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H-DIVISION PROGRESS REPORT
July 20 - August 20, 1958

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Uncl PL

REF: H-279

Class:
H-1 - S RD
H-3 - U
H-5 - C RD
H-6 - OUO
H-7 - U

I. ADMINISTRATION (Thomas L. Shipman, M.D., Leader)

A. Personnel (8/1-8/31/58)

1. New Hires

8/8	RANDOLPH, Francis E.	H-DO	Shop	Casual
8/18	ADAMS, Warren H.	H-7	Laboratory	
8/19	BANTA, Virginia N.	H-3	Administration	

2. Terminations

8/15	MITCHELL, William E.	H-4	Radiobiology	Summer
8/20	BANTA, Virginia N.	H-3	Administration	
8/22	TOWERY, Dudley H.	H-1	DP Sites	
8/22	JENIKE, Joseph S.	H-5	Field	Summer
8/26	HOLMES, Clyde E.	H-1	General Monitoring	
8/26	HINOJOSA, Hector C.	H-1	General Monitoring	
8/29	CRISS, Janice L.	H-DO	Administration	
8/29	McGILL, Raymond J.	H-4	Low Level Counting	
8/29	FOREMAN, W. Wayne	H-5	Laboratory	
8/29	SCHAEFFER, James R.	H-6	Meteorology	

3. Total Personnel

SM	64
Military	2
SCP	120
ASC	60
TOTAL	246*

*Includes 9 casual and 7 summer employees.

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II. GROUP H-1, MONITORING (Dean D. Meyer, Leader)

A. General

1. The Alternate Group Leader has been at EPG all month working as rad-safe advisor to the Rad-Safe Group TU-6.

2. The Group Leader was attached to TU-6 for the Teak Shot at Johnston Island.

3. The Group Leader lectured to the class of high school science teachers at the University of New Mexico on Radiation monitoring procedures.

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B. Visitors

1. Mr. William Leavitt of the Watertown Arsenal (Massachusetts) visited the Group on July 28 and 29 to gather information concerning health physics procedures in areas working with U^{238} and U^{235}.

2. Mr. A. Bellamy of NOTS, Pasadena, California, discussed possible contamination problems connected with ASROC tests at Walker Lake.

3. Mr. Sawyer of the Health Chemistry Group at Livermore spent a day with H-1 discussing health physics procedures.

4. Mr. Kingsley and Mr. Womeldorff of Sandia Corporation visited the Group to discuss radon breath sampling methods.

C. Monitoring

1. On July 25 TA-33 Site was evacuated because of a leak in the filling system. Health tests made on the personnel evacuated show that no one received an exposure in excess of 1/10 the permissible level.

2. Film types Eastman 548-0, Du Pont 502, 834, and 1290 were calibrated to exposures ranging from 0.01 r to 50,000 r. These types of films were used in the Johnston Island tests by Sandia Corporation. The film exposed during the two shots was returned to Los Alamos and processed by H-1.

3. An IBM run for 1954 radiation exposures was completed. We now have external radiation exposures for the years 1954 through 1957 on IBM cards.

4. A system has been developed for the calculation of body burdens of tritium and plutonium on the 704. The plutonium urine assay results for the last 12 years are being transferred to IBM cards and when completed we will be able to calculate the body burden of all personnel who have worked with plutonium.

5. One of the NBS remote data stations which are being installed at NTS for Project 400 tests has been checked for the effect of neutrons. It was found that the system will operate in neutron fluxes up to 10^{11} n/cm^2.

6. The contaminated portions of ML Building were torn down and the combustible material was burned at the Mesita Del Buey dump. Air samples taken during the demolition and burning were all below the permissible level.

7. Shielding estimates were prepared for the Phermex electron gun installation for GMX-11 and the proposed dry filter system at Ten Site.

8. An explosion in the U^{235} recovery system at DP West resulted in high level surface contamination in the room. This area was decontaminated and back into operation the following day. The operator received superficial lacerations of the scalp and left eyebrow. Urine assays indicate that the operator did not get any measurable increase in his body burden.

