

8/29/66

LOSS MECHANISM FLOW SHEET

20 grams/month

A. Sewer Losses

process

Are sewer losses reported to the AEC on a routine basis?

Yes

No

If not, are there internal records to substantiate prior and current losses to the sewer?

Yes

No

Does each operating area measure its losses to the sewer: samples

Yes

No

Is there a central collection and measuring point? lab records

Yes

No

How is the quantity of sewer effluent determined?

- (1) volume basis  
(2) weight basis

How are sewer losses sampled?

- (1) thief  
(2) dip  
(3) drain line  
(4) other

How is the sampler operated?

- (1) manually  
(2) automatically  
(3) other

What is the sampling rate?

- (1) continuous  
(2) batch operation  
(3) specify other

continuous samples on creek for health & safety

Are samples composited for analysis?  
On what basis?

Yes

No

Who has the responsibility for sampling?

Production

Who has the responsibility for analysis?

D & S

What methods are used to determine the uranium and U-235 content?

fluor

What are the units of measurement?

- (1) ppm / vol.  
(2) g/l  
(3) d/m/  
(4) other

Is there a form used for reporting sewer losses?

Yes

No

What is retention time for the forms?

permanent log book

Are solutions from the Decontamination of laundry, respirators, etc., measured prior to disposition?

Yes

No

Review piping and tank layout prepared by facility for license application.

No

5 micro filter

Determine total sewer losses to date for the facility. 64 WANK + 6 AVR 70 grams

Document an opinion as to the adequacy of the facility's measurements.

Remarks:



# LOSS MECHANISM FLOW SHEET

## C. Discards To Pit

*they send to burial and this is recorded  
none*

Are pit discards reported to the AEC on a routine basis?  
If not, are there internal records to substantiate prior and current losses to the pit?  
Does each operating area measure its losses to the pit?  
Is there a central collection and measuring point?  
How are discard quantities to the pit determined?  
How are discards to the pit sampled?  
What is the sampling rate?  
Are samples composited for analysis?  
On What basis?

Yes \_\_\_ No \_\_\_  
Yes \_\_\_ No \_\_\_  
Yes \_\_\_ No \_\_\_  
Yes \_\_\_ No \_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Yes \_\_\_ No \_\_\_  
\_\_\_\_\_

Who has the responsibility for (1) sampling?  
(2) analysis?

\_\_\_\_\_  
\_\_\_\_\_

What methods are used to determine the (1) uranium content?  
(2) U-235 content?

\_\_\_\_\_  
\_\_\_\_\_

What are the units of measurement?

\_\_\_\_\_

Is there a form used for recording and reporting pit discards?  
What is the retention time for the forms?

Yes \_\_\_ No \_\_\_

Determine total discards to the pit to date for the facility  
Document an opinion as to the adequacy of the facility's measurements on discards to the pit

\_\_\_\_\_  
\_\_\_\_\_

## D. Discards to Holding Pond

*same as sewer*

Are discards to the holding pond reported to the AEC on a routine basis?  
If not, are there internal records to substantiate prior and current losses to the holding pond?  
Does each operating area measure its discards to the holding pond?  
Or is there a central collection and measuring point?  
How are discard quantities to the holding pond determined?

Yes \_\_\_ No \_\_\_  
Yes \_\_\_ No \_\_\_  
Yes \_\_\_ No \_\_\_  
Yes \_\_\_ No \_\_\_  
\_\_\_\_\_

How are discards to the holding pond sampled?

\_\_\_\_\_

Are samples composited for analysis?  
On what basis?

Yes \_\_\_ No \_\_\_

Who has the responsibility for (1) sampling?  
(2) analysis?

\_\_\_\_\_  
\_\_\_\_\_

What methods are used to determine the uranium and U-235 content?  
What are the units of measurement?

\_\_\_\_\_  
\_\_\_\_\_

Is there a form used for recording and reporting discards to the holding pond?

Yes \_\_\_ No \_\_\_

What is the retention time for the forms?

\_\_\_\_\_

Determine total discards to the holding pond to date for the facility

\_\_\_\_\_

How do pond effluents leave facility boundaries?

*creek*

Are these effluents sampled?

Yes ☒ No \_\_\_

Document an opinion as to the adequacy of the facility's measurements on discards to holding pond

Has an evaluation been made to determine track-out of SS material?

