ICN US Nuclear Division

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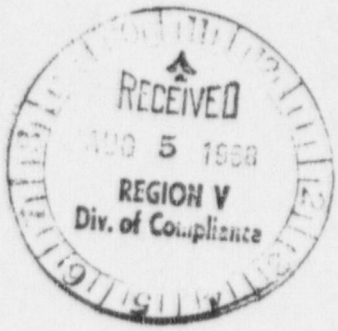
August 2, 1968



Director, Region V
Division of Compliance
U. S. Atomic Energy Commission
2111 Bancroft Way
Berkeley, California

Gentlemen:

Reference is made to our letter of (1) July 1, 1968 and (2) July 26, 1968, submitted pursuant to the "Notice and Order" issued by the Commission on June 1, 1968, in relation to License No. SUB-1002. The present submission supplements the referenced letters and describes proposed procedures and schedules for operations leading to final decontamination of the U. S. Nuclear Corp. premises at 801 North Lake Street, Burbank, California. Two copies of this submission are being forwarded to Mr. D. Nussbaumer to facilitate forthcoming technical discussions between U. S. Nuclear and Commission's representatives in Washington.

"Final decontamination" as used herein is intended to encompass the radiological survey and decontamination of the shell building. The shell building is defined as the interior surfaces of the building walls and roof, rafters and supporting members, the floor, and fixed interior installations such as rest rooms. The dismantling and decontamination or disposal as contaminated waste of switchgear

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and other utility-distribution systems attached to the building shell is also included.

Due regard for the health and safety of all personnel and of the general public is a prime consideration in this undertaking. It must also be recognized that this undertaking will involve significant cost factors. Therefore, it is imperative that plans for these operations take into account numerous factors so that duplication of costs is not encountered and so that cost control and safety can be assured. Therefore, three generalized prerequisites exist, in our opinion, to the final decontamination operation.

A. Removal of all unessential personnel, records and office furnishings from the building.

B. Dismantling and decontamination or disposal of all installations and materials representing potential risks of serious contamination.

C. Clearing, to the maximum possible extent, the building floor area to provide the most direct possible access to the less accessible areas to be decontaminated

To facilitate the vacating of the building, corporate management has decided to refrain from entering into any new commitments requiring use of these production facilities. Facilities are being phased out of operation as prior commitments are completed. It should be noted that the subject commitments relate specifically to operations separate from those related to License No. SNM-1002.

A. Classification of Projects and Projected Schedules

A detailed itemization of prerequisites to final decontamination operations is presented below along with comments concerning their mutual relationships and projected time schedules.

1. Removal of clerical and administrative personnel and vacating of office space

New facilities under construction in Orange County, California are scheuled for occupancy by administrative personnel on or about November 1, 1968. We plan to move the purchasing, accounting, sales and mail room personnel and essentially all office furnishings immediately thereafter. This move will vacate essentially all areas "A" and "B", as shown on Exhibit A, except the restrooms ("M" and "W") and the office "O" and will permit removal of health physics from its present location to the area designated "HPO". It is anticipated that partitions interior to "A" can be dismantled and disposed of, after monitoring, as conventional waste. All of area "B" including its overhead, can then be dismantled, monitored and disposed of as conventional or contaminated waste, as appropriate. Area "A" will be maintained as an unrestricted access area and all other portions of the building will be considered a restricted area. It is anticipated that the above cited items can be accomplished within approximately 3 weeks after the new building is ready for occupancy (i.e, by late November 1968 assuming no delays in building construction).

It should be noted that the boundaries of Area "A" are established by structural considerations as well as the desire to provide a complete separation of the restricted and non-restricted areas for as long as possible. In this context, it should also be noted that the men's restroom and the shower facility in the extreme southwest corner of the building must remain functional throughout most of the following operations.

The moving schedule does not appear to represent a deterrent to the overall schedule since many of the following items can proceed concurrently.

2. Disposal of special nuclear material

Submission #2, cited above, stated a completion time of three weeks following

receipt of AEC approval of the proposed procedures. However, in view of the above cited management commitment, and after additional review of safety procedures, it may be deemed prudent to defer this action for a few weeks until certain operations in Para. A-4, below, have been completed.

3. Dismantling, disposal and decontamination of Pu-238 facilities

Proposed procedures for these operations are described in submission #1, cited above. Disposal of bulk quantities of special nuclear material is a prerequisite to this operation. It is estimated that this operation can be completed within 6-8 weeks after the special nuclear material has been shipped and AEC approval of procedures has been received.

4. Dismantling, disposal and decontamination of other laboratory facilities

This set of operations refers to the following rooms as designated in Exhibit "A"; L-1, Kr, L-4, Po, L-6, L-5. The required operations include the disposal of expendable materials and equipment as contaminated waste, the decontamination of capital equipment to be salvaged and its packaging for temporary storage, and the dismantling of the partitions, utilities, and room overheads and their disposal as contaminated waste.

