



State of Utah

LABOR COMMISSION

UTAH OCCUPATIONAL SAFETY AND HEALTH DIVISION

Michael O. Leavitt
Governor

R. Lee Ellertson
Commissioner

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Administrator
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Mailing Address:
PO Box 146650
Salt Lake City, Utah 84114-6650
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To: FMC Fluid Control

2825 W. Washington

Stephenville, TX 76401 -3779

Issuance Date : November 8, 2000
Inspection No : 303609507
File Number : 0209507.0
Inspection Date : 08/23/00
Inspection Site :

1085 E. Main
Vernal, Utah 84078

CITATION AND NOTIFICATION OF PENALTY

VIOLATIONS:

The violation(s) described in this Citation are alleged to have occurred on or about the day the inspection was made unless otherwise indicated in the description given below. This citation (or copy) must be posted at or near the location of alleged violation. The citation must be posted until the violation is corrected or abated or for 3 working days, whichever is longer.

ASSESSED PENALTIES:

Assessed penalties are payable to the Labor Commission at the above address unless a notice of contest is mailed in accordance with the information outlined in the next section, "Contests and Appeals", to the Adjudicative Division, Utah Labor Commission, P.O. Box 146615, Salt Lake City, Ut. 84114-6615 or delivered to the Adjudicative Division located in the Heber Wells Building, 160 East 300 South, 3rd Floor, Salt Lake City, Utah. Their phone number is (801) 530-6800.

CONTESTS AND APPEALS: Employers may request an informal review by the UOSH Administrator of any citation, proposed penalty or abatement period. Employees may request an informal review of the abatement period granted to the employer. Informal reviews do not extend the 30 calendar days in which an employer must file a contest for a formal hearing before the Adjudication Division of the Labor Commission. To formally contest the citation employers must file a written notice of contest with the Adjudicative Division within 30 days of receipt of the Citation of Proposed Penalties. The written notice of contest must comply with Utah Code Ann. § 63-46b-3(3)(a). The Labor Commission will then provide an adjudicative hearing. Upon expiration of the 30 day period the Citation and Proposed Penalties are final and not subject to review by any court or agency.

EMPLOYEE RIGHTS: Any employee or representative of employees who believes that the periods of time fixed for correction or abatement of a violation is unreasonable has the right to contest the periods of time by submitting a letter to the Adjudicative Division within 30 days of issuance of the citation.

No person shall discharge or in any manner discriminate against any employee because the employee filed a complaint with the division, instituted any proceeding with the division, conversed with a division representative, or testified in any proceeding or exercised any right afforded under the act, standards or rules of the division. Any employee who suffers adverse working conditions based on the above must contact the Administrator within 30 days.

HAZARD ABATEMENT PROCEDURE and Administrative Waiver Information: Send a letter describing your abatement procedures for all cited violations within 30 days of receipt of citation to the following address

Utah Occupational Safety and Health Division
Utah Labor Commission
P.O. Box 146650
Salt Lake City, Ut. 84114-6650
(801) 530-6901

If a letter is not received, a follow-up inspection may be scheduled.

CITED ITEMS BEGIN ON FOLLOWING PAGE, AUTHORIZED SIGNATURE AND TOTAL PENALTIES APPEAR ON FINAL PAGE.

The following are violations of the Utah Administrative Code and the provisions of 29 CFR 1910 or 1926 which are incorporated by reference.

Description		Date Violation Must Be Abated	Penalty
Serious	1 of 1	1 Day	\$1100.00
R614-1-5.D.3			

Management shall inspect or designate a competent person or persons to inspect frequently for unsafe conditions and practices, defective equipment and materials, and where such conditions are found to take appropriate action to correct such conditions immediately.

(A) During an annual hydrostatic pressure-test of a frac-head manifold at the Halliburton Energy Services Vernal service center on 08/22/00, high pressure caused a hammer-union and clamp to be ejected from the frac head. The projectile struck two employees resulting in the death of one employee and a serious injury to the leg of the other employee. It was known that the high pressures at which the test was performed could lead to parts being ejected at a high velocity from the item being tested. The employer did not take adequate measures to ensure the employees were protected from ejected parts during the pressure test.

(B) When FMC field technicians conduct hydrostatic pressure-testing of items such as a frac head manifold, they followed an unwritten safe-work procedure of positioning the item on the ground with the stops and hammer unions pointing away from the trailer, so that if something blows off it would not be projected into the trailer. Pressure-testing procedures developed and documented by Halliburton state that proper protective devices such as a shield are

The following are violations of the Utah Administrative Code and the provisions of 29 CFR 1910 or 1926 which are incorporated by reference.