Yes \_\_\_ No ☒

If so, determine total loss by track-out to date for the facility

*insignificant*

REMARKS:

\_\_\_\_\_  
\_\_\_\_\_

*show results  
smear half  
& office which  
runs < 50 dpm*

LOSS MECHANISM FLOW SHEET

A. Sewer Losses

|  |  |    |
|--|--|----|
| Are sewer losses reported to the AEC on a routine basis?   | Yes  | No |
| If not, are there internal records to substantiate prior and current losses to the sewer?            | Yes  | No |
| Does each operating area measure its losses to the sewer:  | Yes  | No |
| or   |  |    |
| Is there a central collection and measuring point?   | Yes  | No |
| How is the quantity of sewer effluent determined?  | (1) volume basis<br>(2) weight basis                       |    |
| How are sewer losses sampled?  | (1) thief<br>(2) dip<br>(3) drain line<br>(4) other        |    |
| How is the sampler operated?   | (1) manually<br>(2) automatically<br>(3) other             |    |
| What is the sampling rate?   | (1) continuous<br>(2) batch operation<br>(3) specify other |    |
| Are samples composited for analysis?   | Yes  | No |
| On what basis?   | <hr/>  |    |
| Who has the responsibility for sampling?   | <hr/>  |    |
| Who has the responsibility for analysis?   | <hr/>  |    |
| What methods are used to determine the uranium and U-235 content?                                    | <hr/>  |    |
| What are the units of measurement?   | (1) ppm<br>(2) g/l<br>(3) d/m/<br>(4) other                |    |
| Is there a form used for reporting sewer losses?   | Yes  | No |
| What is retention time for the forms?  | <hr/>  |    |
| Are solutions from the Decontamination of laundry, respirators, etc., measured prior to disposition? | Yes  | No |
| Review piping and tank layout prepared by facility for license application.                          | <hr/>  |    |
| Determine total sewer losses to date for the facility  | <hr/>  |    |
| Document an opinion as to the adequacy of the facility's measurements.                               | <hr/>  |    |
| Remarks:   | <hr/>  |    |

LOSS MECHANISM FLOW SHEET

B. STACK & SCRUBBERS

|  |  |
|--|--|
| Are stack losses reported to the AEC on a routine basis?   | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Are scrubber losses reported to the AEC on a routine basis?  | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| If not, are there internal records to substantiate prior and current losses to the: (1) Stacks?                      | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| (2) Scrubbers?   | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Are there systems where filters are used independently of scrubbers?   | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| On what basis are the filters changed-out?   | _____  |
| How is the uranium and U-235 content in these determined?  | _____  |
| Are filters processed routinely?   | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Is the volume of air flow from the filters measured prior to venting thru the stacks?                                | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| If so, are the stacks sampled?   | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| What is the sampling rate?   | _____  |
| Who has the responsibility for sampling the stacks?  | _____  |
| Who has the responsibility for analyzing the stack samples?  | _____  |
| What are the units of measurement:   | (1) ppm _____  |
|  | (2) g/l _____  |
|  | (3) d/m _____  |
|  | (4) Other _____  |
| Are there systems where filters are backed up by scrubbers?  | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| If so, is the volume of air flow off the scrubbers measured prior to venting through the stacks?                     | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Are the scrubber stacks sampled?   | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| What is the sampling rate?   | _____  |
| Who has the responsibility for: (1) Sampling scrubber stacks?  | _____  |
| (2) Analysis?  | _____  |
| What are the units of Measurement?   | (1) ppm _____  |
|  | (2) g/l _____  |
|  | (3) d/m _____  |
|  | (4) Other _____  |
| Are the scrubber contents changed out periodically?  | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Are scrubber contents sampled and analyzed for uranium and U-235 content?  | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| What is the disposition of the scrubber contents?  | _____  |
| Is there a form used for recording and reporting: (1) Stack losses?  | _____  |
| (2) Scrubber losses?   | _____  |
| Are radiation alarm devices used to indicate when excessive quantities of SS material are exited through the stacks? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Determine total stack losses to date for the facility  | _____  |
| Determine total scrubber losses to date for the facility   | _____  |
| Document an opinion as to the adequacy of the facility's measurements  | _____  |

