FMC Corporation

Agricultural Products Group
Box 8
Princeton New Jersey 08543
609 951 3000

FMC

Br2

June 05, 2009

US NRC - Region I
ATTN: Licensing Assistance Team - DNMS
475 Allendale Road
King of Prussia, PA 19406-1415

03005249

RE: NRC License Number 29-01035-01 *[Adding a New FMC Chemical Research & Development facility site to the Current FMC Materials License]*

Dear Sir/Madam,

This letter serves as a follow-up to my telephone discussion of June 4th 2009 with Ms. Kathy Modes. As I've indicated in my discussion, FMC Corporation will relocate its Chemical Research & Development Center facility, in August-September 2009, to a new site located at: 701 PrincetonSouth Corporate Center, Ewing, NJ 08628. Currently FMC Corporation is taking the necessary steps to properly decommission its current Chemical Research & Development facility site located at US Route #1 & Plainsboro Rd at Princeton, NJ. When decommission is complete, a decommission report will be submitted to the NRC and to the state of New Jersey NJDEP.

Therefore, I am submitting this request to amend the current **FMC Materials License Number 29-01035-01** to include the **new FMC Corporation Chemical Research & Development Center site** located at: **701 PrincetonSouth Corporate Center, Ewing, NJ 08628** in the current FMC Materials License.

As per Ms. Modes guidance, attached please find with this request, 1) a completed **NRC Form 313** in application for the needed amendment, and 2) a description of the new site to comply with requirements stated in the **NEUREG 1556, v.7, Appendix C** *Item No. 9*: **FACILITIES AND EQUIPMENT.**

If you have any questions or require any further information, please contact me.

Sincerely,

Shreuberg ElNaggar 06/05/2009

S. ElNaggar, Ph.D.
Radiation Safety Officer,

cc/ Ryan Hinkle; M. Leggett, B. Herrick

Attachments: 2

143781

NRC FORM 313 (3-2009)
10 CFR 30, 32, 33, 34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIALS LICENSE

APPROVED BY OMB: NO. 3150-0120 EXPIRES: 3/31/2012

Estimated burden per response to comply with this mandatory collection request: 4.3 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

OFFICE OF FEDERAL & STATE MATERIALS AND
ENVIRONMENTAL MANAGEMENT PROGRAMS
DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
612 E. LAMAR BOULEVARD, SUITE 400
ARLINGTON, TX 76011-4125

03005249

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S.NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- [ ] A. NEW LICENSE
- [x] B. AMENDMENT TO LICENSE NUMBER **29-01035-01**
- [ ] C. RENEWAL OF LICENSE NUMBER

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include ZIP code)*

FMC Corporation
Chemical Research & Development Center
P.O. Box 8
Princeton, NJ 08543

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

FMC Corporation
Chemical Research & Development Center
Route 1 & Plainsboro Road
Princeton, NJ 08543, & in the New Facility, See Attachment

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Dr. Shaaban F. ElNaggar, RSO

TELEPHONE NUMBER

(609) 951-3495

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL
a. Element and mass number; b. chemical and/or physical form; and c. maiximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES *(See 10 CFR 170 and Section 170.31)*
FEE CATEGORY **3M** AMOUNT ENCLOSED $ **N/A**

13. CERTIFICATION. *(Must be completed by applicant)* THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTANED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER – TYPED/PRINTED NAME AND TITLE
Dr. Shaaban F. ElNaggar, Radiation Safety Officer

SIGNATURE

DATE
06/04/2009

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			$		
APPROVED BY				DATE	

Attachment 2 **Facilities and Equipment**

Radioactive Materials Handling Areas

Radioactive materials arriving at the research facility will be received by FMC **Receiving Department.** Packages will not be opened by Receiving Department, but will be immediately delivered to the RSO for handling. Receiving personnel will be kept abreast of handling requirements and will be alert to signs of leakage or external contamination. They are instructed to contact the RSO if anything looks suspicious.

The Radiation Safety Officer must approve all laboratories (two contiguous labs only, see Diagram 1, and 2) or other work areas, where radioactive material is used or stored. Such approval is contingent on the planned work being discussed with the Radiation Safety Officer, a pre-use survey is conducted, and proper postings are in place. Whenever a work area is to be decommissioned, all radioactive material must be properly disposed or transferred to another authorized work area; the work area will be surveyed including wipe tested to assure the absence of contamination, the RSO will be contacted for approval to decommission, and once approved, and all postings will be removed.

