DOROTHY

Advanced Medical Systems, Inc.

121 North Eagle Street - Geneva, Ohio 44041
(216) 466-4671 FAX (216) 466-0186

July 3, 1995

Mr. John Madera
U. S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, Illinois 60532-9820

RE: Control No. 398538
License No. 34-19089-01

Dear John:

I have received an additional response to our Emergency Plan from the Northeast Ohio Regional Sewer District. Their comments consist of 65 pages.

I would like to answer all the responding agencies, including the USNRC's questions regarding our Emergency Plan in one comprehensive answer. In order to do so, I would like to request an additional 30 days to respond. The answers to the concerns on our Emergency Plan will be submitted to the USNRC in duplicate by August 7, 1995.

If you have any questions, please contact me.

Sincerely,

DAVID CESAR
Treasurer

DC/cs

E142

95

DOROTHY

Northeast Ohio Regional Sewer District

26 Euclid Avenue • Cleveland, Ohio 44115-2504 216 • 881 • 6600 FAX: 216 • 881 • 9709

July 3, 1995

Dwight A. Miller, Esq.
Stavole & Miller
1604 Illuminating Building
55 Public Square
Cleveland, OH 44113
VIA FACSIMILE

Re: Advanced Medical Systems, Inc. Proposed Reconnection

Dear Dwight:

Thank you for your letter of June 30, 1995. Regarding the discussion therein of a proposed new connection to the London Road interceptor, we would welcome a meeting on Friday, July 7, 1995. This meeting could begin at 9:30 a.m. in the conference room on the third floor of our Engineering Annex located on the north side of Euclid Avenue, a block east of the District's Administration Building.

Please let us know if you and your engineer can make this meeting. In the event that your engineer cannot make this meeting, please let us know when the meeting can be rescheduled to include him. It does not appear that the meeting would be productive without him.

To ensure that the meeting between your engineer and our engineering staff is as productive as possible, we emphasize the following points for his consideration prior to the meeting as issues to be discussed:

1. As was pointed out to you previously (See page 3, ¶ 1b, of our April 18, 1995 letter to you), the sampling manhole must include a 6' x 6' x 4' precast vault base, a flat transitional slab, 60" diameter risers, flat lid top, frame and cover. The sampling manhole pictured in your June 28, 1995 submission is undersized and not acceptable. The District must have adequate space to install and operate appropriate sampling equipment. The minimal criteria set forth in our April 18 letter were already as restrictive as we could tolerate. No downward adjustment is permissible.

2. As was stated in our June 30, 1995 letter to you, the alignment of the

D143

RECEIVED

ORIGINAL

JUL 10 1995

REGION II

proposed new lateral is unacceptable, since its flow will be contrary to that in the London Road interceptor. The District does not allow connections to run counter to the flow in an interceptor. The preferred connection is 0 - 45° to the direction of flow, with an absolute maximum angle of 90°. When lateral flow is not coincident to the interceptor flow, or at least close to coincident as possible, turbulence problems arise.

Turbulence is of particular concern in older, brick and mortar interceptors, where turbulence may act to scour away the mortar over time, impairing the integrity of the interceptor. Inasmuch as the original connection angle exceeds 90°, it would have been rejected had it been presented to the District for consideration. The proposed replacement is at an even steeper contrary angle, exacerbating the potential turbulence problem. This connection cannot be approved by the District.

The District suggests that AMS locates its proposed new manhole or sampling manhole south of the London Road tap-in. A manhole could be placed in the grassy area to the southeast of the entrance of the building, just inside the fence line. In this way, the connection angle could be appropriately less than 90°.

In addition, this connection would reduce the angle of flow into the new manhole from the present 38%. Such a steep slope puts a great deal of momentum into the flow, and during high flow events such as storms could subject the manhole to unnecessarily high scouring forces. Reducing the slope to the manhole could significantly decrease the flow velocity into the manhole, potentially increasing the useful life of the manhole and reducing maintenance or replacement costs.

