STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
1035 OUTER PARK DRIVE
SPRINGFIELD, ILLINOIS 62704
217-785-9900
217-782-6133 (TDD)

Jim Edgar
Governor

Thomas W. Ortciger
Director

June 1, 1995

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

Dear Mr. McCann:

The Department has recently received a request from a consultant operating in Illinois who wishes to receive and incorporate depleted uranium "sand" into Type A container for shielding purposes. The consultant has requested an exemption for distribution of these containers under our 32 Ill. Adm. Code 330.30. The Department does not believe that these containers will meet this or any other exemption.

The Department's licensing staff has sent the consultant in question a request for additional information to assist in the evaluation of this product (see Attachment I). With this in mind, the Department would like to make a technical assistance request from your office regarding the feasibility of this request and the possible options regarding evaluation and licensing of these containers. We have enclosed a copy of the licensee's request for your review.

If it is determined that these containers meet an exemption for source material, the Department would like to carefully coordinate the issuance of the IDNS license for possession and use of the depleted uranium with the issuance of the NRC license for distribution. Illinois would not want our licensee to receive this material unless they have a market for distribution or a means of disposal for this material.

Thank you in advance for your assistance in this matter. Should you wish to discuss this matter further, please do not hesitate to contact me or Joseph Klinger, Head of Licensing.

Sincerely,

Steven C. Collins

Steven C. Collins, Chief
Division of Radioactive Materials

SCC:CGV

Enclosure

Attachment I

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
1035 OUTER PARK DRIVE
SPRINGFIELD, ILLINOIS 62704
217-785-9900
217-782-6133 (TDD)

Jim Edgar
Governor

Thomas W. Ortciger
Director

June 1, 1995

RADIOACTIVE MATERIAL LICENSE
IL-01013-01

Mr. Stan A. Huber
President
Stan A. Huber Consultants, Inc.
200 North Cedar Road
New Lenox, IL 60451

Dear Mr. Huber:

The Illinois Department of Nuclear Safety has received your letter dated April 27, 1995, requesting an additional jobsite. The preliminary review of your request is complete, the following additional information is necessary:

1. Your check in the amount of $229.80 is insufficient for the activities listed on your application. The appropriate fee due the Department for this action is $418.08, based on category 101I of 32 Ill. Adm. Code 331, Appendix B. Please remit the balance of $118.28 within 30 days. Checks or money orders should be made payable to the Illinois Department of Nuclear Safety. Payments are not accepted in cash. Please forward your payment to the Division of Radioactive Materials at the address stated above. If during the review process, it is determined that you are a distributor under your Illinois license, additional fees will be assessed (refer to Item 21 of this letter).

2. Describe the chemical and physical properties of the sand. Is the sand contaminated? Is the depleted uranium (DU) incorporated into sand or is the material in the form of tailings? Is it a homogeneous mixture?

3. Please indicate the source of your DU? Is the sand a waste product or a byproduct of another licensed manufacturing process? If so, please indicate the state of origin and license number.

4. Please indicate the maximum activity of material you plan to possess at any one time.

5. Please submit a risk/benefit analysis for your product. Will the DU/concrete mix provide substantially greater shielding properties than just the concrete alone? What will the container be used for that requires this additional shielding? You should evaluate efficiency of shielding and determine a transmission factor for this shielding material for the various isotopes to be stored in these containers. In addition, possible doses or uptakes by end users of your product should be assessed and considered in the overall analysis of the product.

6. Regarding Item 4 of your letter, I am not following your concentration calculations for the concrete mixture. It appears that your figure for the total activity (9.07E5) to be added to the mixture is somewhat low. This figure actually appears to be in units of pCi/lb. Please check your figures and reply accordingly.

7. Please indicate the methods used to manoeuver this container. At 1400 lbs., it would appear to be extremely difficult to manoeuver as a transportation container.

8. Regarding Item 5 of your letter, this exemption is clearly directed at uranium metal. Sand/soil/concrete does not appear to meet this exemption. Please refer to question 2 regarding the form of this material.

9. Please indicate the amount of removable contamination that will be present at the concretes surface when in place as shielding. If the concrete crumbles over time, will residual contamination at customer's facilities be significant?

10. Regarding Item 11 of your letter, please indicate what surveys for alpha contamination will be performed and what instrumentation and action levels will be used for these surveys.

11. Please submit procedures for performing air samples in the work place to include:

-Type of air sample to be taken (grab or continuous).
-Analysis methods.
-Frequencies of sampling.
-Calibration of air sampling equipment.
-Action levels of sampling for initiating bioassays.
-Use of alarms to indicate when action levels are exceeded.
-Ensuring that breathing zone samples are taken.