The use of radiolabel chemicals in open laboratory bench areas has been limited to concentrations of <100 microcuries. All experiments necessitating handling of concentrations of uncontained nuclides exceeding 100 microcuries are handled in constant volume exhaust fume hoods with face velocities of equal to or greater than 80 feet per minute. All hoods have a supplementary air plenum that directs flow of air from outdoors, equalizes pressure for uniform performance and minimizes inadvertent introduction of chemical vapors into the laboratory. The hood air is exhausted through a filter and standard size ducts at the roof of the building. The hoods are equipped with horizontal and a few with vertical opening sashes with laminated safety glass. The hoods contain no drains except elevated drain cups for cooling water from condensers. Equipment for experimental work is generally contained in plastic or stainless steel trays. The trays are lined with absorbent paper with polyethylene backing to prevent inadvertent contamination from reaching the laboratory surface areas.

The air face velocities of hoods are monitored frequently with a calibrated meter to assure optimum performance and the readings for a given period are posted on each hood. Corrective action is taken when the values are found to be below standard.

A specially designed dry Plexi Glass box, length 0.91 m (36 in.) x height 0.64 m (25. in) x depth 0.70 m (27.5 in.) equipped with a controlled atmosphere interchange compartment, retaining tray lined with absorbent paper, fluorescent light, gas flow meter, neoprene gloves and mobile understructure is also utilized, as needed, to handle toxic materials with high vapor pressure. Controlled

atmosphere is maintained by the constant flow of an inert gas such as nitrogen or argon. The gas being exhausted from the dry box flows through two highly efficient gas traps placed in series filled with an absorbent solid such as activated carbon, an absorbing solution, or is maintained in liquid nitrogen or dry ice bath depending on the physical and chemical properties of the radioactive material being used. The exhaust after passing through the two gas traps is vented into the fume hood.

The laboratory air is continuously replenished with fresh air from outdoors, air conditioned and directed into air handlers.

If for any reason, occasional air contamination is likely, air sampling will be confined to those periods when release is possible. In areas where frequent or continuous air contamination is likely, the air would be sampled continually during periods of personnel occupancy.

Air sampling will be performed, as appropriate, using filters impingement or absorbent tubes in accordance to procedures and recommendation given in NCRP Report No. 57, "Instrumentation and Monitoring Methods for Radiation Protection." The concentration of radionuclide collected will be measured in $\mu Ci/cm^3$ and recorded. The average airborne radioactivity concentration which a person might be exposed to over an extended period would be determined for locations of interest by applying operational modifying factors to the concentrations in air during the survey.

All laboratories will have available within easy access a survey meter. Survey meters will be calibrated and certified annually by a contract laboratory such as Antkowiak and Mahoney Enterprises, Inc. Ludlum Measurements, Inc. or Bicron Corporation. A list of currently available meters is as follows:

Radiation Detection Equipment

Ludlum Measurements, Inc. Model 3, SN 148999; Probe Model CE SN PR150656
Ludlum Measurements, Inc. Model 3, SN 175013; Probe Model CE SN PR181654
Ludlum Measurements, Inc. Model 3, SN 175120; Probe Model CE SN PR181742
Ludlum Measurements, Inc. Model 3, SN 133379; Probe Model CE SN PR134124
Ludlum Measurements, Inc. Model 3, SN 175038; Probe Model CE SN PR212738
Bicron Corporation, Bicron Surveyor 2000, SN A714; Probe SN A809L
Two Carbon-14 Monitoring Systems, RAMONA-92, Raytest Corporation
Carbon-14 Monitoring System, RAMONA 2000, Raytest Corporation
Beckman LS 6500 Liquid Scintillation Spectrometer
Packard Model TRI-CARB 2700 TR, SN 407762 Liquid Scintillation Spectrometer
Packard Model TRI-CARB 2700 TR, SN 414145 Liquid Scintillation Spectrometer
Amersham Bioscience Imager, Storm 865 GE, Model IEC 60825-1
Two Harvey Biological Oxidizers Model OX-700

Nonvolatile iodinated compounds (ligand bound) such as peptide toxins will be used in experiments typically employing about 5 µCi I-125. All work will be in a hood behind a lead-glass barrier shield (equivalent lead thickness = 2 mm).

Leaded neoprene gloves will be worn at all times during handling of ^{125}I-labeled materials. In addition, "light" lead bricks will be used to enclose the work area. A gamma "chirper" (Lab Safety Supply Co.), effective in the range 20 KeV to 2.0 MeV, will be worn by each worker as well as a TLD dosimeter (30 KeV to 1.3 MeV range). Work areas will be surveyed by wipe testing and scintillation counting (gamma program). Storage of samples will be in lead-lined containers.