In addition, Uniform Standards which have been adopted by the County, the City of Cleveland, and the District, and common engineering practices indicate that when a flow drop is 2-1/2' or greater, a standard drop manhole should be employed. In the proposed new connection, a standard drop manhole is not specified. Insofar as the standard drop manhole had worked in the past, why did AMS choose other than a replacement in kind? Again, too great a flow rate into the manhole will cause greater maintenance demands, with attendant costs.

Beyond the reconnection issues, there are several unresolved questions regarding AMS' plans for grouting the present lateral. The schemes outlined in correspondence we have seen so far do not provide adequate detail to determine fully the intended activities. The District has some background with respect to the abandonment of connections, however, and pass along the following observations as indicators of standard engineering practices:

A. A videotape of the piping to be conducted should be reviewed to determine the extent to which joints are misaligned or other gaps exist. This information is critical to establishing the most appropriate grout mixture, since too high a slump can lead to extrusion of the grout through gaps. Such extrusion can carry contamination out of the lateral and into the environment, hence must be avoided. Mr. Meschter had indicated that AMS had

videotaped the length of the lateral connection. Bringing this tape to Friday's meeting would be very helpful in evaluating the needs of the project.

B. The grout mixture itself should be chosen to produce a product with a specific gravity greater than about 1.5, to ensure that both water and air are excluded from the lateral. It must also be of such formulation that it can flow to the very end of the lateral. In addition, the formulation must be such that shrinkage is minimized as it cures. Because of its shrinkage, ordinary cement and water is not appropriate for this application.

A grout design mixture that has proven useful in other application is attached hereto for your reference, combining good specific gravity, pumpability, flow and shrinkage compensation characteristics. In the event you plan to use a different design mix, please bring that formulation to the meeting for discussion. Please also let us know who you intend to perform the actual mixing and installation of the grout.

C. As to the installation of the grouting itself, care must be taken to ensure that all of the air and water in the lateral are indeed excluded by the grout as it fills the lateral. This is a combined result of both the grout consistency and the application method. Obviously, no one could expect any grout mixture to reach the end of the lateral by merely shoveling or troweling the mixture down the manhole. Some positive-pressure transfer means should be used to pump the grout into the lateral. One such method is shown in the attached drawing.

To ensure that displacement of water and air is occurring, a standpipe should be installed as shown in the drawing. Pumping should continue until a continuous stream of grout is observed coming out of the standpipe. Gouts of water or air pockets indicate that displacement is still ongoing.

D. As we know from the events of April 10, 1995, the compression plug in the lateral has a finite pressure rating. Accordingly, provision should be made to either conduct the grouting operation in stages, or to brace the compression plug in until the grout has cured. Logistically, it appears that the overall easier and faster method would be to partially fill the lateral, let it cure enough so that the pressure of additional grout would not be transmitted, and then add the rest of the grout.

As mentioned above, we would like to discuss each of the above issues at the meeting Friday. Let us know your availability as soon as possible. In addition, it would help if you forwarded the

various documents we requested in our June 30 letter, at your earliest opportunity. While we understand your position that the plans submitted to the City of Cleveland involve issues separate from those of concern to the District, we would nonetheless appreciate the documents as soon as possible.

Very truly yours,

Lawrence K. English

Lawrence K. English
Assistant General Counsel

encl.

cc: James L. Caldwell, NRC Region III
Martha McCorkle, City of Cleveland
Erwin J. Odeal, NEORSD
Rod Dell'Andrea, NEORSD
Richard N. Connelly, NEORSD
Sara J. Fagnilli, NEORSD

ENGINEERING • TESTING • INSPECTION
APPLIED CONSTRUCTION TECHNOLOGIES, INC.
[illegible] HAYES DRIVE • SUITE C • CLEVELAND OHIO 44131 • (216) 459-TEST

2-08-95
2-28-95 (28D)
3-28-95 (56D)

Laboratory 6534
Laboratory Report No. 18
File No. 9306.15
P.O. No.
Bldg. Permit No.
Field Report No. 454
Date of Inspection 30 January 1995
Date Cylinders in Lab 03 February 1995