12. You must implement a respirator protection program to meet 32 Ill. Adm. Code 340.730. Please submit such a program.

13. Please submit procedures for use of personnel protective equipment. Coveralls, booties and gloves, in addition to any respiratory protection equipment, should be worn to prevent contamination of workers and their clothing. If any laundering of contaminated clothing will be performed, procedures for laundering, monitoring and re-issuance of these items should be addressed.

14. Regarding Item 15 of your letter, there would appear to be significant waste produced particularly in the form of contaminated items including clothing, wipes, etc. Please address disposal of these items. In addition, if your customers wish to dispose of these containers what options are available to them? Will you accept returned containers or must they dispose of these containers independently?

15. Please submit calculations estimating the airborne concentrations released to restricted and unrestricted areas in accordance with Appendix O of our guide.

16. Please submit a bioassay program for your employees to include frequency of sampling (baseline, routine, final, special case), action levels and analysis methods including sample calculations for determining final results. Procedures for calculating doses from bioassay results and for including these as part of your employees TEDE should be addressed.

17. Please specifically identify use and storage areas on your facility diagram to include receipt and storage areas, production areas, waste storage areas, etc.

18. Please submit a description and diagram of your ventilation systems documenting flow rates for supply and exhaust vents and confirming that production areas are at negative pressure in relation to unrestricted areas at the facility. In addition, a procedure for testing ventilation systems should be submitted including provisions for 6 month testing. In addition, a sample record used for documenting these surveys should be submitted and should include the date of measurement, results of ventilation rate measurements, manufacturer model and serial number of measurement instrument used, and the identity of the individual performing the measurements.

19. Please submit a training program for users of DU under your license in accordance with Item 11 of our Instructional Set 48.6.

20. Please be aware that you will be required to post financial surety for your operations based on 32 Ill. Adm. Code 330.250 of our regulations if you total activity exceeds 100 mCi or if your source material is in the form of tailings or sludge. Please address these items as necessary I have enclosed a guide on this matter for your review.

21. If your containers are deemed to meet the exempt distribution requirements, you will be required to obtain an E-distribution license from NRC. For these items, NRC authorizes the distribution side of the operations while Illinois licenses the possession and use of the materials. With this in mind, we have sent a copy of your request to NRC, Region III for evaluation against their standards.

Sincerely,

Charles G. Vinson
Licensing Section
Division of Radioactive Materials

CGV:sld

Enclosure

sahci Consultants to Nuclear Medicine • Radiology • Nuclear Industry

AN A. HUBER CONSULTANTS, INC. ☐ 200 NORTH CEDAR ROAD ☐ NEW LENOX, IL 60451 ☐ (815) 485-6161 ☐ FAX (815) 485-4433


June 7, 1995

Charles G. Vinson
Licensing Section
Division of Radioactive Materials
State of Illinois
Department of Nuclear Safety
1035 Outer Park Drive
Springfield, IL 62704

Re: Response to your letter dated June 1, 1995 regarding our Radioactive Materials License IL-01013-01 Pending Amendment

Dear Mr. Vinson:

We have answered your questions in the same order as listed in your letter.

1. Enclosed is the additional $118.28 balance due on the pending amendment.

2. The sand (silicon oxide) is contaminated with depleted uranium metal in levels not to exceed 2000 pCi/gram. The source material is not in the form of tailings or sludge. The mixture will not be completely homogenous.

3. The specific facility that has about 300 cubic yards of this marterial is Alliant Tech Systems in Wilmington, IL. Our amendment at this time could be made to use that single client's material into usable shielded containers by mixing the D.U. sand along with high density concrete. The state of origin is Illinois and we believe your Department has information that this material is a byproduct of another manufacturing process.

4. We plan to possess no more than 99.9 millicuries at any one time.



JUN 13 1995

5. Two benefits will be established by using the Depleted Uranium as shielding:

   a. The contaminated sand will be recycled into usable shielding material. This sand will not be placed into the ground as waste, but will save disposal space by using the material as a shielding component.

   b. D.U. is twice as dense as lead. Therefore any D.U. material which is in the sand will add additional shielding.

   Since the D.U. is incorporated into concrete which is in solid form inside steel drums designed for storing, transport and disposal of radioactive material, it is virtually impossible for the end user to obtain any significant doses or uptakes from these quantities of D.U., which are classified as "Unimportant Quantities of Source Material", even before solidifying into concrete.

6. The true calculations are as follows:

   140 lbs (6.35 x $10^4$ grams) x 2,000 pCi/gram = 1.27 x $10^8$ pCi

   1.27 x $10^8$ pCi / 1400 lbs (6.35 x $10^5$ grams) = 200 pCi/gram

   200 pCi/gram is greater than .05 percent by weight (166 pCi/gram)

   Our facility will accept contaminated sand not exceeding 2,000 pCi/gram but will not add higher concentrations than 1600 pCi/gram into the container.

