



Interoffice Communication

To Environmental File
From G. S. Hoenes
Date June 11, 1981
Subject EDC Leak from H-110A
Reportable Superfund Incident

On May 25, 1981 a leak developed in the EDC Product Cooler, H-110A, which resulted in the loss of EDC into the cooling water serving the exchanger. It was subsequently determined that the amount of EDC leaked into the cooling water represented a "reportable quantity" under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, also known as Superfund Laws. Following is an account of the incident, an account of the phone call made by Mike Hayes to the National Response Center to report the release, and a copy of the cursory calculations used to determine if the amount of EDC leaked was a "reportable quantity".

A handwritten signature in cursive script that reads "Greg Hoenes".

Greg Hoenes

br
CC:
JAD-JWW-MLA-GLF-DLD-MGH
Process Engineering Environmental File

CCR 000041407

ACCOUNT OF H-110A EDC LEAK

The following is an account of the events surrounding the incident and the action taken:

On Monday May 25, 1981 the routine analysis of the cooling water to the EDC Product Coolers, H-110A&B, showed the presence of 8000 PPM of EDC in the cooling water. The initial sample was taken at approximately 11:00 pm and the analytical results were returned at approximately 1:00 am on Tuesday May 26, 1981. The cooling water stream was immediately resampled to check the analytical results. Analytical results from the second sample were received at approximately 3:00 am on May 26th and showed 10,000 PPM in the cooling water stream. Mike Ashby, the Process Superintendent, was promptly notified and Operations was instructed to shut the unit down. The EDC Purification System was shut down as of 4:00 am on May 26th. The H-110A&B exchangers were opened and a tube in the H-110A exchanger was identified as the source of the leak. The bad tube was plugged and the unit was started up at 11:00 am on Tuesday, May 26th.

Upon startup of the exchangers, pressure readings upstream and downstream of the exchangers were obtained to allow the EDC losses from the leak to be approximated. After it was determined that the amount of EDC which had leaked from H-110A exceeded the "reportable quantity" limit of 5,000 lbs. for EDC as stated in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 regulations, a call was placed to the National Response Center to report the release. The call was made at 6:55 pm on Wednesday, May 27, 1981. Attached is an account of that phone call.

CCR 000041408

NOTIFICATION OF EDC LEAK TO NATIONAL RESPONSE CENTER

The following is an account of the phone call made by Mike Hayes to the National Response Center to report a release of ethylene dichloride from a tube leak in H-110A EDC product cooler.

Ensign Soler received the call at the National Response Center.

Hayes: This is Mike Hayes with Conoco Chemicals in Westlake, Louisiana. I am calling under 'Super Fund' to report a release of ethylene dichloride

(Hayes was interrupted by Soler at this point, since Soler did not know what EDC was and wanted to get the spelling correct)

Soler: This is Conoco ?

Hayes: Conoco Chemicals.

Soler: What is the address of Conoco Chemicals ?

Hayes: P. O. Box 605, Westlake, Louisiana 70669

Soler: Telephone Number ?

Hayes: (318) 491-5437

Soler: Location of Incident ?

Hayes: Old Spanish Trail/VCM Plant Road.

Soler: How far from the road ?

Hayes: 1 mile

Soler: County ?

Hayes: Parish of Calcasieu.

Soler: When did the incident occur ?

Hayes: Early Tuesday morning.

Soler: What was the source and cause ?

Hayes: A process heat exchanger developed a leak and released ethylene dichloride to the cooling water system.

Soler: How much material was released ?

Hayes: It is difficult to determine the quantity, but we are confident that the amount released exceeded the reportable quantity of 5000 lbs. The material was released to the air.

Soler: It all went to the air ?

Hayes: Yes, it all went to the air.

Soler: Is anything being done . . . well, I guess you can't do anything if it was all released to the air.

Hayes: At the present time there is nothing that can be done in response to the incident. When it was determined that the exchanger was leaking, the affected section of the plant was shut down and the leak was repaired.

Soler: Oh, you shut down operation of the unit to repair the leak ?

Hayes: Yes, the unit is now in operation again after repairing the exchanger.

Soler: Have you notified any other agencies of the incident ?

Hayes: No, we will however notify the State of Louisiana in the morning.

Hayes then discussed with Soler to a limited extent the form which Soler was completing and its disposition. It was determined that Soler was typing the information directly into a computer which was storing it on a "disk". Hayes asked for a copy of the form and Soler did not know if this was possible. Hayes asked if there was a place on the form for a statement by us. Soler replied that there was a "remarks" section. Hayes then gave Soler the following statement:

"We do not believe that this release represents a hazard to human health or the environment. No clean-up measures are necessary or possible at this time."

CALCULATION OF EDC LOSSES FROM H-110 LEAK

DATA

CW Header Pressure at Pumps 40 psig
CW Pressure After Inlet Control Valve 27½ psig
CW Pressure After H-110 A&B 13½ psig
Control Valve: 8" Keystone Butterfly Valve

To determine cooling water flow ratio design and actual pressure drops. Design No.'s from Parsons Specification Sheet (10-1309-0102).

$$\frac{Q_{\text{design}}}{Q_{\text{act}}} = \frac{\sqrt{\Delta P_{\text{design}}}}{\sqrt{\Delta P_{\text{actual}}}}$$

$$\frac{525,000 \text{ lb/hr}}{Q_{\text{act}}} = \frac{\sqrt{27}}{\sqrt{27\frac{1}{2} - 13\frac{1}{2}}} \quad Q_{\text{act}} = 428,660 \text{ lb/hr}$$

Two samples taken of cooling water 11:00pm 8,000 ppm
1:00pm 10,000 ppm

Exchanger was shut down at 4:00am

Assume leak duration = 5 hrs.

CW concentration = 10,000 ppm (very conservative)

EDC Leaked:

$$428,660 \frac{\text{lb}}{\text{hr}} \text{ CW} \times \frac{10,000 \text{ lbs EDC}}{10^6 \text{ lb CW}} \times 5 \text{ hrs.} = 21,433 \text{ lbs.}$$

CCR 000041411

130,000

EDC LOSSES VS TIME FROM H-110 A LEAK

$$t = 0.047 \log G + \text{CONSTANT}$$

CCR 000041412

