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SAN FRANCISCO NAVAL SHIPYARD
SAN FRANCISCO, 24, CALIFORNIA

21 MAY 1947

CONFIDENTIAL

From: Commander, San Francisco Naval Shipyard
To: Chief of the Bureau of Ships (Code 400-689)
Chief of the Bureau of Medicine and Surgery
(Atomic Energy Group)
Attn: Rear Admiral C. J. Brown, (MC) USN

Subj: Monthly Progress Report of Radiation Laboratory for Period Ending 30 April 1947; transmittal of

Ref: (a) BuShips-ltr-ltd SECRET ltr file S(97) Serial 0G5680 to Commander, San Francisco Naval Shipyard dtd 18 Feb 1947.

Encls: (R.W.)
(A) Progress Report, Radiation Laboratory, for Period Ending 30 April 1947, ADMINISTRATIVE.
(B) Progress Report, Radiation Laboratory, for Period Ending 30 April 1947, TECHNICAL.

1. Enclosures (A) and (B) comprising the second of the subject reports are forwarded in compliance with reference (a).

PHILIP LESLIE

~~RESTRICTED~~

Progress Report, Radiation Laboratory, for Period Ending 30 April 1947

ADMINISTRATIVE

A. LABORATORY BUILDING SECURITY

1. After consultation with and a visit by representatives of the Berkeley Area office of the Atomic Energy Commission, certain additional measures for increasing the security of the laboratory building were instituted. The whole of the chemistry laboratory is to be designated a "limited area" as defined by AEC. In addition a nine-foot high fence will be constructed around the exterior of the building.

B. SECURITY OF CLASSIFIED INFORMATION

1. AEC representatives have suggested types of safes for securing of classified information considered as restricted data. One room in the building has been designated as a limited area to be locked at all times, protected by a burglar alarm and barred windows. This room will contain the approved safes. Upon completion of this project and upon obtaining formal AEC clearances of key laboratory personnel, valuable classified reports may then be obtained from the Atomic Energy Commission.

C. SECURING OF CLASSIFIABLE SAMPLES

1. The small storage shack mentioned in last month's progress report was moved to the back of the building. Another shack of the same size is now being altered for receipt of plate samples from various target ships. The problem of storage of samples, proper security of such samples, and sufficient separation of active samples from sensitive research instruments is a very serious problem. A preliminary plan for a permanent storage alongside Bldg. 351, the future quarters for the laboratory, is now under consideration. It is believed, however, that authorization for its construction will require so long a time that storage of active samples will continue to be a very serious problem.

D. PROCUREMENT OF ADMINISTRATIVE ASSISTANT

1. The procurement of an administrative assistant has been slow due to the necessity of justifying a CAF-7, a rating below which the laboratory is opposed to taking. It is expected that the position will be filled within two weeks if a suitable candidate can be found in the shipyard.

R. G. PRESTON
Officer-in-Charge

~~CONFIDENTIAL~~

Progress Report, Radiation Laboratory, for Period Ending 30 April 1947

TECHNICAL

A. FACILITIES

1. The equipment and facilities situation remains generally satisfactory except that instruments listed as critical in the last progress report have still not been received and the laboratory continues to be handicapped thereby. These items are (1) Tracer Laboratory Company autoscalers and (2) Simpson proportional counters. No firm information has been received by the laboratory on the status of procurement or possible delivery dates. The third item in this category, standard radium sources, has been received. Meanwhile, need for sources of greater mass has developed and these have been ordered; similar sources which the laboratory has on loan serve these requirements for the present.

2. Continued work with the single alpha counter and the single usable beta-gamma counter has resulted in improved reliability with both instrument assemblies. The background count of the alpha counter has been further reduced, from the 0.022 CPS last reported to 0.008 CPS, thereby increasing precision of low activity work. The beta-gamma counter shows substantially greater reproduceability and at present approximately meets expected performance of equipment of this type. Reproduceability of results is 5 to 6 percent, half the deviation obtained previously.

3. A test panel for electronics instruments in use in the laboratory is being constructed; it is nearly completed. Standardization, testing and servicing of both laboratory and field instruments will be facilitated.

4. Preparations for housing of test animals are near completion. Separate dog and rat houses have been provided and are presently usable. Some features which will be provided have not yet been installed.

5. Installation and alterations in the main laboratory building mentioned in the 1 April report have been largely completed. These include the equipment of a research clinico-pathological laboratory, and a laboratory for biological and clinical preparations. Some work remains to be done, notably the installation of an exhaust fan in the biological laboratory.

6. Planning and procurement of equipment for neutron studies has been initiated. To a considerable extent this equipment must be built in the laboratory because of its special character. Necessary supplies and equipment are being ordered.