   140 lbs (6.35 x $10^4$ grams) x 1660 pCi/gram = 1.05 x $10^8$ pCi

   1.05 x $10^8$ pCi / 1400 lbs (6.35 x $10^5$ grams) = 166 pCi/gram

7. Our drums will most likely be manufactured on wooden pallets. Once on pallets the drums can be maneuvered with a fork lift. It has also been proven that a drum specific hand dolly can move the product. Additionally, our initial proposed customer (Westinghouse) also has the moving and handling equipment at their facility.

8. The D.U. will be delivered to our facility in the form of D.U. metal interspersed throughout sand/soil. The exemption does not specify that the D.U. metal must be in pure form. In fact, with the "Unimportant Quantities" of D.U. being "diluted" by sand/soil mixture, these materials should be even safer from a health physics viewpoint, than the use of pure form of Depleted Uranium metal.

9. The amount of removable contamination at the surface of the concrete will not exceed 33 dpm/100 $cm^2$ (per 32 Illinois Adm. Code Part 34, A.P.. A). Because we are working with unimportant quantities, as defined by regulations, the customer does not have the possibility of receiving significant contamination. Further, Westinghouse is the intended customer for these products and they have an effective radiation safety program.

10. The weekly and monthly removable contamination surveys will be analyzed using an Alpha sample counter. The manufacturer and model number are:

| | |
|---|---|
| Manufacturer: | Ludlum |
| Model: | 2200 with Ludlum Model 43-10 Alpha Sample Counter, with a Ludlum Model 44-7 thin end window Alpha, Beta, Gamma Detector as a back-up detector |

11. Continuous air samples will be taken using Research Appliance Company, Model #209101 personnel monitors at the beginning of operations. After the first three months of drum production, the monitoring results will be reviewed to determine if continued use of these monitors are necessary. We will calibrate the air samplers according to the manufacturer's instructions.

The action levels of the air samples which would initiate bioassays would be ten percent of the ALI set forth in Table 2, Column 1 and 2 of Appendix B of 10CFR 20.1001-20.4001. If 200 DAC-hrs are accumulated, bioassays will be implemented.

Breathing zone samples will be taken with the personnel air monitors stated above.

12. The respirator protection program is attachment No. 1 with this letter.

13. At all times when working with the open packages containing the contaminated sand/soil, protective clothing will be worn (coveralls, booties, gloves, dust mask and safety glasses). A respirator will be worn if deemed necessary by calculations from #11 above. The clothing will be surveyed every day of use. If elevated readings are present, an attempt to decontaminate will be performed using a HEPA-filtered vacuum. If the exposure rate does not decrease, the clothing will be considered radioactive and placed in a drum or other appropriately labeled storage container.

14. As stated in item 13 above, if clothing is contaminated it will be treated as radioactive waste and will be stored on site until disposal is arranged, most

likely through Envirocare of Utah. If our customers would like to return their containers to us they may. They must be empty with approximately the same exposure rate as when they were shipped from our facility. However, we believe our current intended customer (Westinghouse) would either use the drums or dispose of them independently.

15. Our facility will not use radioactive gas and/or volatile material. Depleted Uranium (D.U.) is very heavy material and the contaminated sand we saw at Alliant Tech Systems does not appear capable of producing much dust. If necessary, this amendment could be restricted to this one project of using Alliant Tech Sand to make containers for Westinghouse.

16. All personnel who would work with D.U. will have a baseline reading performed at Argonne National Laboratories or a commercial vendor such as CEP Labs prior to work commencement. Only in special cases, stated in number 11 above, will additional bioassays be performed. The TEDE will be calculated by air concentrations derived from the personnel air monitors.

17. See attachment No. II (The area our firm will occupy is highlighted. These areas are marked #48, 50 and 51.)

18. The facility is still under construction, but our part of the building is located along outside walls and has inner walls being built to separate it from the rest of the buidling. There will be at least a 200 CFM exhaust fan installed to assure negative pressure. There are no direct air supply vents to the area. The proof of negative air pressure will be submitted to the IDNS prior to container construction. Our ventilation system will be checked on a semi-annual basis.

19. We will implement an initial training inservice and annually thereafter for all personnel who may come in contact with the source material. Appendix G of your instructional set 48.6 revision 7 will be followed.

20. Financial surety will not be an issue because our total activity of D.U. at any one time will not exceed 100 mCi and the source material is not in the form of tailings or sludge.

We hope this is sufficient information to continue review of our application. If you have any additional questions, please contact me or Steven M. Herman at (815) 485-6161 for FAX (815) 485-4433.

Sincerely,

Stan A. Huber

Stan A. Huber
President

SAH:ghh
Enclosure

Attachment 1

## Respirator Protection Program

1. Dust masks will be worn for respiratory protection unless the health physics personnel have determined that more protection is needed. The determination of protection will be derived from the DAC and amount of time spent in the area.

