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SPECIAL REREVIEW
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By: R B Martin
Date: 3-4-85

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14 October 1946

Personal Service

MEMORANDUM FOR FILE

Subj: Radiological Decontamination; Conference Concerning.

1. A conference was held on the subject of Radiological Decontamination in Room 4168, New War Department Bldg. at 0845, 4 October 1946. Those present were:

Vice Admiral Blandy	Commander Langer
Rear Admiral Solberg	Commander Fee
Captain Lyon	Doctor Hamilton
Captain Rivero	Col. Roper
Col. Nichols	

2. Admiral Solberg opened the conference with the remarks that the Navy's radiological decontamination problems are roughly divided into two broad categoies: (a) the decontamination of radioactive ships now on hand, and (b) a long range program of radiological decontamination research, development and education. Admiral Blandy stated that the divisions of naval radiological decontamination activity are specifically divided into the following categories:

(a) Decontamination of active ships for overhaul and operation.

(b) Decontamination of ships destined for inactivation or disposal (of less immediate importance).

(c) A long range program of preparation for wartime decontamination measures.

(d) Sending to navy yards for decontamination the target ships after ammunition has been removed.

3. Admiral Solberg advised that BuShips and BuMed hadjointly issued a speedletter prescribing necessary measures to permit active ships to operate without hampering of operation or repair. Final instructions on decontamination measures must be promulgated for active ships for protection of personnel, and for inactive and disposal ships having in mind both medical and legal protection. Experimental work is being prosecuted actively at University of California on steel and copper-nickel salt water piping decontamination using hydrochloric acid and ammonium citrate. The Achomawi (ATF-148) is being sent to Hunters Point for development of decontamination measures on this type vessel. This ship's employment produced considerable radioactivity. The Rockbridge (APA-228) is also undergoing decontamination with complete data being obtained on conditions before and after applying procedures. These experiments will provide information as to decontamination cost which is of vital importance in view of scarcity of funds. It was originally intended to do no work on salt water lines of active ships, but it is now proposed to conduct an acid cleaning at the first overhaul in order that all restrictions can be removed regardless of future disposition. Admiral Solberg oultined the procedures being followed on cleaning of evaporators and underwater bodies. Target vessels are not considered in the same class with non-targets and require special studies for topside decontamination. Salt water lines and evaporators will not be a problem, because these systems were not in use on target ships during the danger period.

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4. Admiral Solberg explained that BuShips is now engaged in preparing final instructions for decontamination of all non-target ships. These instructions will supersede all previous directives and will contain an introduction outlining general considerations followed by specific instructions for the three classes of non-target vessels. A draft of the introduction was circulated among the conferees. Admiral Solberg stated that he hopes to get drafts of the instructions to the West Coast personnel for their comment prior to promulgation.

5. Admiral Blandy raised the question of classification of matter regarding decontamination. All agreed that the information should be reduced to a restricted classification and that the public relations angle should be considered carefully to remove confusion and the impression that the Navy is "covering up." This matter is now under study, but must be cleared with Manhattan District.

6. Dr. Hamilton reported that his work on the West Coast is proceeding very satisfactorily and that liaison with the naval activities there is excellent. Dr. Hamilton stressed the need for cleaning salt water lines on ships scheduled for inactivation because of breathing hazard due to the practice of blowing air through salt water systems. In the case of active ships, Dr. Hamilton agreed to deferring cleaning up pipe lines on active ships until regular overhaul, but stressed the need for reducing the time elapsed to nine months if possible because of the decay rate of beta material and the difficulty of detecting alpha emitters after decay has progressed beyond that time. Cleaning of bottoms is of least concern and can be deferred until docking is required for other purposes regardless of time involved. The leaching out process of the bottom paint will in most cases cause marine growth to fall off to some degree carrying alpha emitters with it. In this connection Dr. Hamilton suggested experiments with plates prepared with plastic paint and contaminated with radioactive material to determine what can be expected on underwater bodies of ships. He suggested contamination by a mixture of plutonium and fission products. Admiral Solberg raised the question of provision of the material, to which Col. Nichols replied that he felt the arrangements could be made.

7. Dr. Hamilton raised the question of the fundamental relation and function of the University of California in connection with the Army and Navy in their decontamination work. He went on to state that the job should be attacked quickly and thoroughly because of the rapid decay rate of beta material. He also stated that he felt that individuals should be trained both in the technical and overall aspects of decontamination. He recommended that Hunters Point undertake practical naval experimental work with assistance as necessary on technical matters from the University of California. He said that naval personnel or civil service personnel should be trained in this line as civilian personnel are most difficult to obtain for the work. Captain Rivero brought out the fact that recent Naval Academy graduates will in the very near future be recalled from monitor work for sea duty.

8. Admiral Solberg stated that the plan is to train for long term decontamination work. However, the immediate press of work in hand requires personnel on a short term basis to clean up ships already back and those to be sent back in the near future. This will be followed with a long term monitor program for target vessel clean-up. At the present time, the decision must be made as to which

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group of personnel should be trained in this type of work. At first glance, it would appear that electronics personnel would be the logical choice. Dr. Hamilton stated that he considered essential a knowledge of radiochemistry as well as knowledge of repair and operation of instruments. Admiral Solberg indicated that the chemistry background would not be necessary for immediate work now in hand or for wartime decontamination procedures to which present investigations will lead. Chemists will be required for research work only. Other groups will be trained in monitoring. These may include all naval officer postgraduate students regardless of what types of courses they are pursuing, damage control officers and other selected groups. The course will be one of probably four weeks duration on decontamination procedures, and will be designed to disseminate knowledge of the problems to be expected and methods of coping with them. Captain Lyon stated that medical personnel will also have a definite training program in radiological decontamination. Admiral Solberg stressed the need for all medical officers to take the course. Dr. Lyon replied that negotiations with BuPers are underway but no definite policy has yet been derived. A five day course to give a general picture to senior medical officers is being developed. The senior officers of BuMed are now observing at the Radiological Safety School, and weekly conferences are held with these officers on determination of school policy.