Description	Date Violation Must Be Abated	Penalty

to be used to prevent pressurized items from striking personnel. However, these procedures were not followed by the FMC field technicians while pressure testing the frac head. The employer did not ensure that the employees were aware of and following the proper safe-work procedures.

Total Penalty =

\$1100.00

Authorized Signature: 

Date: 10 November, 2000

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:303609507
:0209507.0

INSPECTION REPORT File Name:FMC Fluid Control
UOSH FORM 1

LABOR COMMISSION OF UTAH

OCCUPATIONAL SAFETY AND HEALTH DIVISION

MOD
MOD Date

RELATED ACTIVITY

5.1
Type :Accident
Number :362652547
Satisfied Y/N SAFETY :x
HEALTH :
5.2
Type :170
Number :171059728
Satisfied Y/N SAFETY :x
HEALTH :
5.3
Type :Accident
Number :362652539
Satisfied Y/N SAFETY :x
HEALTH :
6. Total Entries :3

PREVIOUS ACTIVITY

7. PREVIOUS ACTIVITY : (None)
Type :
Number :

Date

Submitted

9-6-00

1st Rev

9-8-01 D.K.

2nd Rev

9/24/02

Returned

1.

2.

3.

Enter

Please send copy to.

Name :

Street :

City :

State :

Zip :

20 each

{Report Date 09/06/00}

ESTABLISHMENT NAME (LEGAL) :FMC Fluid Control
INSPECTION NUMBER :303609507
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8. Establish Name :SEE ABOVE
Change? Y/N :N

9a. Employer ID :171242-0-000

Site Street :1085 E. Main
Site City :Vernal
State :Utah
Zip :84078
Change? Y/N :N

11. City Code :2010
12. County Code :47
13. Mailing Street :2825 W. Washington
Mailing City :Stephenville
State :TX
Zip :76401
14. Telephone Number (Corp.) : (254) 968-2181
15. Control Corp :FMC Energy Systems
16. Telephone Number (Site) : (254) 977-3812 (Ralph Taeuber cell phone)

OWNERSHIP

17. Ownership
a. Private Sector c. State Govt
b. Local Government d. Fed Agency :a

18. Legal Entity
a. Corporation b. Partnership
c. Sole Owner :a

INSPECTION OPENING

19. Advance Notice Y/N :N
20. Open Conference DATE :08/23/00
21. Insp Category S/H :
22. Primary SIC :1389
23A. Sec SIC Guide :

EMPLOYEE INFORMATION

24. Inspection Type
UNPROGRAMMED
a. Accident e. Variance
b. Complaint f. Follow-up
c. Referral g. Unprogrammed
d. Monitoring Related
PROGRAMMED
h. Planned i. Prog. Related :a

INSPECTION CLASSIFICATION

25. A. Safety Planning Guide
Manufacturing :X
Construction :
Maritime :
B. Health Planning Guide
Manufacturing :
Construction :
Maritime :
C. Local Emphasis Pgm Y/N :N
CODE :
D. Nat'l Emphasis Pgm Y/N :N
CODE :
E. Migrant Farmworker Y/N :N

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F. Strategic Plan Activity Y/N

Hazard

Industry

:Y

:

:Manufacturing

26. No. Empes Employ Estab

:

27. No. Empes Covered Insp

:

28. No. Empes Cntl by Empr

:

29. a. Union b. Non-Union

:b

30A. Employee Walkaround Y/N

:N

B. Employees Interviewed

:Y

OSHA-200 DATA

31. Year

:1997-1999 (FMC Jetway - in Ogden)

32. Not Avail

:

33a. LWDII Rate

:0.35 (2/564 x 100)

Year

:1999

34a. Occupational Injury Cases

1: 2:2 3: 4: 5:20 6:19

Occupational Illness Cases

7a: 7b: 7c: 7d: 7e: 7f: 7g:

8: 9: 10: 11: 12: 13:

33b. LWDII Rate

:0.71 (4/564 x 100)

Year

:1998

34b. Occupational Injury Cases

1: 2:4 3: 4: 5:29 6:17

Occupational Illness Cases

7a: 7b: 7c: 7d: 7e: 7f: 7g:

8: 9: 10: 11: 12: 13:

33c. LWDII Rate

:2.5 (14/564 x 100)