2. Only respirators that have been tested and certified by the NIOSH and MSHA will used.

3. All individuals who may use respirators must have a physician state that the user is physically able to use the respirator prior to use and at least every 12 months thereafter.

4. Air sampling will be performed on a continuous basis to identify potential hazards, permit proper equipment selection and to estimate internal exposure.

5. Each individual respirator will be tested as follows:

***Negative Pressure Test***: Close off the inlet of the canister or the breathing tube by covering it with the palm of the hand or by replacing the tape seal, gently inhale so that the face piece collapses slightly, and hold the breath for 10 seconds. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is satisfactory.

***Positive Pressure Test***: If necessary, remove the exhalation valve cover, close off the exhalation valve with the palm of the hand, and exhale gently so that a slight positive pressure is built up in the face piece. If no outward leakage of air is detected at the periphery of the face piece, the face fit is satisfactory.

***Irritant Smoke Fit Test:***

1. Soap off ends of smoke tube using gloves to activate the tube.
2. Attach the smoke tube to the applicator bulk.
3. Close your eyes and breathe normally.
4. Pass the applicator under your respirator while giving a firm squeeze to the bulb.
5. If you can smell or taste the smoke, refit your respirator and repeat the smoke test. If a good fit cannot be obtained, contact the health physicist for assistance. DO NOT use the respirator.

6. Testing for operability immediately prior to each use will be performed by the above mentioned "Negative Pressure" and "Positive Pressure" procedure.

7. Any personnel may leave the area at any time for the relief of respirator use due to equipment failure, physical or psychological distress, procedural or communication failure, or any other conditions that may require relief.

8. The respirators will be used and worn within the manufacturer's expressed limitations.

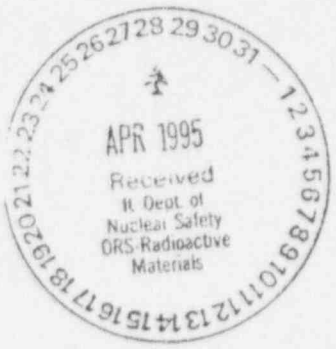
9. No individual should exceed four (4) continuous hours of respirator use without at least a 15 minute break.


Attachment II
#46
#48
3334 ft.²
#49
#47
Storage area + Waste area
outside
#50
1500 ft.²
#51
1225 ft.²
production area
receipt area
outside
outside
N
Alessio Industrial Park
800 Moen Avenue
Rockdale, IL
[#48, 50 & 51 show S.A. Huber Consultants, Inc area]

sahci Consultants to Nuclear Medicine • Radiology • Nuclear Industry

STAN A. HUBER CONSULTANTS, INC. ☐ 200 NORTH CEDAR ROAD ☐ NEW LENOX, IL 60451 ☐ (815) 485-6161 ☐ FAX (815) 485-4433

April 27, 1995




Joseph Klinger
Head, Licensing Section
Division of Radioactive Materials
Illinois Department of Nuclear Safety
1035 Outer Park Drive
Springfield, Illinois 62704

RE: Amendment to license #IL-01013-01

Dear Mr. Klinger:

We request amendment to our Illinois Radioactive Material License #IL-01013-01 to add:

1. A specific temporary job site, for up to three (3) years, at the following address:

   Alessio Corporation
   800 Moen Avenue
   Rockdale, Illinois 60436
   James N. Alessio, President
   Phone (815) 725-5513

   This facility is located about eight miles from our New Lenox, Illinois facility. A facility sketch is attached as "Attachment #1". The reason we expect to use this Rockdale facility, for less than three years, is because we would search for a permanent industrial building we would own, rather than lease.

2. Stan A. Huber Consultants, Inc. (SAHCI) usage of radioactive materials at the Rockdale, Illinois location will be for the purpose of receiving sand or soil, containing Depleted Uranium (D.U.) in concentrations of less than 2000 pCi/gram, for the purpose of mixing these materials with cement and aggregate to make solid concrete D.U. shielding in steel drums. These shielded containers (typically 19 gallon, 55 gallon or 85 gallon drums) will be Type A containers

and will be tested to meet these DOT requirements by either the U.S. Army in Savannah, Illinois and/or by Skolnick, the drum manufacturer in Chicago, Illinois. We will have these test certificates on file, as these documents will be required by our prospective customers.

3. Depleted Uranium (D.U.) in which the source material is by weight less than one-twentieth of 1 percent (0.05 percent) of the mixture, compound, solution or alloy is considered unimportant quantities of source material under Title 10 CFR 40.13 (a). It is our intent to use D.U. that fits that classification which grants exemption from licensing. The IDNS equivalent is 32 Ill. Admin. Code Part 330.30(a).

