

UNITED STATES OF AMERICA

CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD

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PUBLIC MEETING:
MOTIVA ENTERPRISES LLC INVESTIGATION

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Wednesday,
August 28, 2002

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The Board met in the Christiana Ballroom of the Wilmington/Christiana Hilton Hotel, 100 Continental Drive, Newark, Delaware, at 9:00 a.m., Carolyn Merritt, Chairman, presiding.

BOARD MEMBERS PRESENT:

Carolyn Merritt	Chairman
Gerald V. Poje, Ph.D.	Member
Isadore (Irv) Rosenthal, Ph.D.	Member
Andrea Kidd Taylor, Dr., P.H.MSPH	Member
John Bresland	Member

Charles Jeffress	Chief Operating Officer
Christopher Warner	General Counsel

INVESTIGATIVE TEAM MEMBERS PRESENT:

David Heller	Lead Investigator
Michael Morris	Investigator
Don Holmstrom	Recommendations Specialist

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C O N T E N T S

<u>AGENDA ITEM</u>	<u>PAGE</u>
Opening Statements	
Carolyn Merritt, Chairman	3
Senator Joseph Biden	11
Congressman Michael Castle	24
Secretary Nicholas DiPasquale	31
CSB Presentation	
Background	45
Incident	49
Key Findings	58
Root and Contributing Causes	84
Recommendations	89
Public Comments	98
Board Discussion and Vote	114
Closing Statements and Adjourn	120

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P-R-O-C-E-E-D-I-N-G-S

(9:00 a.m.)

CHAIRPERSON MERRITT: Thank you everyone for being here. The meeting will come to order. Welcome to this public meeting of this U.S. Chemical Safety and Hazard Investigation Board, the CSB. I'm Carolyn Merritt and I'm Chairman.

With me today are my fellow Board members, Dr. Andrea Taylor, Dr. Irv Rosenthal, Dr. Gerald Poje, Mr. John Bresland. Also with us this morning is the Agency's Chief Operating Officer, Charles Jeffress and its General Counsel, Christopher Warner and members of the staff.

This is my first public meeting with the CSB as Chairman and it's a privilege for me to be here. John Bresland and I were just confirmed by the U.S. Senate on August 1st. This also marks the Board's first meeting in the State of Delaware. Unfortunately it's a sad event that makes this meeting necessary. As all of you know, on July 17th last year, a serious explosion occurred at the Motiva Oil Refinery in Delaware City.

The explosion occurred as workers with welding and burning equipment were attempting to repair a catwalk above a 415,000 gallon storage tank

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1 of spent sulfuric acid. The sulfuric acid contained
2 hydrocarbon residues from the refining process.
3 Flammable vapors in the tank ignited and the resulting
4 explosion destroyed the tank and ultimately caused the
5 release of over a million gallons of sulfuric acid.
6 This accident has cast a long shadow. Jeffrey Davis,
7 a boilermaker, who was working above the tank was
8 killed in the explosion. He left behind a grieving
9 widow and five children. Eight other workers were
10 also injured. Today we'll not hear about the incident
11 and about Motiva's -- today we will hear not only
12 about the incident and about Motiva's safety
13 practices, but we'll also learn about a point of
14 significant confusion in federal safety regulations
15 that's pertinent to this event.

16 The finding of an important regulatory
17 hole sets our work apart from other agencies. The CSB
18 was specifically established by Congress to study the
19 overall system of chemical safety regulation and
20 management. The regulations we consider today will, I
21 hope, emphasize how important it is to properly
22 implement and adhere to safety procedures in our
23 manufacturing facilities. The cost of not
24 implementing effective accident and release prevention
25 programs is very high indeed.

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1 A severe accident can cause unacceptable
2 consequences, loss of life, impact on the environment,
3 and heavy financial cost to the companies. Companies
4 that are predictive, preventive and proactive can
5 limit such losses. The Chemical Safety Board has the
6 job of investigating after the fact to identify the
7 causes of these losses. Predominantly we find that
8 these accidents could have been avoided if management
9 systems had been more effective.

10 There has been a tremendous level of
11 interest in this accident nationally but especially
12 within the State of Delaware. The Jeffrey Davis
13 Above-Ground Storage Tank Act passed on June 20th is
14 one measure of this heightened attention to the
15 importance of safety issues. I commend Governor
16 Minner, State Senator McBride, and the Delaware State
17 Legislature for their leadership on this issue and I
18 look forward to ongoing cooperation between the CSB
19 and the state government in helping to make this law
20 as effective as possible.

