

AMS

December 14, 1995

Northeast Ohio Regional Sewer District  
ATTN: Mr. William B. Schatz  
General Counsel  
3826 Euclid Avenue  
Cleveland, Ohio 44115-2504

Dear Mr. Schatz:

This refers to your letter of November 14, 1995, addressed to Mr. John Madera of my staff, regarding Advanced Medical Systems, Inc. I wish to clarify and respond to the following items from your letter.

- A. *"According to Lawrence English of my staff, you were informed on Wednesday, November 8, 1995, that your licensee Advanced Medical Systems, Inc. ("AMS") intended to discharge 3,000 gallons of water potentially contaminated with Cobalt-60."*

On November 8, 1995, we were informed by Mr. English that AMS intended to discharge 3,000 gallons of water from an outside storage tank which had been analyzed by AMS' contract laboratory and which showed no detectable cobalt-60 (Co-60).<sup>4</sup>

AMS' contract laboratory employs equipment with count times to achieve a Minimal Detectable Activity (MDA) of at least 20 picocuries per liter<sup>5</sup> (pCi/l) when analyzing water samples from AMS. Since the analysis of the water sample showed no detectable Co-60, the concentration of Co-60 in the water is less than 20 pCi/l. This is more than a factor of ten less than the U. S. Environmental Protection Agency (EPA) drinking water standard of 218 pCi/l for Co-60.<sup>6</sup> NRC does not consider this water to be contaminated with Co-60.

- B. *"You were informed that such a discharge was contrary to standing prohibitions of the Northeast Ohio Regional Sewer District ("District"), and that such discharge had the potential to create an interference with the operations of the District. You chose to do nothing, stating that unless the discharge creates a health and safety violation, the Nuclear Regulatory Commission ("NRC") can do nothing."*

---

<sup>4</sup> We note that on December 5, 1995, this water was discharged, after a temporary restraining order which was issued on November 13, 1995, barring AMS from discharging the water, was lifted.

<sup>5</sup> The actual MDA for this water sample, as listed in the fax AMS sent to NEORSO on 11/8/95, and to NRC on 11/17/95, is 6 pCi/l.

<sup>6</sup> Federal Register, Vol. 56, No. 138, July 18, 1991, page 33120, Appendix B - Beta Particle and Photon Emitters.

The NRC operates under Federal law. As we explained to Mr. English on November 8, 1995, NRC regulations do not prohibit AMS from discharging this water. NRC does not consider the discharge of 3,000 gallons of water with no detectable Co-60 to be an immediate threat to public health and safety, common defense and security, or the environment; therefore, no NRC action was warranted.

In addition, as explained to you in a letter dated June 16, 1994, "The Commission has expressed its view that the Atomic Energy Act of 1954 does not prohibit actions by state or local authority on bases other than protection of public health and safety from radiological hazards." In other words, NRC regulations that allow users of regulated materials to discharge to sanitary sewers do not compel a waste water treatment operator to accept those discharges. However, NRC does not have the legal authority to enforce the rules of waste water treatment operators.

- C. *"The purpose of this letter is twofold. First, it is to expressly inform you that all discharges from this facility are indeed prohibited. We understand that AMS has represented to you that they will not undertake evaporation of the wastewater they have collected until it appears that no alternative course is available. As other disposal means are now prohibited, you should take those measures to ensure that evaporation is commenced."*

We understand that discharges from AMS to the NEORSD system are prohibited by NEORSD; however, as noted above, NRC does not have the legal authority to enforce that prohibition. Moreover, other disposal means are not prohibited, and there is no radiological health and safety basis to require that evaporation be commenced at this time.

- D. *"Secondly, the purpose of this letter is to urge you to take those measures necessary to compel AMS to begin evaporation as soon as possible. At the TRO hearing, Dwight Miller, one of the attorneys for AMS, stated that if AMS did not get rid of the water it had accumulated, pressure on the facility will build up. This concerns us greatly, insofar as representatives of AMS have indicated repeatedly that should pressure build up on the facility, the facility is put in danger of imminent collapse."*

It is important to distinguish between the water stored outside the facility from the new underdrain system and manhole (rainwater and groundwater) and the water stored inside the facility (100,000 gallons of processed water from the basement and the old underdrain system and manhole). AMS has not indicated to NRC that it would evaporate the water from the new underdrain system and manhole. However, AMS has received permission from NRC to evaporate the processed water.

Regarding the pressure on the facility caused by rainwater and groundwater, NRC inspectors have confirmed that AMS has a system of pipes, pumps, and outdoor storage tanks in place which adequately removes groundwater so that the hydrostatic pressure on the facility is minimized. Thus, NRC does not believe that there is a risk of imminent collapse of the building.