4. We (SAIC) will need a license amendment to receive the D.U. material because it may be in quantities exceeding the .05 percent by weight (166.5 pCi/g). We would accept quantities of up to 2000 pCi/g (exempted material from DOT requirements). We intend only to make and distribute the containers. Our customers will be exempt under the 32 Ill. Admin. Code Part 330.30(a) once this D.U. is mixed with the concrete. The approximate weight of the concrete mixture will be 1400 lbs. ($6.35 \times 10^5$ grams). 140 lbs. ($6.35 \times 10^4$ grams) of concrete will be D.U. sand/soil. If 2000 pCi/gram of sand/soil is added there will be a total of $9.07 \times 10^5$ pCi added. If this is divided by the total weight of the concrete mixture ($6.35 \times 10^5$ grams) we will conclude the following:

$9.07 \times 10^5$ pCi $\div$ $6.35 \times 10^5$ grams = 1.43 pCi/gram

$\therefore$ this is well below the exemption limit of .05 percent by weight (166.5 pCi/g)

5. In 32 Ill. Admin. Code Part 330.30(c)6(A)(B) there is a specific exemption from licensing "natural or depleted uranium" used as shielding constituting part of any shipping container: provided that:

   (A) the shipping container is conspicuously and legibly marked with the legend " Caution - Radioactive Shielding - Uranium"; and

   (B) the uranium metal is encased in mild steel or equally fire resistant metal of minimum wall thickness of one-eight inch (3.2 mm).

We confirm that both of the above provisions for marking and production of the concretized D.U. in metal enclosed containers will be met.

6. We have informed Alessio Corporation of our intended usage of D.U. at their facility. A letter from the President of that company is attached in support of this amendment application. (See Attachment 2)

7. On the attached facility sketch, our D.U. storage and drum production area will be in Areas 48, 50 and 51 encompassing a total of about 6,000 square feet. The surrounding areas are unoccupied storage or open warehouse space or outside walls as shown on the attached sketch.

8. The actual usage of D.U. sand/soil will be extremely simple, as follows:

   (A) The D.U. will be brought in 1 cubic yard super sacks or in drums or other containers and most likely stored in area 48 until production of shielded drums. There may be some temporary storage in areas 50 and 51.

   (B) During the production of the shielding containers we will open one container of D.U. at a time to remove the sand/soil. This will reduce the possibility of contamination.

   (C) Upon opening the D.U. containers we will mix sand/soil with the concrete. The concrete will then be directly poured into the steel drums. This will encase the D.U. into the concrete. Our shielded containers will now be complete and exempt under the 32 Ill. Admin. Code Part 330.30 (a).

   (D) A sketch of a typical complete shielded container is shown in Attachment 3 with this letter. We will have variations on this basic design, but the requirements of 32 Ill Admin. Code Part 330.30(a) will be met.

9. Personnel working with the D.U. operation will be SAHCI employees. These persons will be trained in radiation safety in accordance with SAHCI's current license conditions.

10. Each incoming container of D.U. will be surveyed at the surface to insure there are no unusual exposure rates. Samples will be taken from each container to evaluate the concentration of each package. This will assure that concentrations greater then 2000 pCi/gram are not present in any individual incoming container. These containers will then be stored in section 48 as shown on the attached facility sketch.

11. The primary use of D.U. will be in section 51 of the attached facility sketch. We will follow the guidelines of Instructional Set 48.6 Revision 1 Appendix L for the area survey procedures with one exception. Storage areas will be surveyed for removable contamination monthly. These areas will be used on an infrequent basis and all D.U. in this area will be in the containers listed in 8(a) in this application. Therefore, possibility of contamination is minimal.

12. We will follow Instructional Set 48.6 Appendix J Revision 1 procedures whenever using the D.U. In addition to Appendix J, precautions will be taken to minimize internal exposures to airborne D.U. Air samples will be taken to evaluate the airborne concentration when handling the D.U. Calculations will then be performed to prove the amounts will not exceed the Derived Air Concentration of $5 \times 10^{10}$ uCi/mdg from 10 CFR Part 20 Appendix B Table 1. If this concentration is exceeded, half-mask respirators will be worn. For the purpose of ALARA, dust masks will be worn whenever working with the D.U. sand/soil.

13. We will follow Industrial Set 48.6 Appendix K in case of any radiation emergency.

14. Instruments to be used:

* Portable Radiation Detection Survey Instrument

1 Ludlum 14C range: (.01 mR/hr - 1000 mR/hr) with G.M. Detector

* Well Counter

1 Packard Cobra II Auto - Gamma Model D5003

LLD calculation from Industrial Set 48.6 Appendix D Revision 1

$$LLD = \frac{2.71 + 4.64\sqrt{97}}{.839} = 58 \text{ dpm}$$

* or equivalent nuclear detection equipment from SAHCI's New Lenox facility will be used.

15. No waste is expected to be generated by this operation. If small quantities of D.U. remain, they will be packaged and shipped to Envirocare of Utah or equivalent facility, or transferred to an alternate licensed facility.