21 Present today at the hearing are Senator
22 Joseph Biden, Congressman Michael Castle and Nicholas
23 DiPasquale, Secretary of Natural Resources and
24 Environmental Controls. Also present Brian
25 Bushweller, State Director for Senator Thomas Carper.

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1 The people of Delaware, I believe, are
2 resolved that there be no repetition of the Motiva
3 accident. Congressman Castle, Governor Minner,
4 Secretary DiPasquale, we of the Chemical Safety Board
5 share your strong resolve. These accidents are
6 avoidable. We hope to count on your enthusiastic
7 support in seeing that our recommendations through to
8 swift action.

9 Whatever recommendations we do adopt this
10 morning, we will carefully track to completion over
11 the coming months. Industry associations, unions and
12 regulatory agencies have an important role in reducing
13 catastrophic accidents through their oversight and
14 advocacy. The circumstances that caused the accident
15 probably exist elsewhere as we are holding the hearing
16 on these events today. Prudent companies and unions
17 will learn from the Motiva events and take the
18 findings of cause and carefully examine their own
19 sites to see if they can prevent this from happening
20 there.

21 If they find some lapses, they can take
22 steps to correct the problem now and avoid similar
23 catastrophes. They can save lives, prevent damage to
24 the environment, and protect the financial well-being
25 of their own companies.

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1 Following opening remarks this morning,
2 our format today will be first a presentation by the
3 investigators of the central findings and conclusion
4 on the cause of the Motiva accident. We'll then have
5 an opportunity for Board questions. And then we'll
6 proceed to the staff recommendations and we'll also be
7 followed by Board questions. If time available we
8 will then open the floor to entertain comments, but
9 not questions, from the public and we would ask you to
10 limit your comments to three minutes.

11 If the Board satisfied, we'll move then
12 to vote and approve the overall report. If approval
13 by the Board of the report, it will be available
14 shortly following on our website which you can look up
15 at www.chemsafety.gov. If you're a member of the
16 public who wishes to offer a verbal comment, please
17 register at the sign-in desk and your name will be
18 called in due course but we reserve the limit -- we
19 reserve the right to limit comments based on time.

20 With that, I'd recognize other Board
21 members for any brief opening remarks. Dr. Poje?

22 DR. POJE: Yes, thank you, Carolyn. Thank
23 you for that introduction to today's proceedings. But
24 first I would like to publicly welcome you and John
25 Bresland to the Chemical Safety Board. Prior to your

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1 arrival, the CSB had been absent a chair for more than
2 two and a half years. This month also marks the
3 first time ever that a full five-member Board has met
4 in session. Both actions are major milestones in the
5 evolution of the Chemical Safety Board.

6 I'm excited about your entry into the
7 agency and thankful for the actions of President Bush
8 to nominate and the U.S. Senate to confirm you to
9 your positions. Modesty denies you the opportunity to
10 present yourselves, so let me.

11 Carolyn Merritt was most recently the
12 Senior Vice President for Environment, Health and
13 Safety at IMC Global, Incorporated in Northbrook,
14 Illinois. In 1994, she was a senior project manager
15 with RMT/Jones and News, Incorporated, a major
16 environmental consulting firm in Houston, Texas. From
17 1988 to 1994, she was with Champion International
18 Corporation, first as a manager of solid and hazardous
19 waste and then as a manager of environment, health and
20 safety.

21 Mr. John Bresland, a native of Northern
22 Ireland, you'll hear that in his comments, became a
23 U.S. citizen in 1983 and most recently he worked as
24 President of Environment and Safety Risk Assessment,
25 LLC, a New Jersey based process safety consulting

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1 firm. He has been a consultant with the Center for
2 Chemical Process Safety of the American Institute of
3 Chemical Engineers, and for 34 years worked for
4 Honeywell International formerly Allied Signal, as
5 operations manager, plant manager and director of
6 environmental risk management. We look forward to
7 learning from your experiences and working with you to
8 enhance chemical safety.

9 Turning to today's session, Motiva's spent
10 sulfuric acid failure, while unique in the annals of
11 the Delaware City Refinery, part of a larger legacy
12 of major tragedies involving tank failures. On
13 January 2nd, 1988, the Ashland Oil Facility outside
14 Pittsburgh, Pennsylvania, failed catastrophically,
15 spilling a tidal wave of millions of gallons of fuel
16 oil over the dikes and into the Greater Ohio River
17 drainage and threatening the water supplies for
18 millions downstream.