Year

:1997

34c. Occupational Injury Cases

1: 2:14 3:4 4:42 5:67 6:12

Occupational Illness Cases

7a: 7b: 7c: 7d: 7e: 7f: 7g:

8: 9: 10: 11: 12: 13:

35. Scope of Inspection

a. Comp.

c. Records Only

b. Partial

d. No Inspection

:b

36. No. Days Visited

:2

WARRANT INFORMATION

37A. Anticipated Warrant

:N

B. Anticipated Subpoena

:N

38. Date Denied

:

39. Date Re-entered

:

40. Date Re-denied

:

41. Date Re-entered

:

44 A. Close Case Y/N

:N

45. Reason No Inspection Conducted

a. Establishment not found

b. Out of business

c. Process not active

d. Ten or less employees

e. Denied Entry

f. SIC not on planning guide

g. Worksite Exempt Voluntary Program

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*

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h.Non-exempt Consultation in progress

i. Other

:

46. Close Confer Date

:08/24/00

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INFORMATION WORKSHEET
UOSH FORM 2

LABOR COMMISSION OF UTAH
OCCUPATIONAL SAFETY AND HEALTH DIVISION

1. Management Representatives Contacted

I= Credentials Presented C= Closing Conference

O= Opening Conference M= Other Mgmt Official

Name :Ralph Taeuber
Title :Manager Integrated Services
Function :I-O-C
WA :Y

Name :Ron Fails
Title :Safety Engineer; Field Safety
Function :I-O-C
WA :Y

2. Names and Addresses of All Organized Employee Groups

Name :
Local No. :
Phone :
Street Address :
City :
State :
Zip :

3. Employees Interviewed

Name :Keith Hightower
Occupation :Senior Field Technician
Name :
Occupation :

4. Other Persons Contacted

Name :Steve Slatky
Occupation :Shared Services Regional Manager
Affiliation :Halliburton Energy Services
Phone :(307) 352-3505
Street Address :1709 Elk St., PO Box 369
City :Rock Springs
State :WY
Zip :82902-0369

5. Opening Conference Information

Date :08/23/00

6. Walkaround Information

Date :08/23/00, 08/24/00

7. Closing Conference Information

Date :08/24/00

8. Opening Conference Checklist (Y/N)

Accident/Illness/Injury Data

Posting Requirements :X
Reporting Requirements :X
Reporting Procedures :X
Review Form 200 :
First Aid Equipment :X
Emergency Phone Numbers :X
Medical/ First Aid Training, CPR :X
Cumulative Trauma Injuries :
Infectious Disease Control :

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Plans/Operations

Fire/Evacuation Plans	:
Disaster- Emergency Plans	:
Chemical- Haz Mat Response	:X
Hazard Communication Plan	:X
PPE (.132)	:X
Respiratory Protection	:X
Hearing Conservation Prog.	:X
Compliance Plans for Regulated Substances (.1000)	:X
Safety Meetings	:X
Employee Training	:X
Equipment- Process Records	:
A. Cranes	:
B. Presses	:
Engineering Controls	:
Ventilation	:
Confined Entry	:
Lockout/Tagout Procedure	:X
Flammables & Combust	:
Explosives	:
Welding Operations	:
Workers Compensation Ins.	:X

9. Closing Conference Checklist

Alleged Violations- Classify	:X
Penalties- Citations	:X
Abatement Dates & Procedures	:X
Abatement Procedures	:X
Certified Mail	:X
Posting Citations	:X
Letters of How and When Abated	:X
Informal Conference	:X
Appeal Procedure	:X
Extensions	:X
Follow Up Inspections	:X
Correct Names, Dates, Addresses	:X
Further Commun. w/ Administrator	:X
If Follow Up Items Abated,	:X
No Further Communications	:
Training Office	:
Consultation Office	:

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ACCIDENT REPORT
UOSH FORM 36

LABOR COMMISSION OF UTAH

OCCUPATIONAL SAFETY AND HEALTH DIVISION

MOD
MOD Date
3. Event Number
4. Establishment Name
Change (Y/N)
5. Employer ID
6. Site Address
Site Street
Site City
Site State
Site Zip Code
Change

:
:
:362652547
:SEE ABOVE
:N
:
:
:1085 E. Main
:Vernal
:UTAH
:84078
:N

7. City Code
8. County Code
11. Primary Sic
12. No. of Employees
13. Ownership (a, b, c, or d)
a. Private Sector
b. Local Govt.
c. State Govt.
d. Federal Agency