9. A plastic bag containing plutonium metal ruptured while being stored in a wall vault at DP West. The vault and adjoining room had high surface contamination as the result of this incident. The area was decontaminated and urine specimens have been collected from personnel in the area. The assays of these specimens have not been completed.

Classification changed to Unclassified
by authority of the U.S.E.R.D.A.,
For Philip Lang
(person authorizing change in classification) (Date)
Jean Kelner 7/12
By (Signature of person making the change, etc.)

III. GROUP H-3, SAFETY (Roy Reider, Leader)

A. Accident Record

	Jan. 1 to Aug. 1, 1958	1957
Manhours Worked	3,643,841	6,027,159
Number of Disabling Injuries	7	21
Number of Days Lost	88	1,081
Frequency (Accidents per 1,000,000 Manhours)	1.9	3.5
Severity (Days Lost per 1,000,000 Manhours)	24	179

B. Industrial Accident Experience

On July 21, Donald W. Kelley, CMB-8, received contusions of his right thigh when he bumped it while hastily leaving a room after a small explosion. He was off work until July 24 for a lost time of 2 days.

C. Fires

There were no Laboratory fires during this report period.

D. Motor Vehicle Accidents	Jan. 1 to Aug. 1, 1958	1957
Miles Driven	936,511	1,693,000
Number of Accidents	22	24
Rate (Accidents per 100,000 Miles)	2.4	1.4
Total Cost	$2,629.00	$1,131.00
Accident Cost per 100,000 Miles	$280.00	$67.00

There were three vehicle accidents involving Laboratory personnel during July. Two were backing accidents and one occurred at an unmarked intersection.

E. Incidents

1. On July 25, at TA-33, a leak occurred in Building 86 causing tritium to be released. The site was evacuated and road blocks were set up. The area was monitored with negative results. There were no significant exposures to any of the personnel. A detailed report, H-1-364, Secret, is on file.

2. On July 21 an explosion occurred in a drybox at DP West during the recovery of oralloy from uranium carbide. This process includes the burning of the fines in a pot-like furnace containing an oxygen atmosphere. One furnace was lit and when the second furnace was lit an explosion occurred shattering three drybox windows.

It was found that the drybox was not adequately ventilated and that the intake filter was plugged. It is believed that an explosive mixture of oxygen and graphite dust existed and caused the explosion.

F. General

Austin Burch returned from EPG on August 22. Ellis Stout, on loan to H-3 from CMR, was at Johnston Island during this period.

Roy Reider returned from NTS on July 30 where he attended the Reactor Orientation Meeting and reviewed Project Rover facilities and procedures.

A member of the Safety Office met with representatives of ENG-4, CMB-6, and the Y-12 plant at Oak Ridge to review proposed work of Y-12 personnel with the LASL's large hydraulic press.

A member of the Safety Office met with representatives of GMX-3, SP, W-1 and Security to discuss problems of transferring weapons from Building 410 at S Site to the airports at Los Alamos and Santa Fe.

A safety inspection was made at TA-9 and this and other safety matters were discussed with Lou Smith, Group Leader, GMX-2.

The Group accompanied Herbert Zinger, of UCRL's Explosive Safety Department, on a tour of some parts of S Site which he had special interest in.

A fire protection engineer from ALOO was at Los Alamos approximately three weeks of the past month. The Safety Office made arrangements for his surveys and accompanied him on many of them.

IV. GROUP H-5, INDUSTRIAL HYGIENE (Harry F. Schulte, Leader)

A. Evaluation and Control Work

1. Routine Exposures

During the month routine air samples were collected for beryllium, lead enriched uranium, cyanide, ozone, and mercury. Beryllium air samples were collected during machining at the Beryllium Shop, during one explosive test at R Site, welding at Sigma Building, decontamination at the H-1 decontamination laboratory, and in Kiva 1 at Pajarito Site. Of the 60 air samples collected, all were below the maximum permissible level.

2. Ventilation

Conferences were held with ENG-2 and the using groups to discuss recommendations made for ventilation in the hot cell and dry box installation at TA-48, the new office and laboratory building at TA-33, and occupancy modifications in the laboratories located in Wing 4 of CMR Building at TA-3. Plans were approved