19 On October 16th, 1995, the Pennzoil
20 Refinery in Rouseville, Pennsylvania became engulfed
21 in a major fire and explosion that killed five and
22 caused serious injuries. Parallel to the Motiva
23 incident were deficiencies in vessel design, integrity
24 and maintenance programs, problems in the hot works
25 activity and material containment problems. Assuring

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1 the safe management of large storage tanks more
2 important than ever in an era of heightened concerns
3 about chemical safety and security. I'm hopeful that
4 the lessons from this tragedy, if understood and
5 applied, can prevent others. I look forward to the
6 staff presentations and the input and discussions
7 among Board members, recognizing a significant
8 research and analysis of evidence by all involved in
9 today's deliberations. Thank you.

10 CHAIRPERSON MERRITT: Thank you, Dr. Poje.

11 Dr. Taylor?

12 DR. TAYLOR: No other comments other than
13 just to welcome you again, to the Board and to welcome
14 everyone here.

15 CHAIRPERSON MERRITT: Thank you. Dr.
16 Rosenthal?

17 DR. ROSENTHAL: Likewise, welcome aboard,
18 Carolyn and John. Good to have you and looking
19 forward to working with you.

20 CHAIRPERSON MERRITT: Mr. Bresland?

21 MR. BRESLAND: Madam Chair, like you, I'm
22 also a new appointee to the Chemical Safety Board.
23 I'm very honored to have been given this opportunity.
24 This my first public meeting of the Board. I've been
25 working in Washington for approximately three weeks,

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1 so I'm not quite an expert yet. I look forward to
2 working with you and the other Board members on this
3 very important issue of improving chemical process
4 safety.

5 CHAIRPERSON MERRITT: Thank you. At this
6 time, I'd like to introduce Senator Joseph Biden. He
7 a Senator from Delaware. He was elected at age 29 in
8 1972 and re-elected every six years since then. He's
9 a graduate of the University of Delaware and Syracuse
10 University Law School. He has a long-standing
11 interest in environmental issues. Last month as
12 Chairman of the Judiciary Committee, Subcommittee on
13 Crime and Drugs, he held a hearing on whether the
14 Federal Government has the necessary tools to enforce
15 our environmental laws.

16 Senator Biden, we appreciate your
17 appearance with us today and look forward to your
18 statements.

19 SENATOR BIDEN: Madam Chairman, thank you
20 and it was a pleasure to be able to vote for you --

21 CHAIRPERSON MERRITT: Thank you.

22 SENATOR BIDEN: -- to become the Chair of
23 this Board which as reflected in the statements of
24 some of your colleagues, -- has always been important
25 but increasingly focused on by the public at large.

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1 This whole notion of corporate responsibility that we
2 have seen brought in the sharp relief a consequence
3 of very, very innovative accounting practices and some
4 outright fraud, has had an impact, I think, in ways
5 that are good and bad, but good in the sense there's a
6 heightened awareness, I think, on the part of the vast
7 majority of corporate managers as to what their
8 overall responsibility are decent honorable people who
9 are trying to do the right thing by and large and
10 quite frankly, I have a feeling that your Board going
11 to be busier than not. And I would suggest as a very
12 brief prelude to my statement, Nick DiPasquale who has
13 been in charge in the State of Delaware here, has been
14 -- and by the way incredibly helpful to me and I'm
15 sure to Congressman Castle and to Senator Carper as
16 well as the state legislators, in investigating
17 another incident unrelated to your jurisdiction.

18 I was on site at a large chemical complex,
19 a series of complexes and Mr. DiPasquale pointed out
20 that one of the problems that we all face as a nation
21 here the infrastructure of many of these operations
22 are very old and very under-maintained. And we see in
23 the absence of a Superfund fund being in existence, we
24 see in sharp relief, not only the financial
25 consequences of that but the health consequences and I

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1 remember -- I don't want to get him in trouble but I
2 remember Nick saying to me that there's a lot more
3 than meets the eye out there and a lot of managers of
4 chemical as well as other industrial complexes find
5 themselves with all the mergers that have occurred,
6 inheriting and owning facilities that are not quite up
7 to snuff as what they thought they were with
8 significant capital cost to bring them up to speed, up
9 to the safety standards that are necessary. So I say
10 that as a prelude to suggesting that I think, to state
11 the obvious, your work extremely important. I
12 believe it's going to become more and more critical.
13 I believe your work load going to increase, not
14 diminish and the combination of what -- and I want to
15 make it clear, I am not going to comment today on
16 culpability.

