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October 5, 1945

IV.

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**SPECIAL INVESTIGATION OF UNUSUAL INCIDENTS
 OF 8-29-45 AT 100-B AND 9-7-45 AT 100-F**

On October 4, 1945 at 1:30 PM an investigation of two unusual incidents at 100-B and F was held at 100-F by:

M. H. Smith, C. M. Gross, R. R. Lunt, K. W. French, C. A. Priole,
 G. E. McMillan, C. M. Patterson, L. L. German, W. H. Warren and
 J. E. Carlton

In order to determine how the incidents occurred and what steps should be taken to prevent a future occurrence.

ITEM A (UNUSUAL INCIDENT AT 100-B)

On August 29, 1945 at 100-B the normal water pressure was returned to four tubes ready for discharging while the Rear Face Crew was in the discharge area. Before the water pressure could be again reduced, the perforated dummies and a few of the lead dummies were forced out by the water pressure. Later it was found the two supervisors' tube discharge lists did not correspond, so apparent insufficient verbal checking between the two supervisors took place.

The following recommendations were made at the investigation which should prevent a recurrence in the future:

I. Complete work on one header before starting to work on a second header.

- Remove tip-offs from tubes and replace caps on the tubes of the header at the rear face.
- Seat charge and cap tubes on header at the front face.
- Return the water flow on the header to normal at the front face.
- Return to normal water flow on the header at the rear face.
- Reduce the water flow on the new header at the front face.
- Set valves for reduced water flow at the rear face on the new header.
- Remove caps from tubes at the rear face and place them on the elevator to the top.

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- II. Prepare front and rear face tube lists by use of carbon paper so copies are identical.
- III. Have supervision double check on headers before actually turning any valves.
- IV. Two headers can be set up and worked on at the same time so long as they are adjacent chilled and unchilled headers. However, when two headers are used all tubes are to be discharged before the rear face crew enters the back face and then all discharged tubes are to be capped before any tubes are seated and both headers returned to normal flow before a new header has the flow reduced.

ITEM B (UNUSUAL INCIDENT AT 100-F)

On September 7, 1945 at 100-F the supervisor in charge of the rear face crew attempted to enter the discharge area before the area was safe to enter. The HI representative stopped the crew before anyone had reached the inner room when the needle of his instrument indicated a high reading. The operating supervisor of the Rear Face Crew had misunderstood the instructions of the Front Face Supervisor and instructed the monitor room operator to unlock the discharge area doors before the charging crew had actually completed their job. Actually, the Monitor Room Operator who also was listening to the conversation on the communication system got the same impression. The supervisor on the Front Face discovered the condition as soon as the lights at the charging area flashed indicating access to the discharge area and immediately announced over teletalk to not enter the discharge area.

It was the opinion of the members at the investigation that the following steps would prevent a recurrence of the incident.

- I. Place L & N recorder at monitor room for 20 foot level on most sensitive scale and have monitor room operator always check the reading of the recorder in the monitor room before unlocking doors to the discharge area.
- II. Have supervision use more precise terminology over communication systems and always repeat instructions back for confirmation before entering discharge area.
- III. Place microammeter outside door to 30-foot level far side and have supervisor or chief operator check reading before instructing monitor room operator to unlock discharge area doors.
- IV. Have supervision request L & N reading from monitor room operator before giving him instructions to unlock discharge area doors.
- V. Standardize the communication systems terminology at all three areas.

The attached procedures for communication system and terminology as used at 100-F Area are for purposes of review and approval by the P. C. Committee for the three 100 Areas.

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COMMUNICATIONS SYSTEM

1. A conduit from the monitor room 6 party voice power monitor is installed to the 30-foot level near stairwell and the following points are connected on A-6 circuit (line 6 of 6 party system):

- (a) 30' near stairwell
- (b) Fly's eye (by jumping V.P. 2 to A-6 in monitor room)
- (c) Front elevator
- (d) Rear elevator
- (e) Storage area
- (f) Monitor room

The control room and elevator machinery room also have A-6 taps but these are not normally used at discharge.

