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INFORMATION ✓ NECESSARY ACTION RETENTION ✓

RETURN TO FILE RETURN TO J. R. HORAN DESTROY

REMARKS: Your recollection

REPOSITORY INEL

COLLECTION SNAPTRAN
22305, FRC # 430 78 0073

BOX No. FILE: SNAPTRAN 1965
PTR-746, MONITORING PROGRAM FOR

FOLDER THE SNAPTRAN-2 DESTRUCTIVE TESTS

IF UNABLE TO REVIEW PROMPTLY, CONTINUE ROUTING.

11857133

UNITED STATES GOVERNMENT

2-Way Memo

DATE OF MESSAGE
June 17, 1965
DATE OF REPLY

INSTRUCTIONS
Use routing symbols whenever possible.
SENDER:
Forward original and one copy. Conserve space.
RECEIVER:
Reply below the message, keep one copy, return one copy.

Subject: PTR-746, MONITORING PROGRAM FOR THE SNAPTRAN-2 DESTRUCTIVE TEST

To: John R. Horan, Director
Health & Safety Division

5027—101

FOLD — USE BRIEF, INFORMAL LANGUAGE — FOLD

Please refer to your memorandum, symbol HS:WPG:CWS, on the above subject, dated May 7, 1965. PPCo's answers to the comments you made in the noted memo are transmitted by the attached letter. Please indicate by June 28, 1965 if this letter does not answer your comments.

Pattier

Enclosure:
Ny-144-65A (2 cys)

Any remaining problems can be ironed out at the time of the meeting which PPCo has proposed.

Sincerely yours,

John R. Horan, Director
Health and Safety Division

Have this been done?

RST:RJS R.J.S.

From: Don E. Williams, Director
Reactor Division

J.A.P.

OPTIONAL FORM 27
OCTOBER 1962
GSA GEN. REG. NO. 27

1. TO BE RETAINED BY ADDRESSEE

1185734

PHILLIPS PETROLEUM COMPANY
IDAHO FALLS, IDAHO 83401

RESEARCH AND DEVELOPMENT DEPARTMENT
ATOMIC ENERGY DIVISION

June 7, 1965

SNAPTRAN 2/10A-1 Monitoring
Ny-144-65A

Mr. D. E. Williams
Reactor Division
Idaho Operations Office
U. S. Atomic Energy Commission
Idaho Falls, Idaho

Dear Mr. Williams:

With reference to your letter RST:DES dated May 14, 1965, regarding the radiological monitoring program to accompany the SNAPTRAN 2/10A-1 destructive test as outlined in PTR-746, Phillips' views on each comment are submitted for your information:

1. The monitoring program described in PTR-746 represents only a portion of the total monitoring program which Phillips will perform. The area beyond the approximate one mile obstruction fence is to be monitored by the ID Health and Safety Division as per your letter RST:DES dated May 1, 1963. Should there be a significant cloud rise, substantially more of the radioactive debris will be transported beyond the obstruction fence and should be factored into the ID Health and Safety Branch's monitoring program. The KIWI-TNT test at Las Vegas indicates, however, that even with a substantial cloud rise, sufficient quantities of airborne material and fallout occur in the close-in areas to warrant their measurement.

2. Lateral cloud diffusion measurements are needed for diffusion calculations from which the total fission product release can be estimated. Experience gained from the SNAPTRAN 2/10A-3 destructive test monitoring shows that autoradiographic analyses are on the order of a factor of 10 more sensitive than gross gamma counting. This higher sensitivity allows a much more positive identification of the boundaries of the cloud which is used in the calculation of the laterial diffusion parameter. Background radiation interferences on samplers of the grid within the obstruction fence (Phillips' monitoring area) are negligible since most samplers are operated for only 4 minutes while the cloud passes over.

3. The beta sensitive anthracene detectors which are the principle ones used to measure the cloud length are spread out on the 25 m arc with a single unit on the 50 m arc. This distribution was chosen to assure that the main portion of the cloud was sampled by these detectors in at least one position. To spread them out radially on distant arcs

would allow the possibility of a shift in wind direction which would cause the cloud to miss the detectors entirely. Two of these units located on the center line of the grid are located along side gamma detecting monitors. It is hoped that some correlation between the beta detectors and the gamma detectors can be obtained which will allow data from the remaining gamma detectors to be used for cloud sizing calculations.

4. PTR-746 shows eleven fission gas detectors located on the 25 m, 50 m and 100 m arcs. The close proximity of detectors to the reactor is required to obtain samples of the radioactive gases with sufficient concentration for analysis. These same eleven samplers were used on the SNAPTRAN 2/10A-3 test and only one sampler located on the 10 m arc had sufficient activity for analysis. It is Phillips' opinion that fission product samplers on the outer arcs would not obtain measurable activity during the short time while the cloud passes, unless blowers with extremely high flow rates were developed.

