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To:(Addressees - Organization) DEAN D. MEYER - H-1
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LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO

OFFICE MEMORANDUM

THIS DOCUMENT CONSISTS OF 6 PAGE(S)
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TO : Dean D. Meyer, Group Leader, H-1
FROM : Chas. D. Blackwell, General Monitoring Section, H-1
SUBJECT: EXCAVATION AND SHOT IN CHAMBER #2 AT "HOT POINT", TA-33
SYMBOL: H-1-M-20

DATE: April 23, 1952

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Approved by CH-5-10

AUG 06 1952

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Plans for this operation were submitted to this Section a few weeks before the operation was to begin. The plans came by telephone from the different outfits that were to be involved in the operation. Plans were changed several times to meet any situation that might arise and were in no concrete form. It was agreed that the extent of the operation would depend upon the amount and extent of contamination and the condition of the concrete room.

Heavy equipment, to be operated by the Zia riggers, was taken to "Hot Point" on April 7, 1952, and placed in position. Before the equipment was placed, the area over the shaft had been checked and found to be negligible in counts per minute. Operations began on the morning of April 8, 1952, which consisted of removing the dirt from the shaft leading down to the concrete room. The shaft measured approximately 6'x8' and extends downward for 40 feet. The shaft had been shored up completely by 2"x12" timbers with 8"x8" extending from top to bottom in all four corners. The shaft had been filled with sand which made removal by clam shell a simple operation. The sand was slightly damp so the dust problem was at a minimum. At the bottom of the shaft, extending south, was the concrete room which was reinforced with steel. The room had a 12' ceiling and was octagon-shaped. The room measured 14' from side to side. The door of the room was made of steel plate and wood filled. The edges of the door were wedge-shaped, so that the more pressure applied on the door from within, the tighter the door would be closed. The door was secured by a steel latch 3/8" thick and 5"-4" wide, operated by a handle on the outside of the door.

As the dirt was removed from the shaft it was monitored for alpha contamination and the count was found to be negative. Frequent checks were in the shaft as the dirt was removed and this was also found to be free from radioactive contamination. All personnel entering the shaft during and after the removal of the dirt wore full protective clothing, even though it was checked each time before personnel from other outfits were permitted to enter. There was a possibility that fissures could be opened in the shaft which would allow some contamination to seep in. No radioactive contamination was found in the sand that was removed from the shaft, even down to the floor level of the room. The first contamination to be found was on the steel box on the south side of the room. It had

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ruptured during the shot, leaving a crack about 1/4" wide. This box housed the wiring from the room and was fed from the box to the surface by three steel pipes. Approximately 8000 c/m was found on the steel box about four inches above where the seam had ruptured. The rest of the steel box had very little or no count. Contamination on the steel box would not rub off but seemed to be imbedded in the pores of the metal. The sand removed from the steel door was free from contamination but contamination in the amount of 15,000 c/m could be found along the top of the door where it fitted against the concrete. The door had a felt seal and some felt was hanging loose as a result of the blast, and this felt gave a reading of approximately 30,000 c/m.

The door was supported by three hinges, with five bolts holding the hinges on the door side. Two bolts nearest the edge of the door on the top hinge had been sheared by the blast and the door forced out on all sides to make the door bind, which made opening the door very difficult. The handle controlling the latch on the door turned without too much difficulty but we found later that the handle turned without the latch completely lifting from the bracket. All shoring in the shaft was decayed from dry rot and couldn't be used as bracing to jack open the door, so new 8"x8" timbers were used as extra shoring and as a base for a 15-ton jack which was placed against the door. After bending a jack handle, we decided the jack was too light for the job before us. The 15-ton jack was removed and a 50-ton jack was used without success. Additional 8"x8" timbers were set up and two 50-ton jacks were used against the door and the door began to open. Only two personnel were permitted in the pit during the operation of opening the door and these were Laboratory personnel. They were equipped with full protective clothing, including Chemox masks, and plastic hoods over the head and shoulders. As the door was opened inch by inch, the area around the door was monitored and the count began to go up very rapidly. It was very damp around the room and drops of water and white mold could be seen on all the ledges. Everyone had been very concerned about the dust problem when the room was to be entered, but with so much condensation on the concrete, the Po was sticking to the surface very well. On April 11, 1952, when the room was finally reached, Henry Petrzilka and the writer entered the room. It was covered with twisted metal and all the equipment was battered and tossed

