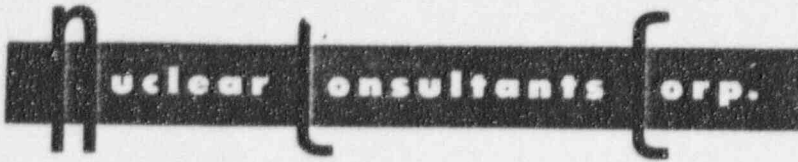


Out to R & D



Pharmaceutical Division

9842 MANCHESTER ROAD

ST. LOUIS 19, MISSOURI

Phone WOodland 2-2162

September 28, 1960

Mr. Cecil R. Buchanan
Assistant Chief
Isotope Branch
Division of Licensing & Regulation
U. S. A. E. C.
Washington 25, D.C.

Dear Mr. Buchanan:

Enclosed please find our application for the renewal of our license number 24-4206-1(J60) as amended by amendments Nos. 1, 2, and 3 which will expire October 31, 1960. You will note that we are requesting renewal of the license almost exactly as it now stands with only minor changes.

We have reduced the level of cobalt-60 requested and dropped the provision which would allow us to load "Commando Units" at the 6425 Etzel Avenue address.

Under the authorized use, we wish this to continue to read for research and development, for processing and redistribution, and for testing of sealed sources as provided for in amendment 3 of the present license granted May 11, 1960. Also, we wish to continue to dispose of low level wastes and in particular laboratory animals which still contain very low levels of byproduct materials as provided in amendment 2 to our present license dated February 4, 1960. The equipment, procedure, levels, and records remain the same as set forth in my letter of December 20, 1959.

It is often desirable for our consulting physicists to carry small sources (under 100 uc) of I-131, Fe-59, Cr-51, Co-60, Cs-137 or other such materials from one hospital to another for the purpose of calibrating counting equipment. We should like to request that our licenses be extended to allow these consulting physicists attached to our St. Louis laboratories to carry such sources with them in their private automobiles. Properly marked and more than adequate shielded boxes are provided for the transportation of such sources. They would be kept in the trunk of the car locked except when in use. They would be picked up from our laboratories when the man leaves and returned immediately upon the completion of his trip. These men may carry survey equipment with them for survey purposes. The states in which these men may travel are: Missouri, Illinois, Indiana, Ohio, Michigan, Kentucky, Wisconsin, Iowa, Kansas, Oklahoma, Texas, Arkansas, West Virginia and Pennsylvania.

We have added three new technical people since our last application. These are: Mr. Art Epstein, chemist, Mr. Frank M. Comer, consulting physicist, and Mr. Othel L. Pirtle, consulting physicist. Resumes of these men are included for your records. Mr. Epstein spends full

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time in our laboratories, Mr. Comer has been placed in charge of our new Cleveland, Ohio laboratories and Mr. Pirtle travels from the St. Louis office. Mr. Pirtle has been appointed assistant safety officer for the laboratories and will spend approximately half his time in the St. Louis laboratories.

At an isotope committee meeting held in our offices at 9842 Manchester on August 24, 1960, the following members were elected to serve for the next two year period.

W. R. Konneker, Ph.D.	- Chairman
R. L. Curtin	- Secretary
L. G. Struttman	
R. E. Nuelle	- Safety Officer
O. L. Pirtle, Jr.	- Assistant Safety Officer

The record keeping system in force at the laboratories (i.e. licenses verification, activity received, activity distribution, film dosimetry records, wipe tests, air sampling, waste disposal into sewer, waste disposal by incineration, etc.) were all reviewed and found to be current and adequate under the present regulations. Mr. Pirtle was instructed, however, to thoroughly study the new regulations which will go into effect January 1, 1961 and make recommendations and suggested changes in our records and/or procedures to make certain we are in compliance when the new regulations go into effect.

Three new vented hoods have been constructed since our last application. These were necessitated by an increase level of business in our radiopharmaceutical business as well as an increase in research projects carried out in our laboratories for our own products as well as research projects for outside clients.

Several new vented dry boxes have been constructed and several more are presently under construction. When these new boxes are completed, each product we handle and/or produce will have a special facility for its individual use. For example, one hood has been constructed for the production of I-131 diagnostic capsules. In a second, only therapeutic doses of I-131 are prepared. A separate hood is used for the production of radioiodinated compounds. Once produced, they are stored and packaged in separate vented dry boxes (i.e. one for rose bengal, one for triolein and oleic acid, one for triiodinated thyronine, etc.) P-32 therapeutic sources are prepared in a specially constructed sterile dry box while the Chromic Phosphate is prepared and handled in a specially constructed vented hood. The trend is to completely separate the handling of each product and/or byproduct material for easier and safer handling procedures.

The procedures and personnel instructions in force now are substantially the same as those listed in our application dated September 28, 1958 and the accompanying letter and personnel manual submitted to you on September 30, 1958. We have added a few new

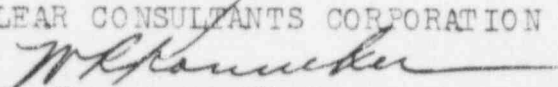
regulations in an effort to further improve our health physics program. We used to require lab clothing to be worn only when handling byproduct material. The rule now makes mandatory for everyone in the restricted area laboratory, whether working with activity or not, to wear lab coats. Smoking used to be allowed in certain areas of the lab. It is now restricted in all parts of the lab.

In an effort to further reduce the general background (primarily because of its effect on counting equipment) and to provide additional storage facilities for our supply of cobalt wires, we have recently constructed new storage facilities. If you will refer to our application for the amendment of our licenses which was dated December 29, 1959, you will find a sketch which shows at the back of our building, a small fenced area. This is the area where we installed our small incinerator. This is a concrete area surrounded by a six foot chain link fence and is accessible only through our laboratories. Two holes, ten feet deep and approximately six inches in diameter were drilled into the ground. Solid pipe was sunk into the holes and cemented tight around the top. Inside this pipe were placed several (about 10 each) small one inch water tight pipes. Metal baskets which fit inside these pipes were constructed and multistranded stainless steel wires were attached to these. A large metal disk (too large to slip through these one inch pipes) were then attached to the other end of the wire. These disks were stamped with an identifying number. The Cobalt wires are first placed in small 4 cc glass vials with screw caps, which are then placed into the wire baskets and lowered into one of the small pipes. This allows us to store up to ten individual vials in each large pipe. A water-tight lid was made to cover the large pipes just above ground level. This lid contains approximately two inches of lead. Over the top of these two shielded pipes, we have constructed a heavy wooden shelter (approximately 24" X 18" X 10") which is hinged to two pegs imbedded in the concrete and when closed can be locked to a third. The top of this wooden shelter carries the standard radiation words "Caution, Radioactivity" and the radiation symbol. With each loaded with better than 10 curies of Cobalt-60, the radiation level outside the fence is less than background as is the level in the fenced in area. Directly over the pipes when the lids are on, the radiation level is approximately 5 mr/hr.

The equipment listed in our original application has not basically changed. Considerably more standard laboratory equipment has been added (glassware, balances, centrifuges, ovens, hot plates, sterilizers, etc.) but the monitoring and counting equipment has not substantially changed.

I believe this brings up to date those changes which have been made in personnel, facilities and procedures since our last application. Should you have any further questions, please feel free to contact me at your convenience.

Very truly yours,
NUCLEAR CONSULTANTS CORPORATION


W. R. Konneker, Ph.D.
President

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