:2010
:47
:1389
:
:
:a

Receipt Information

14. Reported By
15. Date
16. Time
17. Job Title
18. Telephone Number

:Ron Fails
:08/22/00
:6:58 pm
:Safety Engineer
:(254) 965-8324

Employee Representation

19. Group Name

Site Contact

20. Name and Location
21. Job Title
22. Telephone No.

:Ron Fails, Stephenville, TX

23. Classification

:Fatality

Event Description

24. Event Date
25. Event Time
26. Number of Fatalities
27. Number of Hospitalized Injuries
28. Number of Non-hospitalized Injuries
29. Number Unaccounted for
30. Type of Event
projectile

:08/22/00
:3:00 pm
:1
:1
:
:

:Blunt force trauma injury to chest from flying

31. Preliminary Description
Two employees were sitting in a trailer performing an annual pressure-test on a frac head manifold. The frac head was located on the ground outside the open rear trailer doors, approximately 20 from the individuals. Water pressure within the frac head caused a

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piece of the frac head to blow off, striking one employee in the upper leg and a second employee in the chest. The individual who was hit in the chest died a few minutes later from internal injuries to the chest; the employee who was hit in the leg was life-flighted to the University of Utah Hospital where he was treated and admitted.

Action

32. Inspection Planned (Y/N)

:Y

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INVESTIGATION SUMMARY

UOSH FORM 170

LABOR COMMISSION OF UTAH OCCUPATIONAL SAFETY AND HEALTH DIVISION

MOD :
 MOD Date :
 2. Summary Number :171059728
 3.1. Related Inspection Numbers
 Type :303609507
 3.2. Related Inspection Numbers
 Type :362652547
 3.3. Related Inspection Numbers
 Type :303609499
 4. Total Entries :3
 5. Name(s) Injured/Deceased
 employee number
 1. Floyd Morganstean
 2. Keith Hightower
 3.
 4.
 5.
 6.

Employees	#1	#2	#3	#4	#5	#6
6. Inspection Number(3.1,3.2,etc.	3.1, 3.2	3.1, 3.2				
7. Sex	M	M				
8. age	37	45				
9. injury a. fatality b. hospitalized c. non-hospitalized	a	b				
10. Nature of Injury (E1)	21	07, 12				
11. Part of Body (E2)	05	16				
12. Source of Injury (E3)	06	06				
13. Event Type (E4)	01	01				
14. Environmental Factor (E5)	05	05				
15. Human Factor (E6)	13	13				
16. Task (a or b) a. regularly Assigned b. Not regularly Assigned	a	a				

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17. Substance Code (Chemical Information Manual)						
18. Occupation Code (AF) (appendix F)	999	999				

19. Type of Event: Blunt force trauma injury to chest from flying projectile
20. Abstract: Two employees were sitting in a trailer performing an annual pressure-test on a frac head manifold. The frac head was located on the ground outside the open rear trailer doors, approximately 20' from the individuals. Water pressure within the frac head caused a piece of the frac head to blow off, striking one employee in the upper leg and a second employee in the chest. The individual who was hit in the chest died a few minutes later from internal injuries to the chest; the employee who was hit in the leg was life-flighted to the University of Utah Hospital where he was treated and admitted.

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INFORMATION WORKSHEET
UOSH FORM 2A

LABOR COMMISSION OF UTAH

OCCUPATIONAL SAFETY AND HEALTH DIVISION

Has this company had an Administrative Waiver ? :N
Date ? :

Safety and Health Program Credits Work Sheet

Number of employees in Utah (Approx). :564 (Ogden)

<u>Item</u>	<u>Awarded</u>
Management Commitment	
5% Clearly established safety and health policies	:5
5% Clear lines of Communications	:0
10% High priority and progressive discipline	:10

Comments: Employer/Employee/CSHO

-Well established safety and health policies

-Halliburton's safe-work policies/procedures not properly communicated to FMC employees

-Progressive discipline policy

Hazard Recognition and Prevention.	
10% Safety and health committee/person	:10
5% For implementation of required programs	:0
5% Systematic maintenance of equip. & facilities	:5

Comments: Employer/Employee/CSHO

-Ron Fails is the Field Safety Manager

-Required programs are generally adequate, but lock-out/tag-out is missing some required elements

-Equipment and facilities (trailer, etc.) appear fairly well maintained

Safety and Health Training.	
10% Safety and health training for new employees	:10
5% On going refresher training	:5
5% Appropriate training on changing conditions	:5