E. *"Since there is existing NRC approval for AMS to evaporate the water accumulated at the facility, and other means of disposal are prohibited, the NRC should take those steps necessary to properly protect the neighborhood and environment around your licensee's facility by evaporating the collected wastewater."*

If "the collected wastewater" refers to the 3000 gallons of water AMS proposed to discharge, NRC does not consider this water to be contaminated with Co-60; thus NRC believes that the storage of this water does not present a radiological hazard.

If "the collected wastewater" refers to the 100,000 gallons of processed water stored inside the facility, the NRC technical staff has carefully evaluated the radiological characteristics of this water and has concluded that the storage of this water does not present a radiological hazard to the neighborhood around the AMS facility. The water contains approximately 40 microcuries ( $\mu\text{Ci}$ ) of Co-60, thus the average Co-60 concentration is 106 pCi/l. By way of comparison, this concentration is less than half of the EPA drinking water standard of 218 pCi/l for Co-60.

Furthermore, making the extremely conservative (and highly improbable) assumption that the 40  $\mu\text{Ci}$  of Co-60 could be concentrated into a point source, the exposure rate at one meter, ignoring any shielding, would be 0.05 millirem per hour (mrem/hr). At a distance of 100 meters from the source (the approximate distance from AMS to the nearest residence), the exposure rate, again ignoring any shielding, would be 0.000005 mrem/hr. These exposure rates may be compared with: (1) the average background exposure rate in Cleveland of approximately 0.005-0.01 mrem/hr, and (2) the limits in 10 CFR 20.1301, which limit the total effective dose equivalent to members of the public to 100 mrem in a year, and 2 mrem in any one hour. Thus, NRC believes that the storage of this processed water at AMS does not present a radiological hazard.

Should you have any further questions regarding AMS, please do not hesitate to contact me.

Sincerely,

Original signed by

Cynthia D. Pederson for  
James L. Caldwell, Deputy Director  
Division of Nuclear Materials Safety

See Attached Distribution

Northeast Ohio Regional  
Sewer District

-4-

Distribution:

Robert Meschter  
Radiation Safety Officer  
Advanced Medical Systems, Inc.  
121 North Eagle Street  
Geneva, OH 44041

Robert E. Owen, Administrator  
Radiological Health Program  
Department of Health  
246 North High Street, 3rd Floor  
P. O. Box 118  
Columbus, OH 43266

Michael R. White, Mayor  
City of Cleveland  
601 Lakeside Avenue  
Cleveland, OH 44114

Lisa Mehringer  
City of Cleveland Law Department  
601 Lakeside Avenue Room 106  
Cleveland, OH 44114

Erwin J. Odeal, Executive Director  
Northeast Ohio Regional Sewer District  
3826 Euclid Avenue  
Cleveland, OH 44115

Erv Ball, Deputy Director  
Cuyahoga County Board of Health  
1375 Euclid Avenue, Suite 524  
Cleveland, OH 44115

Michael Kalstrom, Secretary  
County of Cuyahoga  
Cuyahoga Emergency Management  
Assistance Center  
1255 Euclid Avenue, Room 102  
Cleveland, OH 44115-1807

Jane Harf, Chairperson  
Ohio State Emergency Response Comm  
1800 Watermark Drive  
P. O. Box 163669  
Columbus, OH 43216-3669

Marian Zobler  
U. S. Nuclear Regulatory Commission

bcc:  
Cynthia Jones, NMSS  
PUBLIC IE07  
AMS File

E-Mail:

Bruce Berson (BAB1)  
Bill Brach (EWB)  
Jim Caldwell (JLC1)  
Fred Combs (FCC)  
Donald Cool (DAC)  
Steve Crockett (SFC)  
Joe DeCicco (JXD1)

Jack Grobe (JAG)  
Cynthia Jones (CGJ)  
Tim Johnson (TCJ)  
John Madera (JRM4)  
Kevin Null (KGN)  
Cindy Pederson (CDP1)

Gary Shear (GLS)  
Mike Stein (MHS)  
Mike Weber (MFW1)  
Marian Zobler (MLZ)  
Bernie Bordenick (BMB)  
Josie Piccone (JMP1)

DOCUMENT NAME: B:SCHATZ.LTR \L 39

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure  
"N" = No copy

OFFICE	RIII	C	RIII	C	NMSS	C	OGC	C	RIII	C
NAME	Weber/cah		Madera		Cool		Zobler		Caldwell	
DATE	12/12/95		12/13/95		12/12/95		12/12/95		12/14/95	

OFFICIAL RECORD COPY

Via  
telephone

Via  
telephone