17 I must say, as a citizen, not as a chemist
18 or safety expert, reading your report and other
19 reports from the state, there seems to be -- it would
20 be easy to draw conclusions that may not be warranted
21 without my fully being aware of the quote "other
22 arguments", but it's not my function here to do that.

23 My function , as I see it, to determine whether or
24 not there anything in a positive sense that the
25 United States Government, the United States Senate,

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1 the United States House of Representatives, the
2 President can do that will enhance your ability to
3 keep us safer and draw clearer brighter lines so
4 there's less -- reasonable lines so there's less
5 confusion, if there confusion, within the industry
6 about what their responsibilities are, because as you
7 have noted already, and we are fully aware, Mary and
8 her children, four of her children are in the back
9 here, the by-product, the terrible human tragedy that
10 occurs as a consequence of whomever responsible for
11 what happened, the loss of a father, the loss of a
12 husband, the loss of a decent honorable man and a
13 family left to deal with that in the aftermath.

14 Many of us, in our personal experiences,
15 know what that like under different circumstances and
16 when the Board disbands, when this over, when
17 everything gone, Mary still has five children and
18 there still a serious, serious, serious hole in their
19 lives, emotionally, physically and financially. And
20 so, I know how seriously you take your charge and I
21 just want to make it clear that there are those of us
22 and I don't speak for any other senator or
23 congressman, but I think you'll find that we're all in
24 very strong support of your vigorous oversight here
25 and us needing to be told what you need, what you need

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1 if we don't.

2 Mr. Jeffress an experienced hand. He
3 knows his way around and he knows sometimes that
4 administratively it takes a lot longer to get
5 something done than it may be if it gets nudged
6 legislatively and so that's -- I'm not here to tell
7 you what to do. I'm here in part to tell you what I
8 think I should be doing to be positive and I know it's
9 not appropriate necessarily for you to comment on that
10 now, but I would welcome, you know, constructive input
11 as to whether or not you think what I'm suggesting
12 makes sense or doesn't make sense.

13 I have the -- I have the good fortune of
14 having had the number 2 person at EPA, Carol Browner
15 and then the acting director of EPA as a former
16 staffer and an advisor to me know, Mr. McCabe, Michael
17 McCabe. I've tried my best to take this as seriously
18 as possible but we would encourage your input if you
19 have any recommendations for what we shouldn't do.
20 There's an old bad joke, you know. I'm here from the
21 Federal Government, I'm here to help you, you know,
22 what I mean. We don't always help even though we
23 intend to help.

24 Now, let me very briefly again, express my
25 deepest sympathies to Mary and to her children and I

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1 know that none of what's going to happen here going
2 to make things right. I understand that. We all
3 understand that and I wish there was something that
4 would happen. The only thing I can tell you from
5 experience, in time, in time the loss never -- the
6 pain goes away, the pain goes away.

7 Now, I'd also like to express my concern
8 for the continued health problems suffered by eight
9 workers injured in the tank explosion as well as my
10 admiration, quite frankly, as you have observed for
11 the heroism they showed in risking their lives during
12 this incident. We showed it's not just fire persons
13 and policemen and others who engage in heroic acts.
14 It's ordinary people taking care of their mates,
15 trying to figure out how to do the right thing, and
16 they were heroic.

17 I also want to thank all of you members of
18 the Board for coming here this morning and convening
19 the entire panel here. It's important to us and we
20 appreciate it. We understand that it's substantively
21 important but the gesture equally as important to us.

22 Now, I've read the report, Madam Chair,
23 and quite frankly, I was deeply troubled by the
24 Board's finding. I was particularly disturbed with
25 the report's conclusion that Motiva's own engineers

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1 repeatedly recommended internal inspection of Tank 393
2 as far back as 1996. In 1999, 2000 and 2001 these
3 engineers recommended an internal inspection be done,
4 quote, "as soon as possible", according to your
5 report. What's worse, just three weeks before the
6 tank exploded a Motiva operator submitted quote, "an
7 unsafe condition", end of quote, report to his bosses,
8 yet no repairs were made, none, none.