Comments: Employer/Employee/CSHO

-Thorough new employee training prior to employee being released to work in field

-Monthly refresher training using CD-Roms; annual 3-day safety training

Substance Abuse Program.	
10% Active substance abuse program	:10

Comments: Employer/Employee/CSHO

-New employee, post-incident and random drug testing

History Determination.	
10% No prior history of serious violations	:10
10% Rate below (SIC) average rate	:10

Comments: Employer/Employee/CSHO

-No prior history of serious violations

-Injury rate unknown

Total 80%

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NARRATIVE:

PURPOSE

This was an investigation of Accident # 362652547, occurring 08/22/00 at the Halliburton Energy Services Vernal Service Center, involving one employee being fatality injured and a second employee receiving a serious leg injury.

COMPANY DESCRIPTION

FMC Fluid Control Division manufactures and services flow line products such as production valves, pumps and swivel joints to various companies. The company supplies swivel joints, valves and connectors to Halliburton Energy Services. The company owns Jetway Systems located in Ogden. Several field technicians, based out of the company's headquarters in Stephenville, TX, work only temporarily at various locations in Utah. FMC field technicians spend approximately two months each year at Halliburton's Vernal Service Center performing pressure-tests on the various parts that it provides Halliburton.

BACKGROUND

The accident occurred at approximately 2:50pm on 08/22/00. Steve Austin, FMC Human Resources Manager, left a message on the OSHA Hotline Referral that evening at 6:58pm to report the accident. I was in Vernal at the time and received a call from OSHA the following morning at 8:00am and was asked to investigate the accident. I called Steve Austin at 8:15am and he told me that Ron Fails, Safety Engineer, and Ralph Taeuber, Manager of Integrated Services, who would investigate the accident for FMC, were on a flight to Utah and they would call me when they arrived in Salt Lake City. Mr. Austin asked me to postpone beginning the investigation until Mr. Fails and Mr. Taeuber arrived that afternoon.

SUMMARY OF ACCIDENT

Keith Hightower had worked as a Senior Field Technician for FMC Fluid Control Division since 1997. He had been pressure-testing swivel joints and valves, items provided to Halliburton by FMC, at the Vernal Service Center for one week prior to the accident. Josh Bacon and Ben Davis, Halliburton Operator Assistants, had been assisting the FMC employees with the pressure testing for several days prior to the accident and when the accident occurred. Floyd Morganstean, who had worked as a Field Technician with FMC since 1994, had just arrived at the Vernal Service Center the day of the accident.

On 08/22/00 at approximately 2:30pm, Mr. Hightower was in the trailer running the controls to perform an annual pressure-test on a fracturing head manifold (frac head), which consisted of using water pressure to bring the internal pressure of the frac head to its working pressure of 15,000 p.s.i. The rear trailer doors were opened onto the area where the frac head had been placed on the ground 15 feet from the trailer. Mr. Morganstean was seated in a chair behind Mr. Hightower, eating lunch and watching the test display on the computer monitor. When the test pressure inside the frac head reached ~ 9000 p.s.i., Mr. Hightower told Mr. Bacon and Mr. Davis to leave the trailer, explaining that it was unsafe to be in the trailer because there was a possibility of parts blowing off from the item being tested. Mr. Bacon and Mr. Davis went to the breakroom to get a snack and as they were returning and just outside the trailer, they heard a "pop." When the pressure inside the frac head reached ~ 13,000 p.s.i., a hammer-union and clamp were blown off the frac head, flew through the opened rear of the trailer, striking Mr. Hightower in the leg then Mr. Morganstean in the chest. Mr. Davis, who was standing just outside the side trailer door when the accident occurred, was hit in the lower leg by a small piece of metal (a needle valve). Mr. Davis and Mr. Bacon, with other employees at the service center, provided basic first aid care and paramedics arrived on the site approximately 5 minutes later. As soon as Mr. Morganstean was laid down on the paramedics' stretcher he went unconscious and was pronounced dead prior to arriving at the Vernal Hospital. Mr. Hightower was life-flighted from the Vernal Hospital to the UofU Hospital in Salt Lake City, where he was treated and admitted into ICU. Mr. Hightower's primary injury was an open fracture of the upper leg.

OPENING CONFERENCE

I met Mr. Fails and Mr. Taeuber on 08/22/00 at 4:00pm at the Halliburton Vernal Service Center. I presented credentials and held a brief opening conference to discuss what information they had concerning the accident, to explain my purpose in being there.