It is planned to decontaminate these areas generally in the order cited above. At least three areas are available for immediate action. It is anticipated that any remaining production commitments represent no deterrent to completion of the effort. It is projected that these areas can be vacated and dismantled and the floors subjected to preliminary cleaning by early November, provided that any applicable regulatory agency approval is received on a timely schedule.

Our original submission for cleaning the Pu laboratory implicitly assumed that

these rooms would be intact during that operation. Recent management decisions result in an earlier shutdown of operations than had been anticipated. Some obvious advantages may accrue if, several of these rooms areas are cleared prior to attacking the dismantling of the Pu laboratory.

It should be noted that a ventilated waste packaging facility located in Room L-7 must remain operable throughout most of the decontamination effort. Therefore, action on this room must be deferred. Room L-22, the operating area for the hot cell, is discussed in connection with the cell.

5. Dismantling and transfer of the machine shop

Current projections indicate that production commitments in the machine shop will be completed on or about November 1. The interior walls will then be dismantled and the machinery will be cleaned, surveyed and prepared for shipment to another location within the corporation. It is anticipated that these operations can be completed by December 1.

6. Dismantling and disposal of the hot cell

Current projections indicate that production commitments in the hot cell will be completed by October 1. However, the cell must remain operable until all significant inventories of radioactive materials are transferred to shipping containers and removed from the building. It is anticipated that these operations will require an additional period to 60-90 days. Due to the requirement for mobility of heavy equipment during hot cell dismantling and the potential spread of contamination, it is deemed essential to have completed operations cited in Para. #1-5 above prior to initiating effort on the hot cell. The dismantling of equipment, walls and overhead associated with Room L-22 will also be performed

as the initial phase of this effort. It is estimated that these operations will require approximately 30 days from the date that the hot cell is available and after all prerequisites have been completed. The target date for removal of the hot cell is February 1969.

7. Decontamination of removal of the Pool

The pool is a 4' x 6' x 13' deep pit constructed of reinforced concrete located adjacent to the hot cell as shown in Exhibit A. The water is contaminated primarily with soluble Cs-137 and Co-60. Significant quantities of suspended solids and bottom sediments similarly contaminated are present. Unknown quantities of bulk materials are present at the bottom, representing an accumulation of material placed there over many years. It is believed that the concrete surfaces are highly contaminated. Effort has been in progress to decontaminate the pool and effort to remove radioactivity will progress an a continuing basis. Removal of the concrete facing the hot cell is considered inadvisable until the cell is dismantled since it is believed that the structural integrity of the cell may be jeopardized. A conscientious effort is being and will continue to be expended to prepare the pool for final removal at the time that the cell has been dismantled and removed. The target date for removal of the pool is March, 1969.

8. Final decontamination operations

These operations will commence immediately after operations in Para. # 6 and7 have been completed and will include functions as cited in the definition presented above. They will include the dismantling and/or decontamination of restrooms and other facilities maintained operational during the above cited efforts. It is anticipated that approximately 6-8 weeks will be required to complete these operations so that the target date for release of the building

is approximately May, 1969.

9. Disposal of Contaminated Waste

Contaminated waste will be transferred to the custody of the Environmental Sciences Division of International Chemical and Nuclear Corporation who in turn will implement its disposal as authorized by Radioactive Materials License No. 1132-59 as issued and amended by the State of California or make arrangements for suitable alternative modes of disposal. That licensee will specify and supply the requisite shipping containers and will make all the necessary arrangements for transportaion of the packaged waste to a licensed disposal site and for its ultimate disposal. The waste material will removed from the premises periodically and expeditiously as the effort progresses.

B. General Procedures

The following general procedures are submitted for initial evaluation and to facilitate detailed technical discussions scheduled for August 7 at Commission headquarters. The procedures are presented here independent of procedures previously submitted for plutonium handling facilities. The usefulness of an integrated presentation is recognized. Therefore, it is planned to provide such a presentation, along with substantive modifications in previous submissions, after cited discussions have been completed.

1. Office areas

The dismantling of partitions interior to Area A, Exhibit A is believed to represent no significant radiological hazard since this has always been an unrestricted area and is maintained free from contamination. Precautionary radiological surveillance will be maintained to confirm this contention and suitable precaustions will be taken if any evidence of contamination is

observed.

Area B comprises rooms formerly used as laboratories and decontaminated to levels consistent with occupancy as offices. However, contamination may be present in subsurface structural components. Therefore, protective clothing and gear will be worn during dismantling of these interior walls as appropriate to the levels of contamination, if any, encountered. Surveys will be made before and during operations and structural components will be painted to fix any contamination and thus assit in minimizing its dissemination. The boundary walls to the north and east are known to contain fixed contamination. They will be dismantled by personnel in protective gear, including respirators.