16. The same ALARA policy that is in effect under SAHCI's current radioactive materials license will be followed.

17. The proposed temporary facility will be inaccessible to anyone other than authorized SAHCI personnel. The only accessible entrance is through the doors in section 50, as shown on the sketch. These doors will remain secured when the D.U. materials is unattended.

Attached is a check in the amount of $229.80, which is 20% of the remainder of our prorated license.

We request any assistance you can give to expedite this amendment request, as we have a current prospect interested in using about 300 cubic yards of D.U. contaminated sand in this way. If you have any questions, please contact me or Steven M. Herman at (815) 485-6161.

Sincerely,

Stan A. Huber

Stan A. Huber
President

SAH:jjz

ATTACHMENT 1

# ALESSIO CORPORATION

Moving forward to meet the challenges of today and tomorrow

April 25, 1995

Joseph Klinger
Head, Licensing Section
Division of Radioactive Materials
Illinois Department of Nuclear Safety
1035 Outer Park Drive
Springfield, IL 62704

RE: S.A. Huber Consultants, Inc. (SAHCI)
Illinois Radioactive Material License #IL-01013-01

Dear Mr. Klinger;

This letter is to confirm that Stan A. Huber of New Lenox, IL has visited our facility in Rockdale, IL (south of Joliet) and we have discussed a specific area of our building which we propose to lease to Stan A. Huber Consultants. The size of the area to be rented is about 5960 sq. ft. and will be detailed on a sketch.

- Area 48
- Area 50
- Area 51

Mr. Huber informed us that the intent of his firm is to use this remote area of our large industrial building for the purpose of receiving sand or soil, containing depleted uranium (D.U.), for the purpose of making high density shielded containers. The D.U. sand or soil will be mixed with high density cement and aggregate. We realize that depleted uranium is radioactive.

We have no problems or concerns with Mr. Huber's proposed use of a part of our building for this purpose. Our other firm Alessio & Sons Company is in the construction and hazardous waste decontamination business, and we have har-woper trained personnel and we are aware of safety and regulatory requirements.

Mr. Huber informed us that inspectors from your Department will be visiting our facility to examine SAHCI operations in our building after the amendment to their Illinois radioactive material license is granted.

Please feel free to call me at the letterhead number, if there are any questions.