9. Admiral Solberg explained that there are several major problems facing the Navy, but there are not sufficient personnel available at present to handle them competently. Dr. Hamilton complimented the Navy on the excellent approach already made to the problem and the splendid long range program under consideration.

10. Admiral Solberg advised Dr. Hamilton that samples of radioactive material must be taken from ships as frequently as possible to be analysed for background of experience and to aid in assessment of activity on future ships. According to Dr. Hamilton this procedure is being followed within the limits of present facilities, and although good samples are being obtained, ex-target ships will offer a more fruitful field. Admiral Solberg pointed out that some targets are coming to the West Coast in the immediate future and analysis on these should commence as soon as possible. Dr. Hamilton again stressed the point that in order to handle this work properly, the Army and Navy must make attractive offers to personnel to engage in radiological safety and decontamination. The principal problem in this case is not, as Dr. Lyon thought, a financial one, but rather a case of encouraging competent men to enter the field by assuring them that they will be kept on that particular type of work throughout their employment and will be guaranteed a long term period of service. In this respect Admiral Solberg believed that the Army and Navy must present a united front on the problem in order to gain support of the program and should develop a combined school for education in radiological work. The closest liaison must also be maintained in the development of all phases.

11. Captain Lyon discussed the work of the Navy Radiological Safety School briefly and commented on the instructors and type of lectures being given. He promised to disseminate copies of the material of the course as soon as available in printed form.

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12. Dr. Hamilton raised the question of the permanency of the laboratory at Hunters Point. Admiral Solberg indicated that no commitments had been made along this line as yet. He also said that a basic directive for the proper establishment of the laboratory must be developed. No one knows as yet all the phases requiring attention and the development will perforce be a gradual process as more information becomes available. Captain Rivero advised that in the Navy Department Admiral Wright will assume control of new developments in CNO, with Admiral Parsons remaining in charge of Atomic Energy and guided missiles, and in this capacity handling problems resulting from CROSSROADS. Dr. Hamilton believes that his facilities can be of most value in training personnel and assisting in the setting up of the laboratory at Hunters Point. He considered that three or four officers and six pharmacist's mates would suffice for a start. Admiral Solberg advised Col. Nichols that present arrangements between the Navy and University of California are quite satisfactory.

13. Col. Nichols stated that Army problems in radioactivity are very broad and that the question of atomic warfare again requires review. Dr. Hamilton believes round table discussions between the Army, Navy and civilian scientists are in order in developing the subject. Col. Nichols advised Dr. Hamilton that he would like to have from him, when convenient, a suggested long range decontamination program including both Army and Navy and also his thoughts on atomic warfare.

14. Admiral Solberg stated that the Navy's problems are two:

(a) What type covering can we use to avoid taking up radioactive material?

(b) What are the best decontamination methods for present and prospective materials?

Col. Nichols suggested that the Army and Navy should devote their studies to specific applications of decontamination leaving to civilian scientists the development of the field of general knowledge of radioactivity. Admiral Solberg made the point that all research work in the field must be doordinated, and laboratories and agencies must maintain the closest liaison to avoid duplications and to give all investigators the benefit of new discoveries or developments by individual activities. Dr. Hamilton suggested from this standpoint that it might be advisable to shift the laboratory from Hunters Point to Washington in view of the superior scientific facilities available here. Admiral Solberg said that radiological research and development must be conducted individually and separately from other fields. Dr. Hamilton questioned the possibility of Army-Navy nuclear energy studies. Col. Nichols considered that Manhattan Project is just that. Captain Lyon said that Dr. Hamilton could be of most value in detection and analysis procedures. Dr. Hamilton said that at present the establishment of standards is mainly guess work and calculated risk. The practical side of the work must be considered throughout by persons familiar with ship operating and repair procedures. Further, the more advisers the more ridiculous the standards because of the personal variation in opinions of safe limits. Biweekly discussions of new developments and problems and crystallization of ideas would be of great help to all concerned.

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15. Col. Nichols questioned Dr. Hamilton as to is additional requirements to accomplish the job before him. Dr. Hamilton advised that he is making satisfactory progress with present facilities by robbing long range research problem studies which he is loath to do. However, he believes the best procedure at present would be to train Navy people to meet immediate problems. Civilian experience will develop naturally in connection with the work as time goes on. Dr. Hamilton suggests that some Army and Navy personnel sit in on the course at Berkeley next spring, without enrolling, merely to obtain a background as to general considerations and problems to be expected. Dr. Hamilton promised to determine from the authorities at University of California whether arrangements can be made to have some of Captain Walsh's and Captain Maxwell's personnel sit in on the course on this basis. Admiral Solberg suggested also that Mr. Gordon, Hunters Point Chemist, be permitted to take the course for information and experience.

16. On being questioned as to standards which could now be adopted for decontamination, Dr. Hamilton stated that the problem is one of determining the total quantity on plutonium in a ship and then determining whether that is a dangerous quantity if accumulated at one spot. Other than this standard, clearance is mainly a case of calculated risk and good judgement. For practical purpose, he indicated that for an active ship, if less than 25% of readings showed as high as .01 to 0.1, decontamination could be omitted, but if 25% of readings were 0.1 or above the ship should be decontaminated immediately.

17. The conference adjourned at 1035.

J. J. FEE,
Commander, U. S. Navy.

cc: All Present.