REMARKS:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

LOSS MECHANISM FLOW SHEET

C. Discards To Pit

Are pit discards reported to the AEC on a routine basis? Yes \_\_\_ No \_\_\_  
If not, are there internal records to substantiate prior and current losses to the pit? Yes \_\_\_ No \_\_\_  
Does each operating area measure its losses to the pit? Yes \_\_\_ No \_\_\_  
Is there a central collection and measuring point? Yes \_\_\_ No \_\_\_  
How are discard quantities to the pit determined? \_\_\_\_\_  
How are discards to the pit sampled? \_\_\_\_\_  
What is the sampling rate? \_\_\_\_\_  
Are samples composited for analysis? Yes \_\_\_ No \_\_\_  
On What basis? \_\_\_\_\_  
  
Who has the responsibility for (1) sampling? \_\_\_\_\_  
(2) analysis? \_\_\_\_\_  
  
What methods are used to determine the (1) uranium content? \_\_\_\_\_  
(2) U-235 content? \_\_\_\_\_  
  
What are the units of measurement? \_\_\_\_\_  
  
Is there a form used for recording and reporting pit discards? Yes \_\_\_ No \_\_\_  
What is the retention time for the forms? \_\_\_\_\_  
Determine total discards to the pit to date for the facility \_\_\_\_\_  
Document an opinion as to the adequacy of the facility's measurements on discards to the pit \_\_\_\_\_

D. Discards to Holding Pond

Are discards to the holding pond reported to the AEC on a routine basis? Yes \_\_\_ No \_\_\_  
If not, are there internal records to substantiate prior and current losses to the holding pond? Yes \_\_\_ No \_\_\_  
Does each operating area measure its discards to the holding pond? Yes \_\_\_ No \_\_\_  
Or is there a central collection and measuring point? Yes \_\_\_ No \_\_\_  
How are discard quantities to the holding pond determined? \_\_\_\_\_  
  
How are discards to the holding pond sampled? \_\_\_\_\_  
  
Are samples composited for analysis? Yes \_\_\_ No \_\_\_  
On what basis? \_\_\_\_\_  
Who has the responsibility for (1) sampling? \_\_\_\_\_  
(2) analysis? \_\_\_\_\_  
  
What methods are used to determine the uranium and U-235 content? \_\_\_\_\_  
What are the units of measurement? \_\_\_\_\_  
  
Is there a form used for recording and reporting discards to the holding pond? Yes \_\_\_ No \_\_\_  
  
What is the retention time for the forms? \_\_\_\_\_  
  
Determine total discards to the holding pond to date for the facility \_\_\_\_\_  
  
How do pond effluents leave facility boundaries? \_\_\_\_\_  
Are these effluents sampled? Yes \_\_\_ No \_\_\_  
Document an opinion as to the adequacy of the facility's measurements on discards to holding pond \_\_\_\_\_  
Has an evaluation been made to determine track-out of SS material? Yes \_\_\_ No \_\_\_  
If so, determine total loss by track-out to date for the facility \_\_\_\_\_

REMARKS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

| MEMO ROUTE SLIP<br>Form AEC-93 (Rev. May 14, 1947)  |   | See me about this.<br>Note and return.  | For concurrence<br>For signature. | For action.<br>For information. |
|---|---|---|-----------------------------------|---------------------------------|
| TO (Name and unit)<br><b>C. A. Keller<br/>Director<br/>Production Division<br/>OROO</b>             | INITIALS<br><br>DATE                              | REMARKS<br><b>Enclosed are copies of the Sample Verification<br/>Data and check weight sheets which were completed<br/>at the Union Carbide Plant in Lawrenceburg, Tennessee.</b> |                                   |                                 |
| TO (Name and unit)<br><b>ATTENTION:<br/>John W. Bates,<br/>Nuclear Materials<br/>Control Branch</b> | INITIALS<br><br>DATE                              | REMARKS   |                                   |                                 |
| TO (Name and unit)  | INITIALS<br><br>DATE                              | REMARKS   |                                   |                                 |
| FROM (Name and unit)<br><b>Paul R. Guinn<br/>Radiation Specialist<br/>CO:II</b>                     | REMARKS<br><i>File: Union Carbide<br/>SNM-724</i> |   |                                   |                                 |
| PHONE NO.   | DATE<br><b>8/29/66</b>                            |   |                                   |                                 |

USE OTHER SIDE FOR ADDITIONAL REMARKS

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