9 In spite of these reports, Motiva did
10 nothing even though Tank 393 was emptied three times
11 prior to the explosion, the last time just three
12 months before Jeffrey Davis was killed and his
13 colleagues were injured. Most of the recommendations
14 being made by the Board relate to things Motiva itself
15 can do to prevent future tragedies. I call on
16 Motiva's management to fully completely implement
17 those recommendations as soon as possible. As far as
18 I'm concerned, these recommendations, these policies,
19 procedures and practices are so basic that they should
20 have been in place long before 2001 and I say that not
21 as an expert but just as hopefully a mildly informed
22 citizen reading a report and understanding a little
23 bit of the background.

24 We've heard a lot lately about corporate
25 responsibility as it relates to accounting practices.

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1 But management responsibility and corporate
2 responsibility goes much further than just to the
3 bottom line in the corporation and whether or not
4 investors are being told the truth which obviously
5 critically important. It also extends to insuring
6 that employees and the public are free from the threat
7 of physical harm on the job or in the neighborhood and
8 we should expect nothing less.

9 Since July 17th, 2001 I've received
10 through my staff, regular updates from both OSHA and
11 from EPA. And I want to thank them both publicly for
12 their responsiveness and their availability, to their
13 ongoing investigations into the explosion which
14 occurred in Tank 393. Although OSHA and EPA have
15 brought to my attention many issues surrounding the
16 events of that day, it the Chemical Safety Board's
17 work which really brings all of this together. In
18 light of the Board's report, I've instructed my staff
19 to do two things; first, to determine whether or not
20 OSHA safety standards can be expanded to include not
21 only sulfuric acid, the substance at issue here in
22 this incident, but any other chemical compounds that
23 can result in similar catastrophic events.

24 Mr. Jeffress knows better than anyone that
25 it was an administrative ruling and quite frankly, I,

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1 as years ago when I used to be on the committee
2 overseeing the EPA and OSHA, I thought, quite frankly,
3 this chemical was covered. I was unaware, to be
4 honest with you, that it was not covered and it was an
5 administrative ruling judge made a judgement that it
6 was not covered.

7 Well, rather than just go back and deal
8 with your recommendation of making sure it's covered
9 and that can be done administratively but as Charles
10 will tell you, it could take a couple of years that
11 route, we want -- I personally, and I don't know about
12 Congressman Castle, but I'd like to see this moved
13 more rapidly. But in the process, I'd also like to
14 seek the expertise of the committee in question to
15 determine whether or not there are other substances.
16 I am not an engineer, I am not a chemist, but are
17 there other substances that reasonably should be
18 covered, that OSHA has the ability to inspect for and
19 regarding. And so my staff has that effort underway
20 with the appropriate committee staff and experts in
21 the Senate and I will personally, with your
22 permission, we have a letter draft for you asking for
23 any additional recommendation you may have of what we
24 should and should not do relative to additional
25 chemicals if there are any. I'm not looking to over-

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1 regulate anything, but I'm looking to make sure that
2 there a rational basis for what OSHA can look at and
3 to.

4 Let me explain briefly. As I read the
5 current regulations, the compound involved in this
6 incident, sulfuric acid, not on OSHA's list of
7 covered chemicals. OSHA defines a catastrophic
8 release as, "A major uncontrolled emission, fire or
9 explosion, involving one or more highly hazardous
10 chemicals that presents a danger to employees in the
11 workplace", end of quote. I think the Motiva
12 explosion qualifies as a catastrophic release and yet,
13 let me repeat, the compound involved in this incident
14 not on OSHA's list to be covered by -- list of
15 covered chemicals.

16 And we need to, I think, make sure it and
17 explore whether there's anything else being left out
18 that should be included in my view. Secondly, I've
19 instructed my staff to look at how the Federal
20 Government can help, if it can help, if it's
21 beneficial, and I personally think it may be, to
22 states implementing regulatory control over above-
23 ground storage tanks, similar to what Delaware has
24 just done this past June. If this means that the best
25 way to prevent these disasters in the future through

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1 national legislation, making sure that there a
2 uniform code, if you will, nationwide, then I will
3 introduce it. Among other things, Delaware's Jeffrey
4 Davis Above-Ground Storage Tank Act requires the
5 registration, inspection and monitoring of storage
6 tanks with a capacity of more than 12,499 gallons.
7 Currently the EPA only regulates above-ground tanks
8 that contain oil. And less than half the states have
9 any regulations similar to the one that exists in
10 Delaware.