Continual surveillance including wipe tests and frequent measurement of air samples will be in effect throughout these operations.

The wall debris from area B and boundary partitions will be packaged for disposal as contaminated waste. The debris from area A will be monitored and disposed of either as contaminated or conventional waste, as applicable. Any wall painted to reduce the possibility of contamination will be defined as contaminated waste.

The room overheads are known to be significantly contaminated with Pu-238 and other radionuclides. Access to these areas is rigidly restricted and requires protective clothing and respirators. It is proposed to paint the top surface thoroughly to at least partially fix this contamination prior to dismantling. Dismantling of the overhead will involve disassembly and disposal of utility and sewer lines, and disconnecting and enclosing various equipment items such as ventilation equipment. Decisions relating to salvage of this equipment are reserved pending evaluation of the technical and economic feasibility of decon-

taminating them. Dismantling of the overhead flooring will then be performed and the material packaged as contaminated waste. When all dismantling is complete, non-fixed contamination will be removed from the affected floor areas to a level consistent with maintenance of Area A as a nonrestricted area and other areas as restricted areas.

2. Laboratory areas

This disucssion relates to operations presented in Para A-4 above and the corridor serving Rooms L-4 through L-7. Operations will involve the dismantling, decontamination and temporary storage on-site of selected capital equipment items; (b) the dismantling and packaging as contaminated waste of expendable materials and equipment and (c) the dismantling of walls and overhead, including duct work and Utility lines and the initial decontamination of floor areas.

In general, health and safety procedures required for use of radioactive materials in these respective areas under License 0431-59 will be in effect for all operations. Continueal surveillance by a qualified safety representative will be in effect.

Contaminated structural surfaces will be painted prior to dismantling. Operations relating to dismantling the room overheads and equipment and utilities located thereon will be conducted in a manner analogous to those cited in Para B-1. It is explicitly understood that the walls enclosing the Pu laboratory will not be dismantled except under conditions specified elsewhere for dismantling of that laboratory.

3. Machine shop

The dismantling of the interior partitions will be performed under conditions specified for dismantling the boundary walls for Area A andB, in Para B-1 above. (Note: There is no room ceiling in this area). The machinery will then be decontaminated to levels compatible with unrestricted use and prepared for shipment to other corporate divisions. The surrounding floor areas will then be decontaminated as specified for Area B, in Para B-1 above immediately after dismantling the walls and also after removal of machinery items.

4. Hot cell and Room L-22

Dismantling of Room L-22 will proceed in accordance with procedures applicable to Room L-4, as discussed in Para B-2 above.

Management is investigating potential procedures for dismantling and disposal of the hot cell. These investigations are not sufficiently advanced for meaningful presentation at this time.

5. The Pool

Effort expended thusfar has been directed to the removal of algae and suspended solids from the pool water by filtration in a recirculation system. Progress has been made in clarification of the pool water and removal of a small fraction of the total contained radioactivity. Effort has been temporarily suspended for evaluation of proposed means of providing equipment improvements to both accelerate the progress and assure the safety of the operation. This project is the direct responsibility of the alternate RSO who is personally performing the work.

Present plans include continuation of filtering operations to achieve substantial

removal of suspended material and bottom silt so that good visibility can be achieved with the aid of underwater lights. Sufficient elinination of readily suspendable bottom sediments is required so that subsequent mechanical operations can be conducted without impairing visibility.

Follow-on effort will include mechanical removal of numerous objects and debris known or suspected to reside on the bottom and their transfer to appropriately shielded shipping containers for disposal as radioactive waste. The removal of soluble radioactivity from the pool water by an ion exchanger bed has been demonstrated to be practical in a small scale test. Further effort will require removal of the reinforced concrete and is disposal as contaminated waste. It may also be necessary to dispose of some other subterranean material which may have become contaminated.

Current operations are conducted wearing protective clothing, film badges and dosimeters. Two air samplers are operating at opposite sides of the pool. Used pool filters are transferred from the shielded filter cannister to a shielded drum for temporary storage and ultimate disposal.

6. Final decontamination

Final decontamination will entail (1) removal of remaining room overheads using procedures cited earlier (2) final decontamination of the floor and removal of any contaminated sub-floor drains and (3) cleaning of the rafters and building walls and removal of those office partitions and other facilities remaining in tact. Operations involving floor removal will probably be carried out first. It is anticipated that the sand blasting technique successfully used during similar operations earlier this year will prove satisfactory for most portions of the floor. Some sections may require physical removal and replacement.

When the floor has been released it will be covered with protective coating to facilitate incidental removal of contamination incidental to subsequent operations.