GROUT INSPECTION & TESTING

CLIENT: NEORSD
PROJECT: BLUESTONE ROAD, CONTRACT NO. 1
ARCHITECT: J.D.J. AND ASSOCIATES, INC./DAWN ENGINEERING
DATA WAS REPORTED TO: (*) MR. M. CHEETHAM (NEORSD)
CONTRACTOR SUB: PACIFIC INTERNATIONAL GROUT CO.
CONCRETE SUPPLIER: COLLINWOOD CONCRETE
FIELD CURE BOX: ☒ YES ☐ NO

CONCRETE CLASS 500 PSI NO. CU. YDS. 445 AMBIENT WEATHER: MOSTLY SUNNY 34-12°F

Indicated MIX PROPORTIONS			BRAND OR SOURCE	GENERAL POUR LOCATION
CEMENT	410/410	lbs.	MEDUSA TYPE I/FLY ASH CLASS "F"	
FINE AGG.	2254	lbs.	SAMCO SAND	TUNNEL BACKFILL
COARSE AGG.		lbs.		A.S. NO. 7 TO A.S. NO. 8, BETWEEN STATIONS
ADDITIVE		oz.		158+94± TO 168+85± (991'±)
ADDITIVE		oz.		
WATER	536	Lbs.	HEATED	
INTRUSION AID	36	Lbs.	MERLE BRAND FOAM	

TEST CYLINDERS CAST NOMINAL 3"DIAMETER BY 6" LENGTH

TRUCK NO.	TIME EACH ARRIVE DEPART	QTY. (Yds³)	CYLINDER IDENTITY FIELD	LAB	SLUMP (IN.)*	AIR %	TEMP. °F *	WATER ADDED (GAL.)	SPECIFIC LOCATION	(2)	COMPRESSIVE STRENGTH, P S I 28 DAYS	56 DAYS	DAYS
281	1110	8.5	1	153	---	---	81	0	UNIT WEIGHT (A.M.)		590		
			2	154					GROUT = 135.4 PCF		530		
			3	155					FOAMED = 94.4 PCF			570	
			4	156								560	
EXTRA SET	FROM	A.M.	SAMPLE										
281	1110	8.5	5	157	---	---	81	0	CYLINDERS 157 THROUGH 160				
			6	158					RETURNED TO NEORSD ON				
			7	159					02-08-95.				
			8	160									
208	1221	7	9	161	---	---	80	0	UNIT WEIGHT (P.M.)		570		
			10	162					GROUT = 134.6 PCF		450		
			11	163					FOAMED = 95.1 PCF			680	
			12	164								590	

(1) METHOD USED FOR AIR TEST: G=GLASS INDICATOR P=PRESSURE METER R=ROLLA-METER
(2) TYPE OF BREAK: A=SPLIT B=SHEAR C=CONE D=CONE SHEAR
* INDICATES SUPERPLASTICIZER

REMARKS: Grout arrived on site via ready-mix truck. Merle brand foam intrusion aid was added on site by a representative from P.I.G. Co. Sampling was performed by P.I.G. Co. The extra set, cylinders 5 through 8, will not be subject to oven dry conditions prior to compression testing per ASTM C-495.

Glenn Harrah, Field Technician
Andrew Wozniak, Field Technician
Rabih Wakim, Field Technician

GEORGE WOZNIAK, C.E.T.
MANAGER-MATERIALS LABORATORY

lcc: NEORSD, M. Cheetham ✓
NEORSD, Mr. Vasulka
Kassouf Co., R. DiPuccio
Dawn Engineering, Inc., J. Zurawski
J.D.J. and Associates, Inc., T. G. Sisley
ACT, G. Harrah

THE MEARL CORPORATION

Pacific International Grout Company works closely with The Mearl Corporation, located in Roselle Park, New Jersey, to develop products for geotechnical applications. For over 40 years, The Mearl Corporation Foam and Chemicals Division has been of service to the cellular concrete industry and is recognized by the construction industry worldwide for its technical expertise and product excellence. Division General Manager Harold Umansky heads a staff of highly qualified professionals who are actively engaged in establishing industry standards set by the industry's leading technical societies.