After an inspection of the site, all items on the opening conference checklist were covered. It appeared that the company had all required safety and health programs in place, except that there were inadequate specific safety procedures for pressure-testing unusually-shaped items such as frac-heads. FMC said that they followed Halliburton's procedures for testing frac-heads, but were never able to locate a copy. Halliburton did finally provide me with a copy of these guidelines/procedures related to pressure-testing. Although there were no specific procedures for testing items such as frac-heads, the procedures stated that items such as shields shall be utilized to protect employees from items under

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pressure-testing. Although there were no specific procedures for testing items such as frac-heads, the procedures stated that items such as shields shall be utilized to protect employees from items under pressure. However, FMC and Halliburton did not adequately inform each other of measures to protect employees against potential hazards encountered during the pressure-testing. Steve Slatky, with Halliburton, admitted that there was inadequate communication between the two companies, such as reviewing safety precautions, prior to beginning the annual pressure-testing. I received a copy of FMC's written safe-work procedures for pressure-testing and employee training records on 09/08/00.

Senior field technicians and supervisors ensure that field technicians are following proper safe work procedures/policies during yearly monitoring of all field technicians while working in the field.

SITE INVESTIGATION

Mr. Fails, Mr. Taeuber, Mr. Madsen, Mr. Slatky and I inspected the accident site. Ben Davis was not available as he was recovering from the accident, but Josh Bacon accompanied us to give his recollection of the events relating to the accident. Halliburton had attempted to preserve the accident scene, except for some items that had been moved in order to gain access to the victims. The trailer was still in the bay; the barriers and cones, used to keep people out of the area while part were being tested, were still in place; the computer on which the pressure-test results were recorded was running, with the screen showing the test when the accident occurred still on display. We also inspected the frac head manifold, which had been removed from the scene and placed in a secured area to avoid being tampered with.

When smaller parts, such as swivel joints (slings) are pressure-tested, they are placed into a metal box inside the trailer, which box provides protection to the employees and equipment in the event any pieces are blown off. Larger pieces are pressure-tested on the ground outside of the trailer. Before an item is pressure-tested its interior is visually inspected and the condition of the walls tested with an ultrasonic tester (to detect hairline fractures). Most of the larger pieces that are tested have only two openings, one at each of the length of the piece (180° to each other). Items such as hammer unions and stops are clamped to these openings during the pressure-test. Metal barriers are positioned at each side of the item being tested for protection in the event a hammer union or stop blows off, and cones are positioned around the perimeter of the testing area to keep unauthorized employees out during the testing. For items with openings on several sides, such as the frac head manifold, no additional barriers are used. Employees follow a procedure of positioning the item on the ground in such a way that the stops and hammer unions (attached to the openings during the test) are pointing away from the trailer, so that if something blows off it would not be projected into the trailer. The frac head which caused the accident had leaked water from the stops and clamps during two attempts of a pressure test just prior to the test when it blew. The frac head was moved by a forklift to a shop in the adjacent bay where Halliburton maintenance employees tightened the clamps, then repositioned the frac head on the ground in front of the FMC trailer.

CLOSING CONFERENCE

A closing conference was held on 08/24/00 with Mr. Fails and Mr. Taeuber. All items on the closing conference checklist were addressed. I explained that I would recommend that the company be cited for one serious violation for not having a barrier protecting the employees from the items being pressure-tested.

WITNESS INTERVIEWS

Josh Bacon said that a fork lift was used to transfer the frac head to and from the shop adjacent to the bay, where the leaking seals were replaced. Prior to the third attempted pressure-test, Mr. Lapido, the forklift driver, was returning the frac head, suspended by a chain wrapped around one end of the frac head. Josh Bacon observed the driver lowering the frac head in such a way that the end with the hammer union, which later blew off, hit the ground first, somewhat hard, before the frac head was settled into position on the ground.

On 08/23/00 Ben Davis accompanied me and FMC and Halliburton management to share his recollection of details related to the accident. He said that when the forklift driver lowered the frac head to the ground that it did land quite forcefully on the ground, but that the end that hit the ground was not the end that later ejected from the frac head.

On 08/31/00 I interviewed Mr. Hightower at the UofU Hospital. He said that there were written safe work procedures for pressure-testing, developed by Halliburton. He said the procedures did not include positioning a barrier between the workers and the item being tested.