Sincerely,

Alessio & Sons Company

James N. Alessio
President

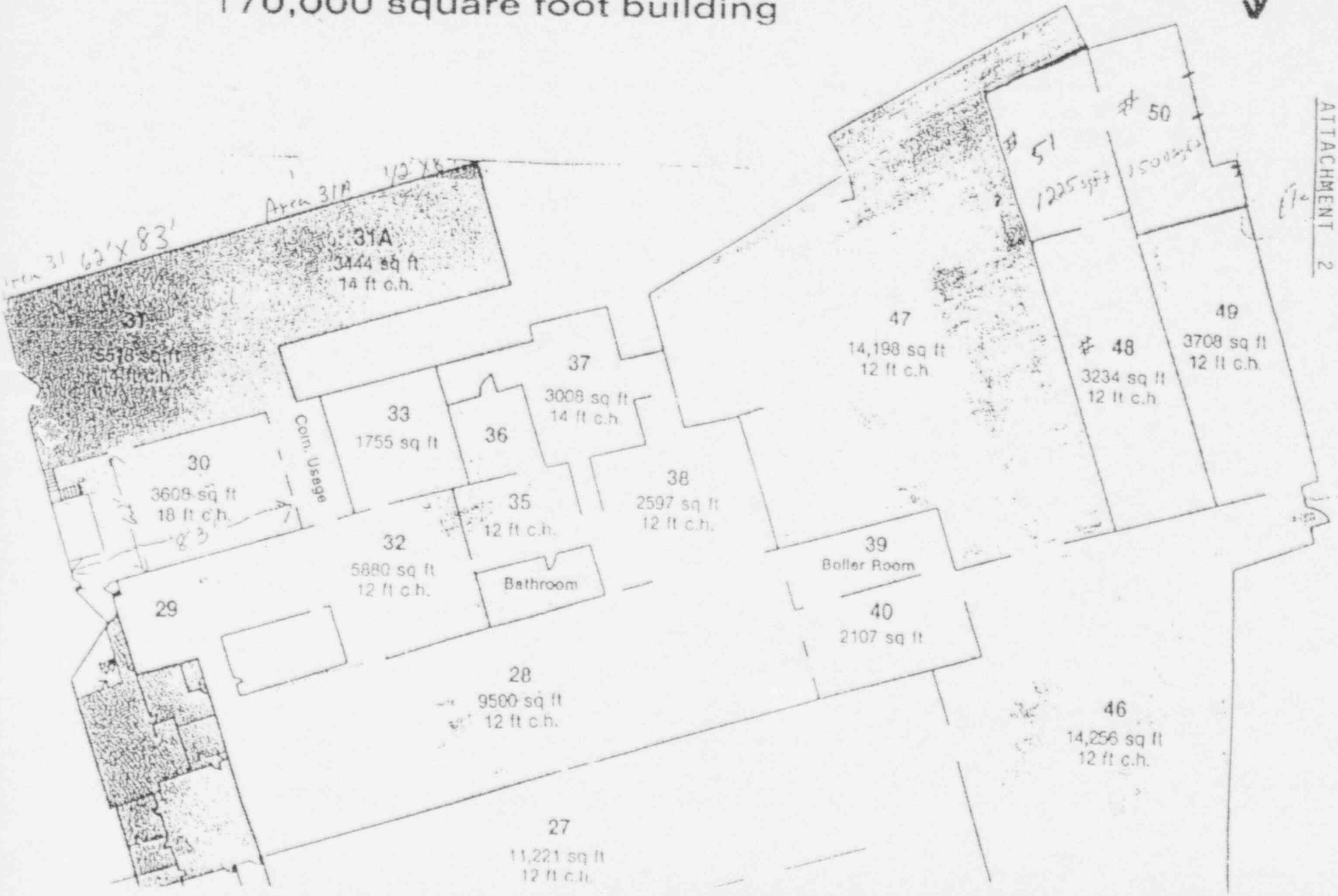
# Alessio Industrial Park

800 Moen Avenue, Rockdale, Illinois

**170,000 square foot building**

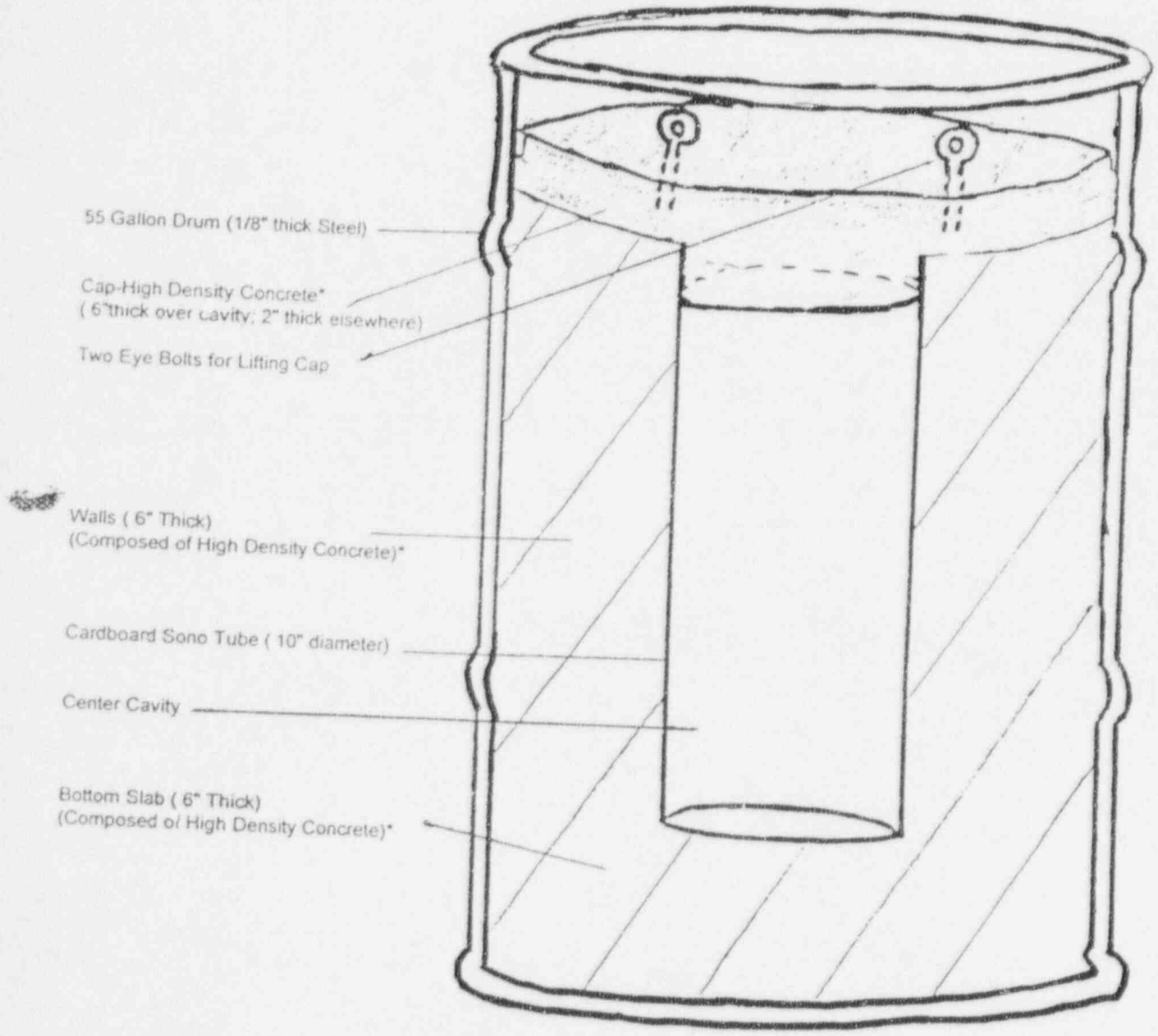
N

ATTACHMENT 2



# ATTACHMENT 3

## 55 GALLON DEPLETED URANIUM SHIELDED CONTAINER




Note: High Density Concrete Mixture composed of:
- Portland Cement
- Coarse Aggregate ( Gravel)
- Fine Hematite Aggregate
- D.U. Sand: Soil
- Super Plasticizer (Daracen 100)
- Water

STATE OF ILLINOIS
# DEPARTMENT OF NUCLEAR SAFETY
1035 OUTER PARK DRIVE
SPRINGFIELD, ILLINOIS 62704
217-785-9900
217-782-6133 (TDD)

Jim Edgar
Governor

Thomas W. Ortciger
Director

March 15, 1996

Mr. Richard L. Bangart, Director
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mr. Bangart:

Re: Technical Assistance Request (TAR) for Depleted Uranium Type A Containers

On June 1, 1995, the Department submitted a TAR to your office regarding the manufacturing and distribution of Type A containers containing "recycled" depleted uranium (see attached). We requested your assistance in this matter because granting such a license involves a number of significant issues (i.e., recycling, manufacturing, transportation, waste disposal, public health and safety) that could impact regulatory entities other than the State of Illinois. To date, we have not received a reply to our request.

The Department cannot understand the lack of attention this request has received. We have made numerous inquiries into the status of this action through your Region III and White Flint offices. The wide array of responses instills no confidence that a response is forthcoming.

The licensee has indicated that they currently plan to transfer the containers to a single user, and that the containers will be used for storage and disposal at a federally controlled site. We are prepared to issue a license amendment allowing the transfer of containers for this use only. However, we anticipate that the licensee will subsequently request license amendments allowing a broader distribution. Therefore, use of these containers could be proposed at both NRC and Agreement State licensed facilities, in the future.

While we are certainly able to complete our analysis without NRC's evaluation, we view this TAR as an opportunity to preclude regulatory conflicts involving these containers,

should their use become widespread. Apparently we disagree on the "importance and urgency" of our request. Yet, the Department would certainly consider any information the NRC should choose to provide prior to issuance of a license amendment. However, we feel obligated to respond to licensee requests within a reasonable time commensurate with the complexity of the request. Considering the length of time NRC has had to reflect on our request, we ask that you respond by April 15, 1996.