Mearl Geocell

Mearl Geocell is a rigid cellular structure composed of hydrated portland cement in which air voids are uniformly distributed as small, homogeneous, noninterconnected cells. It is a concrete where air is the aggregate. The air content may be varied to produce densities from 20 pcf to 120 pcf with compressive strengths from 20 psi to over 2,500 psi. The air cells are introduced into the cement slurry by means of a separately generated stable, microbubbled, aqueous foam. Simple, calibrated equipment combines water, compressed air and Mearl's Geofoam Liquid Concentrate in fixed proportions to produce up to 40 cfm of preformed foam.

Mearl Geocell is manufactured at the job site by mixing a portland cement slurry, with or without fine aggregate such as flyash or sand, with Mearl's pregenerated aqueous foam. When the cement paste surrounding each air bubble or cell hardens, the foam is stabilized and cellular concrete is created.

The high quality of Mearl's pre-generated foam enables Mearl Geocell to withstand vigorous mixing and pumping long distances to the point of placement.

Advantages of Mearl Geocell include:

- Low Cost
- Places easily by pump
- Flows a long way — high slump
- Positive Fill
- Lightweight
- Insulating
- May be designed for almost any compressive strength
- Environmentally Safe - Non-Hazardous & Non-Polluting
- Rapid Installation
- Non-Corrosive
- Excellent freeze/thaw resistance
- Excellent shock absorber
- Requires less bulkheading

Technical data on Mearl Geocell is included for your information.

Properties of Cellular Concrete

Compressive Strength varies from 20psi to 2,000psi. In common with other types of concrete, at constant water/cement ratio the compressive strength of cellular concrete will vary with the cement factor so long as the density is held constant. Therefore, at a given final density, the strength can be increased simply by increasing the cement content prior to adding the foam. At any given proportion of cement, aggregate and water, the compressive strength varies directly with density or inversely with the foam content.

Thermal Conductivity or "k" factor, varies only with density. Data information which illustrates the quantitative relationship is included in this document.

Drying Shrinkage. As with all concretes, the drying shrinkage increases with the cement factor. For low density insulating concretes used in roof decks and lightweight fills, this is about 0.2 to 0.6%. The higher density concretes in the 100 pcf range have a drying shrinkage of about 0.06%, again depending somewhat on the cement factor, the fineness modulus of the sand, the type of aggregate and the water/cement ratio.

Modulus of Elasticity. The modulus of elasticity, E_c is the modulus at 0.5 $f'c$ that is at one half the compressive strength. In lieu of test data for any given mix it may be caluclated by means of the formula (from ACI-318) E_c=33w 1.5f' c 0.5 in which w is the oven dry density of the concrete.

Thermal Expansion. The linear coefficient of thermal expansion is similar to that for steel, between 5 and 7 x 10^{-6}, so that it may be reinforced in the same manner as conventional concrete, using mesh, reinforcing bars or proprietary embossed galvanized steel forms.