11 I know my business Delaware, but my
12 business and our business also the national safety,
13 the safety of all Americans, and the question that I'm
14 asking for the appropriate committee to investigate
15 whether or not there should be a national standard
16 relative to above-ground storage tanks like Delaware
17 has, as you so accurately pointed out, Madam Chair,
18 expeditiously adopted. The Board's report says the
19 Motiva put off inspecting Tank 393 in order to comply
20 with EPA's order to inspect 18 oil tanks on the
21 property, this despite the fact that Tank 393
22 apparently had serious defects that needed to be
23 addressed, including the holes on top of the tanks and
24 things that were obvious to even a layman's eye had
25 they been in a position to walk around and on top of

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1 that tank.

2 We need to prevent situations where
3 corporate managers put off inspections and repairs of
4 tanks not subject to regulation even though they
5 present a serious risk in order to comply with
6 existing laws that cover only some tanks. That to me
7 not an excuse to say the law required me to look at
8 these tanks and that was a regulation; it didn't
9 require me to look at these tanks in the same way, so
10 I put off looking at these tanks.

11 I don't find that as a rational excuse.
12 Let me conclude by saying corporate responsibility
13 does not end with the filing of financial disclosure.

14 Corporations have a responsibility to repeat myself,
15 to keep their workers and the public safe. And I want
16 to thank the Board again for being here today, for
17 doing such a thorough job, for allowing us to speak
18 and I hope that -- and I can't believe they won't --
19 that Motiva does the right thing and fully implements
20 that Board's recommendation.

21 The fact of the matter that I think that
22 we are going to find ourselves, as a consequence of an
23 aging infrastructure, as a consequence of increasingly
24 difficult problems relating to the confusion that
25 exists as a consequence of vast mergers, as a

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1 consequence of the international holdings that exist
2 in many of the chemical and oil industry and
3 companies, I think we're going to find managers very
4 strapped because they're going to have fewer
5 resources, greater infrastructure costs relating to
6 repairs and maintenance of existing facilities, I
7 think your work going to be -- your workload going
8 to increase and I will say one thing to Mary and her
9 children. There never any, any, anything that can
10 rationally explain the loss of your dad and your
11 husband, but the one legacy he may leave, this comes
12 at a moment when the entire country beginning to wake
13 up to the need to increase safety relating to
14 everything from toxic waste sites to hazardous
15 circumstances that need inspection within an industry
16 that increasingly in a position of facing stiff
17 competition with less resources and maybe, maybe,
18 maybe this will be a catalyst for us to begin to
19 change including the industry on its own, to change
20 the intensity of their notion of what's required to
21 maintain existing facilities as they are involved in
22 significant international competition.

23 But, again, I thank you for your work. I
24 thank you for being here and I truly appreciate the
25 opportunity of being able to address you. Thank you.

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1 CHAIRPERSON MERRITT: Thank you very much
2 for your comments and we look forward to working with
3 your staff on these very important issues. And also,
4 I wasn't able to be introduced to Mary Davis before we
5 started. I'd like to thank you for being here and
6 offer our condolences to your family and to yourself
7 on the loss of your husband and father from the Board.

8 At this time I'd like to introduce
9 Congressman Castle. Congressman Castle has a
10 distinguished career in public service. He has been a
11 congressman from Delaware for the past 10 years.
12 Prior to that, he was member of the Delaware House and
13 Senate and in 1980 he was elected Lieutenant Governor
14 and in 1984 Governor. He was re-elected in 1988. As
15 Governor, he developed an environmental legacy program
16 to address environmental issues in the 1980's.

17 Congressman Castle, thank you for coming
18 this morning and I know that you have a continuing
19 interest in the incidents that we are considering
20 today. Please proceed with your statement.

21 CONGRESSMAN CASTLE: Thank you, Madam
22 Chairwoman. I'd like to thank the Chemical Safety
23 Board for being here and for all your interest in this
24 matter.

25 The explosion of Tank 393 at Motiva on

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1 July 17th claimed the life of one man, Jeffrey Davis
2 and I, too, extend my great sympathy to the family of
3 Jeffrey Davis, seriously injured eight others and
4 created an unimaginable environmental degradation of a
5 Delaware city area. But fortunately, this facility
6 has had a history of serious safety and environmental
7 infractions and only tough measures will produce good
8 results.