{Report Date 09/06/00}
ESTABLISHMENT NAME (LEGAL)
INSPECTION NUMBER
FILE NUMBER

:FMC Fluid Control
:303609507
:0209507.0

DOCUMENTATION

Received from the Employer

- Employee Safety Checklist
- Employee Qualification Record
- Training records for K. Hightower and F. Morganstean
- Quality assurance procedures (safe-work policies)
- High Pressure Test Procedures
- Copy of computer monitor showing pressure-test being performed on frac-head when accident occurred

Given to the Employer

- Employer Responsibilities Pamphlet

{Report Date 09/06/00}
ESTABLISHMENT NAME (LEGAL)
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:FMC Fluid Control
:303609507
:0209507.0

WORKSHEET - SAFETY
UOSH FORM 3S

LABOR COMMISSION OF UTAH

OCCUPATIONAL SAFETY AND HEALTH DIVISION

MOD
MOD Date :08/23/00
4. Date :A, B
5. Instances

VIOLATION INFORMATION
6. Type :Serious
8. Item Number :1 of 1
11. No. Exposed :2
12. No. Instances :2
13. Related Activity Code :362652547

ABATEMENT INFORMATION

14. Abatement Date :1 Day

19. AVD/VARIABLE INFORMATION :R614-1-5.D.3

Management shall inspect or designate a competent person or persons to inspect frequently for unsafe conditions and practices, defective equipment and materials, and where such conditions are found to take appropriate action to correct such conditions immediately.

(A) During an annual hydrostatic pressure-test of a frac-head manifold at the Halliburton Energy Services Vernal service center on 08/22/00, high pressure caused a hammer-union and clamp to be ejected from the frac head. The projectile struck two employees resulting in the death of one employee and a serious injury to the leg of the other employee. It was known that the high pressures at which the test was performed could lead to parts being ejected at a high velocity from the item being tested. The employer did not take adequate measures to ensure the employees were protected from ejected parts during the pressure test.

(B) When FMC field technicians conduct hydrostatic pressure-testing of items such as a frac head manifold, they followed an unwritten safe-work procedure of positioning the item on the ground with the stops and hammer unions pointing away from the trailer, so that if something blows off it would not be projected into the trailer. Pressure-testing procedures developed and documented by Halliburton state that proper protective devices such as a shield are to be used to prevent pressurized items from striking personnel. However, these procedures were not followed by the FMC field technicians while pressure testing the frac head. The employer did not ensure that the employees were aware of and following the proper safe-work procedures.

20. Instance Description :Halliburton had developed and documented a policy and procedure stating that when pressure-testing equipment, proper protective devices such as a shield are to be used to prevent pressurized items from striking personnel. FMC Fluid Control Division had been given a copy of this policy/procedure. However, the FMC technicians followed their own procedure of positioning items such as frac head manifolds on the ground with the stops and hammer unions are pointing away from the trailer, to prevent an ejected item from being projected into the trailer. The FMC management had not adequately informed their employees of these policies and procedures, nor had they reviewed these with Halliburton management and employees working with them on the pressure-testing.

21. Photo number :Video
22. Employee Exposure :Fluid control field technician
a. Occupation :2
b. No. :10 hours
c. Duration

{Report Date 09/06/00}	
ESTABLISHMENT NAME {LEGAL}	:FMC Fluid Control
INSPECTION NUMBER	:303609507
FILE NUMBER	:0209507.0

d. Frequency	:Daily
e. Exposed Employee	
Name	:Keith Hightower
Address	:
Phone	:

23. Employer Knowledge :Y

24. Comments (employer, employee, closing conference) :When the test pressure inside the frac head reached ~ 9000 p.s.i., Mr. Hightower told Mr. Bacon and Mr. Davis to leave the trailer, explaining that it was unsafe to be in the trailer because there was a possibility of parts blowing off from the item being tested.

25. Other Employer Information :FMC Fluid Control Division management thought their field technicians positioned a metal barrier between the object being tested and the trailer during pressure testing, as a protective shield. However, the fluid control technician who received the leg injury said the technicians never utilize such a barrier when testing the frac head.