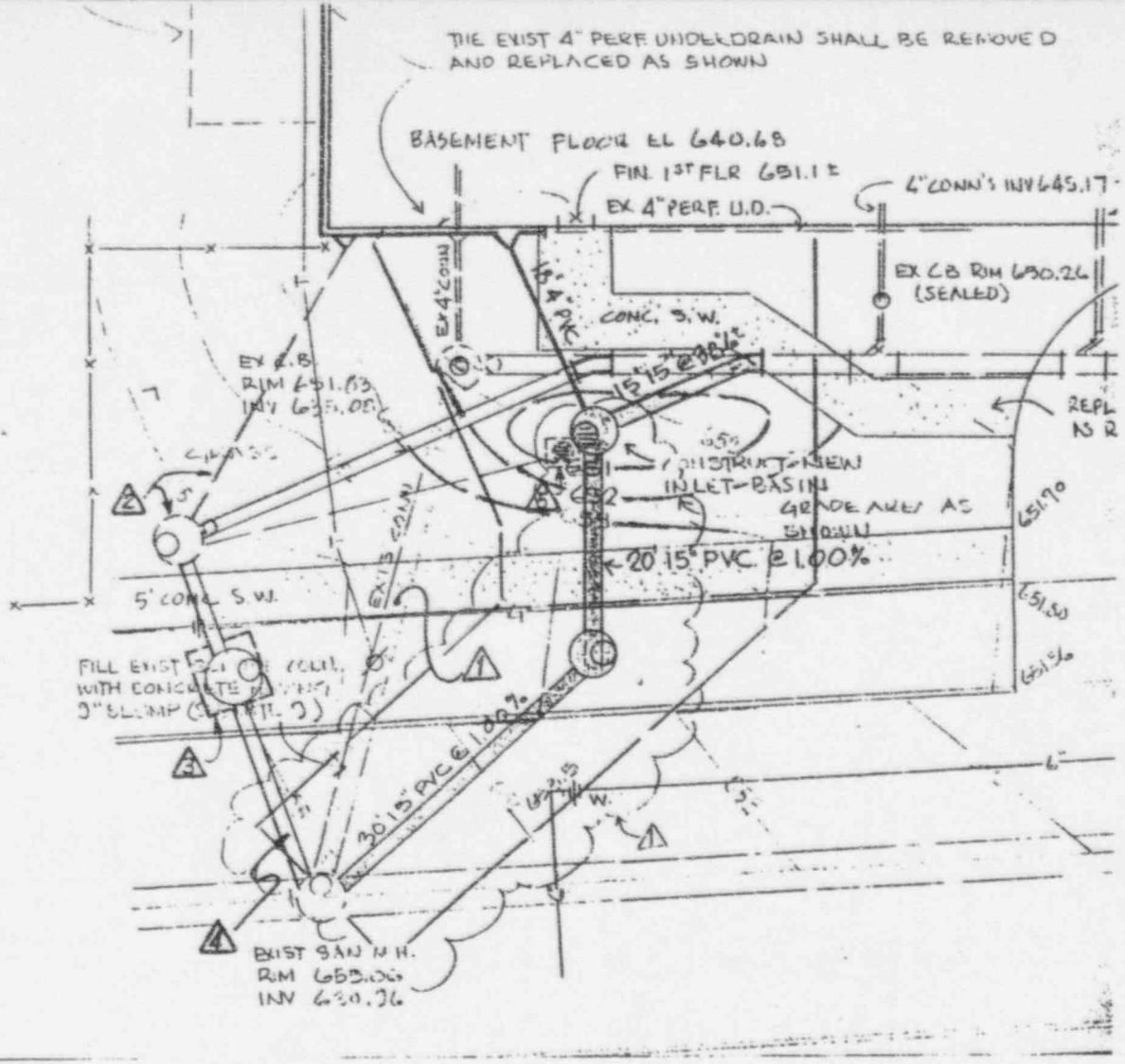
Durability. In freeze/thaw stability, cellular concretes show markedly superior durability for either precast or cast-in-place wall construction. The low density material has also been tested at extremely low temperatures for cryogenic applications and will withstand thermal shock with liquid nitrogen. When used for light residential pavements or sidewalks, cellular concrete at densities of 100 pcf have proven far more resistant to the effect of salts than conventional sand and gravel concretes.