B. PERSONNEL

1. During the month of April the following new civilian technical personnel were employed by the laboratory: R. E. Hooper, Assistant in Chemistry and E. J. Polenta, Assistant in Biology, J. E. Howell has accepted a position as Assistant

in Chemistry and is expected to report about 25 May. Mr. Howell has been associated with decontamination work at the Navy Yard in an officer status and is being released to inactive duty. D. D. Cubicciotti is being offered a position as Research Associate in Chemistry and has indicated that he will accept. He is expected at the laboratory about 15 June. Dr. Cubicciotti obtained his PhD Degree at the University of California in 1946 and is now an instructor at New York University.

2. As of 1 April eighteen candidates for positions were under consideration by the laboratory. Several of these were listed as good prospects, among these Mr. Howell and Dr. Cubicciotti. A third, Dr. E. Gonick, is no longer being considered. All others are still active candidates.

3. During the month of April several institutions outside this area were visited in connection with personnel recruitment. Included were the Spring Meeting of the American Chemical Society in Atlantic City, the University of Chicago, the California Institute of Technology and the University of California at Los Angeles. A number of candidates were interviewed, mostly new prospects. A gratifying number of these men are excellent material and are definitely interested in the possibility of employment at the laboratory. Several gave indiciation that they would accept offers of employment and a great many more wished to be considered. After further investigation, it is expected that the laboratory will make offers to several of those listed below. Qualifications range from P-2 to P-6 and cover several specialties.

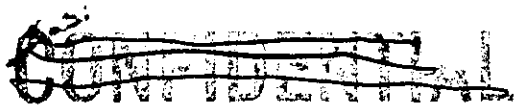
K. Allen	F. A. Lucy
I. C. Atkins	H. E. Mahnke
W. E. Ballou	F. E. McKenna
A. F. Clifford	C. A. Reynolds
B. H. Davis	J. Roth
R. C. Faber	E. B. Saniger
W. J. Frederick	H. A. Scheraga
F. H. Holden	W. Shellberg
A. A. Jarrett	A. Whittiker
H. L. Laquer	W. S. Wooster
L. Leventhal	L. McClaine
L. W. Litz	

4. In addition to the above candidates for positions, the laboratory has under consideration fourteen men of more doubtful qualifications or interest. Some of this group are undoubtedly good material. The laboratory has also received a number of valuable leads on personnel not immediately available.

5. Steps have been initiated to establish two additional P-3 and two P-4 positions in Chemistry. A position of Electronics Engineer, P-3, is now under consideration by the Area Wage and Classification Board.

C. EXPERIMENTAL WORK

1. Detailed monitoring surveys have been continued on all ex-target ships available. This work has been completed on the two submarines, USS PARCHE



and USS BENTUDA and on the battleship USS NEW YORK. The monitoring of the USS NEW YORK included the underwater hull; samples for further examination by the Laboratory were obtained. The underwater hull of the USS GASCONADE has been completely monitored and approximately 20 percent of the area of the remainder of the ship; some samples have been removed. About 30 percent of the area of the USS CRITTENDEN has been monitored. In the case of the latter two vessels that remaining is mostly interior compartments of low and relatively uniform activity. The USS PENSACOLA is now at Puget Sound Naval Shipyard available for monitoring in the near future. Provisions have been made to accomplish this work. In all of the above monitoring, shortage of personnel has seriously handicapped the work.

2. Radioactively contaminated fuel oil from the USS GASCONADE is being burned in the Shipyard boilers. During the initial burning fly-ash, deposited carbon and flue gas were sampled for estimation of the ultimate distribution of the radioactive material. In line with expectations, only low order activities have been found.

3. Laboratory studies of dust samples collected in gas masks experiments have been continued. The more important samples have been analyzed, but approximately 20 percent of this work yet remains to be completed. Duplications of the gas mask experiments are in progress.

4. [illegible]

1. Examination of personnel and other established safety measures with which the Medical Section is charged is continuing. Installation of more elaborate hand counting equipment is in progress. Transposition of medical history sheets and laboratory data to Navmed Forms Y, MF-27 and MF-57 is continuing.

2. Lt. Holt (MC), USN and Lt. (jg) Chase (MC), USNR, were given two weeks indoctrination in radiological problems. Both officers have left for duty at Bremerton. A two weeks course in Photographic Dosimetry was held for three PhM1 and two HA1.

3. As a check of the gamma characteristic curve for the type "K" film, badges were exposed to a known radium source which is more representative of conditions on ex-target vessels. Agreement was good up to two times tolerance.