26. Classification

a. Failure to abate? (Y/N)	:N
b. Serious Harm or Death (Y/N)	:Y
c. Knowledge? (Y/N)	:Y
d. Serious or Other	:S
e. Repeat? (Y/N)	:N
f. Willful? (Y/N)	:N

27. Percent reduction of Penalty :80 %

28. e. Proposed Adjusted Penalty :\$1100.00

{Report Date 09/06/00}
ESTABLISHMENT NAME (LEGAL)
INSPECTION NUMBER
FILE NUMBER

:FMC Fluid Control
:303609507
:0209507.0

*** Report turned in for processing. September 6, 2000

1-800-321-OSHA Hotline Referral **Datatrak/Telespectrum After Hours Transcript**

This is a transcript of a call received after hours via OSHA's 1-800 system. It is taken from the recorded message provided by the caller, and is reproduced in its entirety. Blank entries below indicate the caller did not provide this information via the recording. Unless otherwise indicated, it is OSHA policy to notify Area Office personnel having jurisdiction as soon as feasible concerning fatality/catastrophe or life-threatening situations.

The caller selected the following option:	X			
	Fatality/ Catastrophe	Life Threatening	Haz. Condition /Complaint	Information/ Other
Transcript # 082200658p	Date/Time Received -- Mailbox	August 22, 2000. 6:58pm	Date/Time Retrieved from Mailbox	August 22, 2000. 6:58pm
Establishment Name: FMC Corporation Fluid Control Division				
Establishment Address: Vernal, Utah				
Establishment Phone #: 254-965-8320				
Narrative Provided by Caller: 76401 That is not the location of the fatality. I'm calling to report a fatality. My name is Steve Austin. My number at work is 254-965-8320. My home number tonight is 254-965-2243. I've been notified this is FMC Corporation Fluid Control Division. We had an employee working in Vernal Utah that was involved in a fatal accident. There were two other employees that were hospitalized. I will be working on this and talking to Mr. Morganstein's spouse tonight. And you can locate me later at that home number 254-965-2243.				
Caller's Zip Code: 76401		OSHA Reporting ID: 854910		
Date/Time referred to OSHA: August 22, 2000. 8:00pm		Immediate referral:		OSHA Office: Utah State OSHO State Plan Office
		YES	NO	
		X		
Referred to CSHO: Jay Bagley		OSHA Fax #: 801-536-7906		
Transcriber Name: Ron Penrose		Special Considerations:		
Action: Faxed to local area OSHA office.				

08/23/00

ACCIDENT REPORT FORM

8-23-0

Report received by : **1-800 referral service**

Type of Notification: **Phone**

Date : **8-22-00**

Time: **6:00 PM**

Company: FMC Inc.

(Injured's employer Y/N: y)

Address : Telephone: (254)965-8320 (Steve Austin - Home #[254]965-2243)

Street :

City :

Individual reporting accident/title: **Ron Fails, Field Safety**

INJURED PARTY INFORMATION

Employer of Injured: **FMC Inc.**

(Note if other employers on worksite)

Injured's Name : **Floyd Morganstein (Fatal) & Keith Hightower (UofU Hosp)**

Date of Accident : **08/22/00**

Time : **AM**

Type of injury : **1 fatality and 1 fractured leg**

Site of accident : **Facility at Halliburton in Vernal**

How injury occurred (Include type or work being performed, process, equipment, etc.)

: Employee was fatally wounded when hit in the chest by a part of a 5 inch swivel joint or debris during a test that normally would be done in a van that was made for that type of purpose. Another employee was also hospitalized at the Uof U with a leg fracture from the same type of debris.

Were there any Witnesses or pictures taken: ?

Equipment/site released: ?

Give this report to Compliance Supervisor.

Will this Injury be Investigated? Yes ☒ No 1 Dan Green 8-23-00

If not why. _____

Daniel King - Fatality at Halliburton in Vernal

From: <JWBsafe@aol.com>
To: <icmain.dking@state.ut.us>
Date: 08/22/2000 9:16 PM
Subject: Fatality at Halliburton in Vernal

Fatality at Halliburton in Vernal. Worker, Floyd Morganstein, an FMC Inc employee, was fatally wounded when hit in the chest by a part of a 5 inch swivel joint or debris during a test that normally would be done in a van that was made for that type of purpose. Ron Fails is the one I talked to about the accident. He is a field safety person. Steve Austin, (254) 965-8320 at work or (254)965-2243 at home, is the one that called the OSHA 1-800 line to a Mr. Penrose at the referral service. His number is (703) 622-1299. Keith Hightower, another FMC Inc employee was also hospitalized at the U of U with a leg fracture from the same type of debris. The FMC Inc function in Vernal is to do integrated maintenance and rebuild in fluid control for Halliburton on-site. I believe it happened today, 22 Aug AM.