SPECIFICATIONS: Mearl Geofoam Liquid

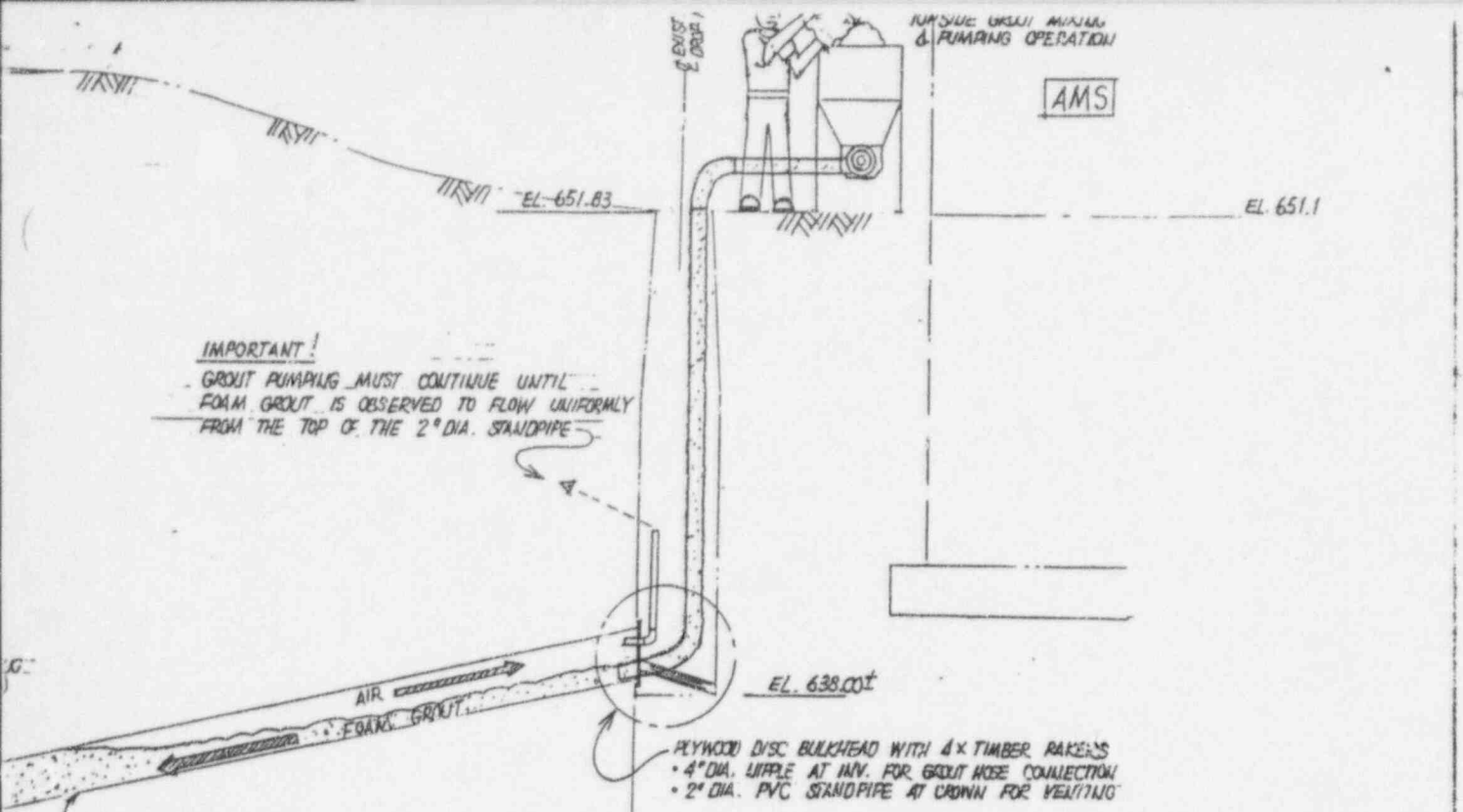
Mearl Geofoam Liquid is an aqueous concentrate of a surface active Polypeptide-Alkylene polyol condensate, specially formulated to yield a tough, stable, voluminous microbubbled foam. The foam is used for producing cellular or foamed concrete and cement slurries used for replacement of unstable soils, density controlled load relief, void fills and similar geotechnical applications.

No harmful effect to the Mearl Geofoam Liquid is sustained by exposure to temperature extremes. It is completely stable to repeated freeze-thaw cycles and is readily restored to its original fluid condition by storing for a short period at ambient working temperatures.

Mearl Geofoam Liquid is compatible with many com-



1. SUBMIT GROUT DESIGN MIX ; REVIEW VIDEO OF EXISTING 15" DIA. LATERAL FOR JOINT MISALIGNMENTS & CRACKS (GROUT MIX CAN BE MODIFIED TO ACCOMMODATE CONDITIONS)
2. PROVIDE NEW STD. DROP MANHOLE (WHEN DROPPING FLOWS 2.5' OR GREATER) CONNECT FOUNDATION DRAIN
3. NEW SAMPLING MANHOLE TO MEET MEORSD CRITERIA (PG. 3, PAR. 16 , MEORSD LETTER OF 4/18/
4. MAINTAIN NEW CONNECTION ANGLE TO NOT GREATER THAN 90°
5. ...H BASIN (AS REQUIRED); CONNECT TO NEW STD. DROP MANHOLE



NOTES:

1. FOAM GROUT SHALL BE PUMPED IN A CONTINUOUS OPERATION ALLOWING MATERIAL TO FLOW FROM HIGH END TO LOW; BULKHEADS SHALL BE LEFT IN PLACE OVERNIGHT & REMOVED THE FOLLOWING DAY.