Scaffolding will then be provided for decontamination of the walls, rafters, etc. It is anticipated that a similar approach will be used to decontaminate the remaining building surfaces. After successful decontamination, it is planned to paint the entire inner surface of the building. The roll-up door facing Lake Street will be dismantled and disposed of as radioactive waste. A new door will be installed. The scaffolding and floor will be decontaminated for final release, and all contaminated material will be disposed of in expeditious fashion.

During all decontamination operations all workers will be in protective clothing and will wear film badges and dosimeters. Respirators will be required for most operations due to the danger of airborne contamination. A regular schedule of bioassays will be maintained. Air samplers will operate at preselected locations throughout the building and continual radiological surveillance will be in effect to provide data for evaluation of the working environment.

Mr. Fallis and I look forward to having constructive discussions with technical representatives of Division V and the headquarters staff on August 7.

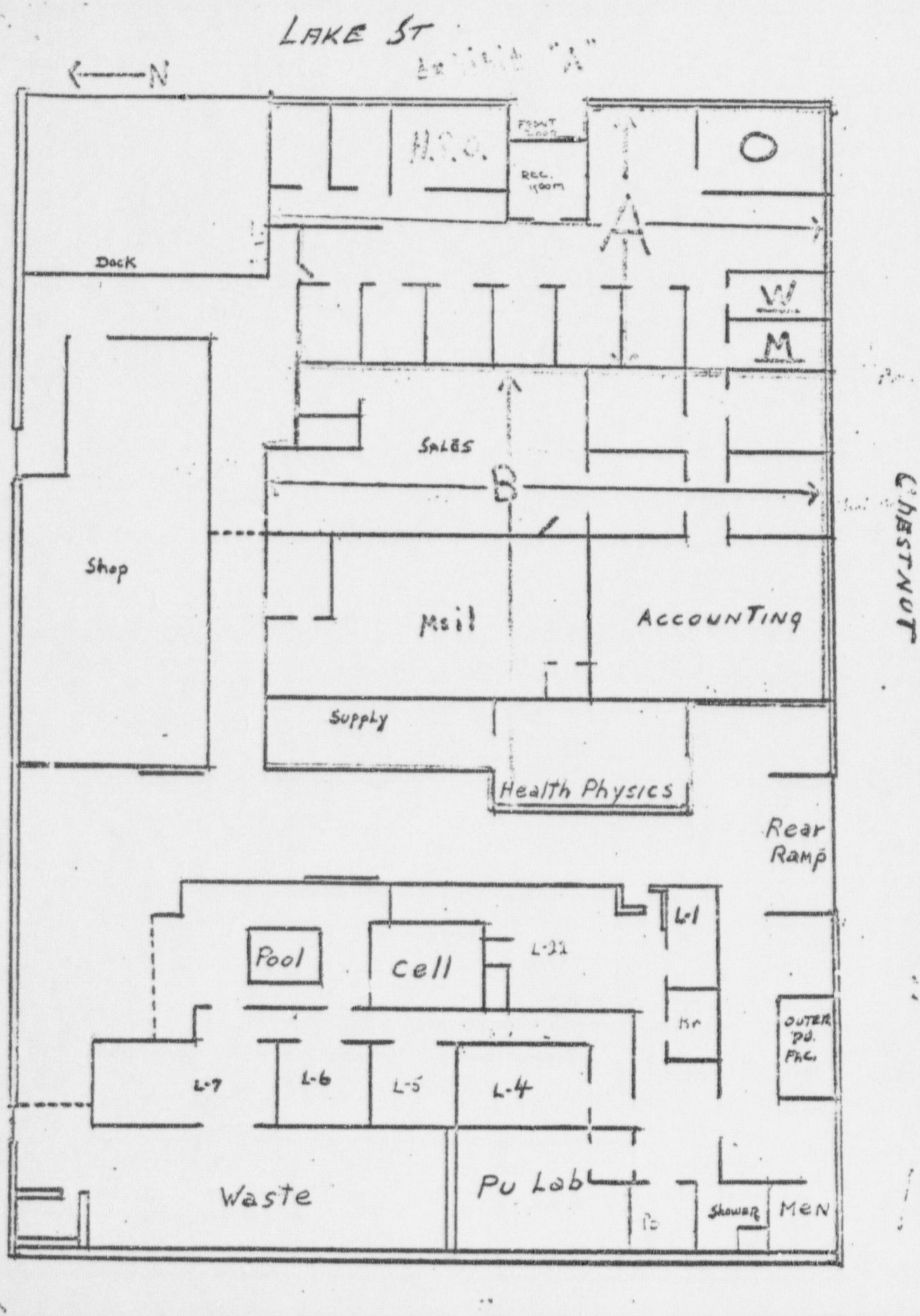
Very truly yours,

R. C. Koch

R. C. Koch, Ph. D.

Radiological Safety Officer

RCK:nr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