Special Sinks

Specified laboratories (two contiguous Labs in the whole facility, See Diagram 1and 2) for radioisotope tracers use have one radioactive waste drains for handling of soaking solution for pre-cleaned glassware where the soaking solution contains less than 200 dpm/mL activity. The wastewater is collected in a holding tank within the lab (see Diagram 3) for clean-up on charcoal system prior to disposal as liquid radioactive waste via privately licensed service vendor. This wastewater is monitored regularly and prior to proper disposal.

Laboratory Bench

Laboratory bench surfaces should be covered with cleanable and removal material such as Nalgene Clean Sheets or Bytac Teflon coated adhesive paper. If these coverings become contaminated and cannot be cleaned by normal procedures, they should be discarded as radioactive, solid waste. Occasionally, surfaces such as laboratory bench tops, doorknobs, and drawer handles can become contaminated and the contamination cannot be removed by normal procedures. Any surface that cannot be decontaminated must be replaced by authorized personnel and is discarded as radioactive solid waste as stated under "**Waste Management**".

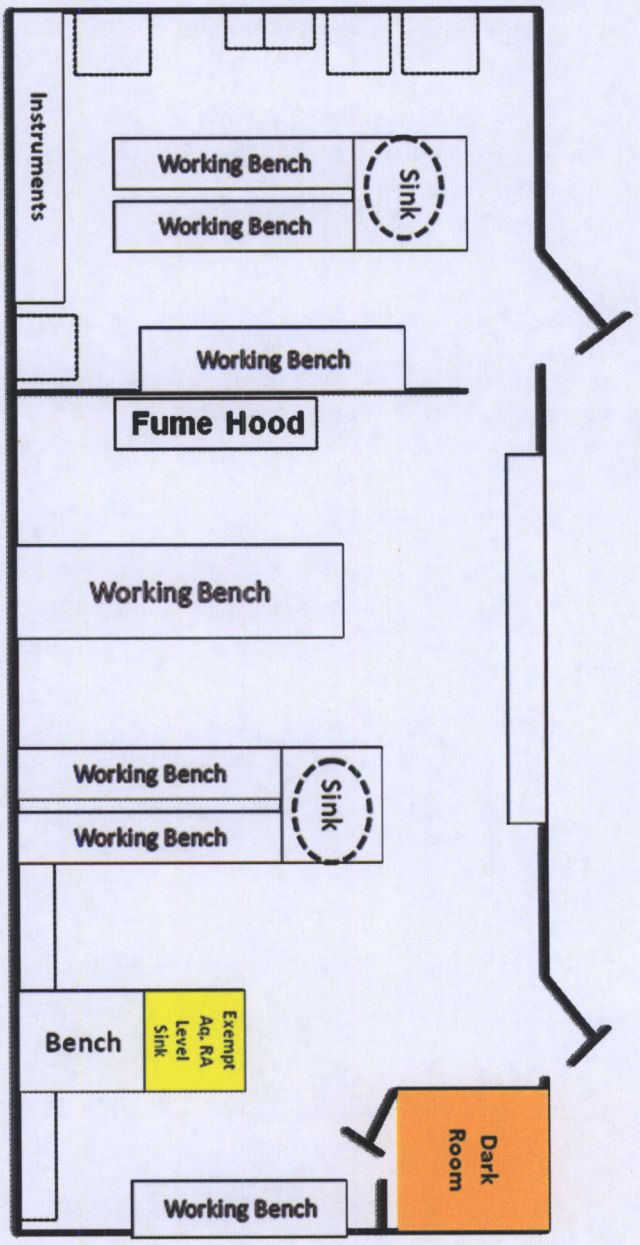
Refrigerators and Storage Cabinets

Radioactive materials will be stored in laboratories in locked cabinets or refrigerators when not in use. All refrigerators and storage cabinets present in authorized work areas will be properly labeled and secured. Laboratories will be locked when unattended.

Animal Experiments

No *In vivo* animal experiments with radioactive isotopes will be conducted in the new facility.

SCHEMATIC DIGRAM OF AREAS IN LABORATORIES



This is to acknowledge the receipt of your letter/application dated

6/5/2009, and to inform you that the initial processing which includes an administrative review has been performed.

☑ ADAMS. 29-01035-01
There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

_____.

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 143781.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.

NRC FORM 532 (RI)
(6-96)

Sincerely,
Licensing Assistance Team Leader