2. IN THE EVENT PLYWOOD BULKHEAD CANNOT BE INSTALLED IN LOUDOUN AVE. MANHOLE, FOAM GROUT SHALL BE PLACED IN TWO STAGES; GROUT LOWER HALF OF PIPE AND ALLOW GROUT TO TAKE ITS INITIAL SET (APPROX. 2 - 2½ HRS). GROUT UPPER HALF OF PIPE TO COMPLETION.

OH-GC

SERC

"Working to improve statewide preparedness and response to chemical emergencies and to improve public awareness of potential chemical hazards."

Ohio State Emergency Response Commission

Emergency Planning and Community Right-to-Know
P.O. Box 163669, 1800 WaterMark Drive
Columbus, Ohio 43216-3669

George V. Voinovich
Governor

July 5, 1995

David Cesar, Treasurer
Advanced Medical Systems, Inc.
121 North Eagle Street
Geneva, Ohio 44041

Dear Mr. Cesar:

Please find enclosed a copy of Resolution 95-74 approved by the State Emergency Response Commission (SERC) at its June 16, 1995 meeting, and a copy of the public notice regarding the SERC's intent to designate Advanced Medical Systems, Inc., 1020 London Rd. Cleveland, Ohio as an additional planning facility. With the approval of Resolution 95-74 by more than sixty percent of the voting members the SERC is hereby announcing its intent to issue an order to make Advanced Medical Systems, Inc. subject to the chemical emergency planning process found within Sections 3750.04 and 3750.05 of the Ohio Revised Code, also enclosed.

The Commission appreciates the presentation of Dwight Miller, Esq. on behalf of Advanced Medical Systems at its April 12, 1995 ensuring that all interested parties were provided an opportunity to speak to the SERC.

If you, or representatives of Advanced Medical Systems, Inc. wish to provide written comment to the SERC, send them to my attention at the address as indicated in the enclosed public notice so that they may be distributed to SERC's voting members prior to August 14, 1995.

Sincerely,

Kenneth A. Schultz, Manager
Chemical Emergency Preparedness and Prevention Section

cc: SERC Members

enclosure

D/44

PUBLIC NOTICE

DESIGNATION OF ADDITIONAL PLANNING FACILITY

CUYAHOGA COUNTY

The State Emergency Response Commission (SERC) is hereby announcing its intention to issue an order to require Advanced Medical Systems, Incorporated (AMS) of 1020 London Rd., Cleveland, Ohio to be subject to the emergency planning requirements of Sections 3750.04 and 3750.05 of the Ohio Revised Code. In response to the Cuyahoga County Local Emergency Planning Committee's (LEPC) request, the Commission evaluated the facility's size, nature of operations, and its proximity to the community. It is believed that designation as an additional planning facility will enable the LEPC to conduct a risk analysis and develop a site specific emergency response plan for AMS. The LEPC has developed site specific emergency response plans for 305 facilities possessing "extremely hazardous substances" within Cuyahoga County as required by Sections 3750.04 and 3750.05 of the Revised Code. AMS was found to possess cobalt 60 in non-sealed sources. Cobalt 60 is not one of the 360 listed chemicals designated as "extremely hazardous substances." Therefore, to bring this facility under the emergency planning requirements of the Emergency Planning and Community Right-to-Know Act, Chapter 3750 of the Revised Code, the SERC must issue an order designating AMS as an additional planning facility.

Section 3750.05 requires the SERC to seek written public comment on its intent to issue such an order. Comments are to be submitted to:

State Emergency Response Commission
c/o Ohio EPA/DERR
1800 WaterMark Dr.
Columbus, Ohio 43215-1099

Written comments must be received within 45 days of the date of this notice. The SERC will vote on whether to issue an order designating AMS as an additional planning facility after the end of the comment period.