2. Current use of communications during discharge operations is as follows:

- (a) Front elevator "mike" on A-4, front elevator speaker on A-5, rear elevator "mike" on A-5, and rear elevator speaker on A-4. This enables front and rear elevator crews to carry on two-way communication.
- (b) Front elevator, 30' near stairwell, monitor room, fly's eye and occasionally the storage all have V.P. phones on A-6 for all communications except that carried on speakers. (It has been suggested that a direct line (A-5) be used between storage area and front elevator during separations.)

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STANDARD COMMUNICATION PROCEDURE & TERMINOLOGY

Below is a suggested standard communication procedure and terminology for use during discharge operations. The symbols used are as follows:

- (a) Mode of communication - "M" -- speaker-'mike' set-up presently installed on elevators and used on lines A-4 and A-5.
 "P" - V. P. 'phone used on line A-6 (except where A-5 is indicated).
- (b) Origin of message - (F) Message comes from front elevator
 (R) From rear elevator
 (MR) Monitor room
 (SA) Storage area

The discharge procedure will be followed thru one complete cycle.

After the rear face crew has attained clearance and entered the discharge area, they should immediately establish contact with the front face. (Refer to preceding minutes for approved procedure for clearance.)

- 2-M (R) Rear to front
 (F) Come in rear
 (R) We are in discharge area
 (F) Right.

The rear crew will then proceed to remove tip-offs and cap-up tubes. When this is completed -

- 2-M (R) You may seat tubes on row (or rows) _____.
 (F) OK to seat tubes on row (or rows) _____.
 (R) Right

Having seated and capped the tubes the front crew will return the old header to normal flow. This completed -

- 2-M (F) Return _____ 1/2 to normal flow
 (R) OK to return _____ 1/2 to normal flow
 (F) Right

Rear crew completes valving and reports -

- 2-M (R) Header _____ 1/2 returned to normal flow.
 (F) Right

Front crew will then proceed to reduce flow on new header. When this is completed they will instruct -

- 2-M (F) Set up _____ 1/2 for reduced flow
 (R) OK to set _____ 1/2 for reduced flow
 (F) Right

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Rear crew will carry out these instructions and report -

S-M (R) 1/2 set for reduced flow
(F) Right

Front crew will then make final flow adjustment and call to rear -

S-M (F) You may put tip-offs on tubes _____, _____, _____, _____
(R) OK to put tip-offs on tubes _____, _____, _____, _____
(F) Right. (Or no, tubes _____, _____, _____, _____ in case a mistake has been made).

When tip-offs are on, rear crew will run the elevator up, etc. and report -

S-M (R) We are leaving the elevator. I will contact you on the phone.
(F) Right

Once outside the discharge area with all doors closed, the rear crew will call the front -

"F" (R) The discharge area is clear - proceed to push.
(F) Discharge area clear - OK to push (Meanwhile observing W.A. signal lights indicating that all doors are closed).
(R) Right.

The front crew will then proceed with the discharge. In case a separation is necessary, when the time arrives to make the separation -

"F" S-M (F) Front to storage area
(SA) Come in front
(F) Raise the separators
(SA) Right

Separators are raised

(SA) Separators up
(F) Right

When time comes to end separation, same as above except words "lower" and "down" be substituted for "raise" and "up".

When the front crew has completed the discharge -

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"F" S-M (F) Come in rear
(SA) Come in front
(F) The push is complete, you may enter the discharge area.
(SA) Push complete - OK to enter discharge area.
(F) Right
(R) Now to monitor room (This is same as supervisor or the Gyr. at place).
A-M (SA) Come in rear
S-M (R) What is your reading (on 20° near A for chambers)
(SA) Reading is zero (30° checks with SA).
(R) Open 30° door
(SA) Right

Door is opened and rear crew enters discharge area.

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