According to your response to our letter of October 12, 1995, this is not a TAR which NRC would consider as chargeable work, because NRC's evaluation is not necessary for the completion of our licensing action. Perhaps that is the basis for your lack of responsiveness. Nonetheless, should NRC pursue charging Agreement States for services rendered while continuing to provide the quality of service we have experienced with this request, NRC should anticipate substantial customer dissatisfaction.

Questions should be addressed to me or Joseph Klinger at 217/ 785-9930.

Sincerely,

Thomas W. Ortciger
Director

TWO:bc

Attachment

cc: Jim Lynch, NRC Region III
State Agreement Program Officer

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
1035 OUTER PARK DRIVE
SPRINGFIELD, ILLINOIS 62704
217-785-9900
217-782-6133 (TDD)

Jim Edgar
Governor

Thomas W. Ortciger
Director

June 1, 1995

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

Dear Mr. McCann:

The Department has recently received a request from a consultant operating in Illinois who wishes to receive and incorporate depleted uranium "sand" into Type A container for shielding purposes. The consultant has requested an exemption for distribution of these containers under our 32 Ill. Adm. Code 330.30. The Department does not believe that these containers will meet this or any other exemption.

The Department's licensing staff has sent the consultant in question a request for additional information to assist in the evaluation of this product (see Attachment I). With this in mind, the Department would like to make a technical assistance request from your office regarding the feasibility of this request and the possible options regarding evaluation and licensing of these containers. We have enclosed a copy of the licensee's request for your review.

If it is determined that these containers meet an exemption for source material, the Department would like to carefully coordinate the issuance of the IDNS license for possession and use of the depleted uranium with the issuance of the NRC license for distribution. Illinois would not want our licensee to receive this material unless they have a market for distribution or a means of disposal for this material.

Thank you in advance for your assistance in this matter. Should you wish to discuss this matter further, please do not hesitate to contact me or Joseph Klinger, Head of Licensing.

Sincerely,

Steven C. Collins

Steven C. Collins, Chief
Division of Radioactive Materials

SCC:CGV

Enclosure