W. E. HAMES
Acting Technical Director

Enclosure (B)

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ADDRESS REPLY:
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(136)

MEDICAL SECTION
RADIATION LABORATORY
SAN FRANCISCO NAVAL SHIPYARD
SAN FRANCISCO, 24, CALIFORNIA

Enc. (B)

30 April 1947

PROGRESS REPORT

The progress report submitted 31 March 1947 covered significant accomplishments of the laboratory for several months previous. The present report covers activities to which I have given assistance or supervised from the period 31 March to 30 April.

Radiochemical Laboratory:

1.- As of this date no new radiation measuring equipment has been received. The Cyclotron Specialties Co. Alpha Counter has been on order for four to five months and has still not arrived. Three Tracerlab beta counters are expected next month. This situation then remains the same with one useable beta scaler and one parallel plate alpha counter. The background count of the later has been further reduced from 0.022 CPS to 0.008 CPS which increases the precision for low activity work.

2. Three radium standards in the ranges of 10, 1.0 and 0.1 milligrams have been received together with Bureau of Standards Certified Calibrations.

3. A photographic technique is being developed for detecting alpha radiation. This procedure can not be expected to be much more than a qualitative indication of alpha emitters at present but may have useful applications.

4. Laboratory analysis of the flue gas collection and fire box carbon deposits for the Contaminated Oil Burning Tests has been completed and the analysis report in preparation. The procedure for sample collection

and details of burning conditions is also in preparation. Burning of the oil tested is being continued and arrangements for periodic test samples have been made.

5. Analysis of the canister samples obtained for the Inhalation Hazard test has been extremely difficult. So far the ashing down of the activated charcoal has not been satisfactory and has slowed progress. Since the activity of the dust is separately determined and all test canisters have a control filter behind them, little is gained by canister ashing. However, the filter paper within the canister has been removed, ashed and analysed. Analysis for this project would be complete were it not for the activated charcoal analysis.

6. The repeat series of canister tests will be started 5 May. The sampling equipment has been reconditioned and recalibrated. Vacuum gauges have been installed on each suction pump to determine the magnitude of the dust collection as the experiment progresses.

A mechanical dust tumbler is under construction to take the place of broom sweeping previously used. This device will insure uniform and constant radioactive dust production when needed. This tumbler will also be used for dust production in long term biological experiments with animals.

7. Auxiliary facilities completed for the radiation laboratory include an adjoining building to house rats. This building is small but equipped with an electric thermostated heat control, sink and running water. A second small building has been added to the existing temporary sample storage building. This building is being used to store especially selected samples from target ships now undergoing experimental monitoring.

Electronics Laboratory:

1. On the average only two electronic repairmen have been available for survey instrument maintenance and repair. With security watches and other duties they have not been able to keep up with the work load. Monitors have been called from their duties to assist in instrument calibration.

2. An elaborate radiological instrument test panel has been 95% completed. In addition to the standard electronic test equipment the following special features have been incorporated:

(a) A 3200 volt regulated power supply to enable characterizing and testing all types of counting tubes.

(b) A scale of ten counter and automatic relay to shut off the counter at a predetermined number of counts.

(c) An oscillographic syncroscope to determine counter tube pulse voltage, quenching time and shape.

This test equipment will be of extreme value in standardizing and testing Radiochemical Laboratory scalers and Geiger tubes as well as for more rapid servicing of monitoring instruments.

3. Frequent high background counts have resulted from contaminated material lodging in the Geiger tube housing of survey meters when used for contact leadings. This has been effectively overcome by covering the housing opening with a sheet of cellophane with a low density of 3.0 milligrams per cm^2. The density of the Geiger tube window is of the order of 30 milligrams per cm^2 so that beta adsorption of the shield does noteffect the reading of the survey meter.

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Monitoring of Target Ships:

1. The detailed experimental monitoring of the U.S.S. Crittenden APA 77 is now about 30% complete. The uncompleted portion represents mostly interior compartments of low and uniform activity. It is expected that deadline for completion will be met.

2. The detailed experimental monitoring of the U.S.S. Gasconade APA 85 is 20% complete except for the under water body. The hull (under water portion) has been completed with dry readings taken every five frames at three foot intervals. The under water body monitoring was greatly facilitated by use of a power finger lift in the dry dock. The monitors remained on the railed platform and were easily lowered and hoisted as required. This proved to be a more rapid and convenient method than the crane and skipbox.

A serious shortage of monitors exists which hampers progress on experimental target ship work and leaves unsupplied many other monitoring services requested by the ship yard.

3. Because of the shortage of monitors the monthly decay study on the U.S.S. Gasconade and U. .S. Crittenden has had to be temporarily discontinued.

4. The top side special experimental monitoring of the submarines Parche (SS-384) and Dentuda (SS-335) has been completed. These vessels have not yet been made available for experimental decontamination.

Royce K. Skow.

Royce K. Skow
Lt. Comdr. (HS) USNR
BuMed Representative
and Administrative Officer.