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about the room. The rubble was from 1' to 2' high all over the room and our meter gave a reading of 200,000+ c/m on any equipment that was checked. Henry Petrzilka shot several pictures and we returned to the surface. We were monitored by Alex Gutierrez and up to 5000 c/m were found on our booties and 500-800 c/m on coveralls where we had rubbed against the side of the door upon entering and leaving the room. Such small amounts of contamination coming from an area that has such a high level of contamination is believed caused by dampness holding the Po on the surface. Because of illness, James Lawrence took the writer's place in the operation on April 12, 1952. On this date the room was entered again and more pictures were taken, showing the condition of the room. A path was cleared from the door to the center of the room and all the material was placed along the walls. No equipment in the room, except half of the hemisphere having a count of approximately 1,000,000 c/m, was brought to the surface because of the high level of contamination. Eye hooks were welded to the door and additional shoring was placed in the pit to enable the door to be closed with a block and tackle. A table was placed in the center of the room to support 600 lbs. of TNT. The TNT was so arranged that the center of the explosives would be six feet from the floor. By this time, the surface in the room was beginning to dry out because of the presence of outside air and the level of detectable contamination had risen to 250,000 c/m. Protective clothing was not checked because of the danger of getting the probes on the meters contaminated. Protective clothing was removed and placed in containers provided for this purpose. On this date, the only personnel clothing to get contaminated was a pair of pants worn by Henry Petrzilka which had a count of 500 c/m.

On April 14, 1952, the writer returned to TA-33 along with James Lawrence and Alex Gutierrez. The scope of activities had so increased at Hot Point, with the addition of work being carried out at area #6, that three monitoring personnel were required to handle the operation. Personnel entering the room were limited to the smallest number possible and still get the job done. During the entire operation, the area was visited by a large number of personnel that were interested in entering the shaft and some wanted to enter the room. Most were discouraged from entering the shaft and all but essential personnel were discouraged in various ways from entering the room.

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explosive charge was prepared by Robert Stickle and placed in position by Henry Petrask. Dwayne Vier supplied approximately 600 mc of Po in a vial which was placed in with the charge. The door was closed and equipment that was in the shaft only was brought to the surface and monitored. The range of counts found on equipment were from approximately 100 c/m to 20,000 c/m. All items that were small enough were placed in boxes, sealed, and brought to the decontamination pit where they will be cleaned by James Cox and his decontamination crew.

On April 15, 1952, the shaft was refilled and a tank truck filled with water was on hand to wet down the sand as the shaft was being filled. This was to relieve the dust problem in case the shaft was to be re-excavated after the shot and if no contamination could be found on the surface. Three filter queens in the area near the shaft and one placed 1000 ft. away, where personnel were to be located, were run for 1 hour 15 minutes before the shot to record a background for the area and for the filter queens. The filters were changed before shot time and filters run for 1 hour 9 minutes, being stopped 30 minutes after the shot was fired. All personnel, camera crew and firing crew were stationed outside the fence over 1000 feet from firing area and all personnel were issued a respirator. The camera crew was stationed at approximately 800 feet and firing crew 600 feet from firing area. These crews were issued assault masks equipped with ultra filters. The wind, at shot time, was blowing in the direction of observers, so the shot was held up for a few minutes. It was fired at approximately 11:15 A.M. on April 15, 1952, and the wind was blowing from northeast to southwest. As the explosion came, a mass of dirt and debris reached an altitude of approximately 75 feet above the mesa. The dust was quickly carried away by the wind but the mesa was covered with coarse dirt and pieces of burned wood and some metal fragments. Monitors approached the area about 15 minutes after shot time in full protective clothing. The area was free from radioactivity contamination until we reached the fenced area, where 2000 c/m was recorded. The dirt in the area showed a count of 20,000 c/m with bits of wood going as high as 200,000 c/m. Bits of twisted metal from the room were found in the shot area. A crater over the shaft was formed to a depth of approximately 10 feet. The steel pipes, containing the cables were pulled loose from the wall and pushed over in the pit. The concrete block, when

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