although the onsite operations are to be conducted under the AMS license, this amendment will be conditioned to require that the contractor's radiological health and safety procedures be submitted for NRC review and approval before any work begins. This approval is with the further understanding that any funds remaining, after Tasks 1 and 2 of the BRP have been paid, will be returned to Bank One for the purpose of increasing the value of the letter of credit.

The NRC staff acknowledges that the decommissioning funding instrument that will be in place, if AMS reduces the amount of the letter of credit, will be significantly less than what the staff has estimated the decommissioning costs to be. The NRC staff also notes, however, that by allowing AMS to take action to implement Tasks 1 and 2, the onsite source inventory will be significantly reduced. The licensee is attempting to take advantage of a window of opportunity provided by a waste broker and disposal facility. Staff believes that public health and safety will be served by AMS' proceeding with Tasks 1 and 2, even though implementation of those tasks will entail reduction of the letter of credit, inasmuch as those tasks will result in removal of the great majority of the cobalt-60 inventory at the site. This is with the understanding that AMS has committed in its July 1, 1996, letter to submit a revised Conceptual Decommissioning Plan and cost estimate by August 30, 1996. This staff approval is without prejudice to the final NRC staff decision on the acceptability or adequacy of the current decommissioning cost estimate.