5. Phillips has had no experience with the type of sampling suggested. Inasmuch as this seems to fall into the general category of special sampling outlined in your letter RST:DES dated March 5, 1963, wherein Phillips and ID H&S would provide sampling as needed in the other respective areas, and inasmuch as the primary purpose of this data would be to correlate to the CERT data, it is suggested that ID H&S, who has possession of the basic CERT data, carry out the proposed sampling.

6. Phillips has been aware of the beryllium background problem both in the NRTS dusts and filters for many years as a result of monitoring programs at the MTR and ETR. The lack of beryllium in Microsorban filter paper was one of the bases for its selection for use on the previous destructive test. Atmospheric-dust beryllium cannot present a problem since the air samplers in the anticipated beryllium fallout zone will be operated for only 4 minutes during the cloud passage time. During this time it is our opinion that negligible quantities of dust will be collected.

Inasmuch as the monitoring of the downwind areas beyond the IET obstruction fence will yield information which is programmatic in nature and for which Phillips will be responsible, Phillips would be interested in reviewing the ID H&S technical proposal for radiological measurements outside the obstruction fence and off site. We would expect to hold discussions with ID H&S people sometime during the next few months to finalize the monitoring program.

Very truly yours,

Original Signed by
W. E. NYER

Assistant Manager
Nuclear Safety Technology
Atomic Energy Division

WENyer:jlm

cc: D. E. Williams
J. P. Lyon

1185736

y. Hammell

D. E. Williams, Director
Reactor Division

May 7, 1965

John R. Horan, Director
Health and Safety Division

Original Signed by
J. R. HORAN

PTR-746, MONITORING PROGRAM FOR THE SNAPIRAN -2 DESTRUCTIVE TEST

HS:WPG:CWS

Our general evaluation is that this is an adequate monitoring program for the proposed test. Additional comments follow:

Comments

1. The possibility of significant cloud rise due to high initial temperature should be evaluated. If this occurs, there exists a probability that most of the samplers on the inner arcs would not collect significant amounts of radioactive materials. Estimation of the fission product release depends upon adequate measurements of activity with distance.

2. We see no need for autoradiographic analyses. If activities are too low to be measured by gross gamma techniques, no differentiation between cloud and background activity will be possible.

3. Page 1, Para. 5. It would seem that the spacing (3 feet apart) is closer than is needed.

4. Page 6, Para. 2. Redistribution of the detectors should be considered, with reference to the possibility of some located at longer distances. At short distances, small time variations in wind speed and direction could greatly change the apparent length of the cloud. There also may be problems due to the initial size of the cloud.

5. Page 7, Para. 3. It would be much better to have at least two arcs instrumented with fission gas detectors. It is more important in the analyses to have change with distance than cross-wind distribution.

6. Page 8, Para. 1. Loading of some fallout papers with carbon should be considered, especially at the more distant arcs. The collection of halogens would be greatly enhanced and by relation with recent CERT studies, extrapolation to vegetation is possible.

1185737

The clay dusts in the TAN area contain significant quantities of beryllium. Consequently, the natural Be background will be (and has been) found to vary markedly with air motion. It should be anticipated that conditions other than "dead calm" will give rise to such high and variable levels of natural Be as to preclude interpretable results at significant distances from the reactor.

The Be level of the filtering media to be used should be examined carefully. Generally, it will not be possible to obtain meaningful Be results from the usual papers used for collection of radioactivity since the filler used in the latter frequently contains large quantities of Be, eg. CWS6, HV70, etc.

1185738

OFFICE ▶	HS					
SURNAME ▶	JRHoran:pmw					
DATE ▶	5-7-65					

D. E. Williams, Director
Reactor Division

May 7, 1965

John R. Horan, Director
Health and Safety Division

Original Signed by
J. R. HORAN

PTR-746, MONITORING PROGRAM FOR THE SNAPTRAN-2 DESTRUCTIVE TEST

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WPG has only 1 sent back w/corr. cy

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HS
JRHoran:pmw

1185740 5-7-65

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Dan Williams

~~JCK~~

Subject

Include this

~~Our general evaluation is that this is an adequate monitoring program for the proposed test. Additional comments follow.~~

~~PTR-746, Monitoring Program for the SNAPTRAN-2 Destructive Test~~

Comments

1. The possibility of significant cloud rise due to ~~the~~ high initial temperature should be evaluated. If this occurs, there exists a ~~[illegible]~~ probability that most of the samplers on the inner arcs would not collect significant amounts of radioactive ~~[illegible]~~ materials. Estimation of the fission product release depends upon adequate measurements of activity with distance.

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