9 This was a preventable accident which
10 occurred in large part because of lax corporate safety
11 standards. Motiva was not adequately setting or
12 enforcing maintenance and safety rules at its facility
13 before this accident occurred. Since then, Motiva has
14 been trying to deflect the blame. But when it comes
15 to the bottom line, these excuses do not hold water.
16 A man died and others were injured because of poor
17 corporate performance and critical safety issues.

18 After the tragic accident last year, the
19 U.S. Chemical Safety and Hazards Investigation Board,
20 a federal agency for which I strongly support an
21 increase in funding and its involvement in this case,
22 was called in to investigate the causes and make
23 recommendations for change. The Board does not have
24 regulatory authority, only the power to investigate
25 and power to recommend. CSB's findings are a strong

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1 indictment of Motiva's overall management of this
2 facility's chemical maintenance and safety. I would
3 like to comment briefly on some of these findings to
4 make the case that Motiva should have done more to
5 prevent the accident and must do much more to prevent
6 future accidents.

7 I have read the CSB's report and the
8 response prepared by Motiva. In summary, Motiva's
9 assertions that it adhering to general industry
10 guidelines on tank safety and maintenance are
11 unconvincing. The accident did not happen just
12 because a particular contract welding crew did not
13 follow basic safety procedures as Motiva would have us
14 believe. It was an accident waiting to happen because
15 the tank facility was not being adequately maintained
16 and the larger safety and maintenance plan
17 inadequate.

18 While Motiva's response focuses on some of
19 the safety steps that must be taken by its contract
20 crews working around the tanks. I think Motiva
21 continues to miss the overall point that the CSB makes
22 and that Motiva's overall safety and maintenance plan
23 and execution for this facility inadequate. It
24 clear that Motiva has a history of non-compliance with
25 federal environmental laws and regulations at its

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1 refinery. The overall condition of the facility makes
2 spills and accidents more possible and more of a
3 danger.

4 Let me give you some examples. First,
5 Motiva should have done more to detect problems with
6 the tanks. As you will learn, after the tanks leaked
7 and were reportedly repaired, Motiva had three
8 opportunities to conduct an internal inspection of
9 these tanks, which they did not do. In fact, the
10 inspection of Tank 393 was put off until January 2002,
11 six months after the accident which claimed the life
12 of Jeffrey Davis and injured eight others.

13 Second, Motiva should have sought outside
14 expert help to improve the safety of the tanks.
15 Motiva missed an opportunity to bring in experts to
16 help design the safety systems for the tank when it
17 was converted to at tank that would hold a more
18 flammable substance, spent sulfuric acid. These
19 experts could have designed tank systems that would
20 have not leaked flammable vapors.

21 Third, Motiva should have done more to
22 warn the welding crew about the potential danger of
23 the work on the tank. An opportunity to warn Jeffrey
24 Davis and the welding crew in the work -- in the work
25 permit about the presence of highly flammable vapors

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1 in the area was missed, despite the fact the two
2 previous work permits were rejected by other welders
3 in the week before the accident due to concerns about
4 welding near flammable gas.

5 Finally, Motiva apparently ignored
6 warnings it had about the tank from other workers. An
7 opportunity was missed when an employee wrote, an
8 "Unsafe Conditions Report", about the tank when he
9 refused to weld near it. Yet, his report did not lead
10 to safety improvements for the tank.

11 As I said, earlier, the industrial area
12 near Delaware City has been the victim of various
13 environmental tragedies. In fact, something very
14 similar occurred when I was governor in terms of
15 chemical leaks at Formosa Plastics. As a result we
16 shut them down in October of 1985 and one year later
17 they came back and now are achieving lower emission
18 levels than both state and federal level requirements
19 and have proven themselves a good corporate citizen.

20 This a clear example of how tough
21 regulations produce acceptable results. We will soon
22 hear about the recommendations form the Chemical
23 Safety Board about what needs to be done. But I would
24 like to share some of my own remedies with you. For
25 all the reasons I cited above, I believe that changes

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1 do need to be made at Motiva. First, there must be a
2 new corporate commitment to working through the
3 existing problems and preventing future ones. Motiva
4 must stop hiding behind its corporate veil and take
5 responsibility for safety measures.

6 Motiva one of the largest refiners and
7 distributors of oil and gasoline in the country. It
8 owned by two of the largest oil companies in the
9 world, Shell Oil and Aramco. There are not excuses.
10 Aramco and Shell are big corporations which absolutely
11 have top notch safety precautions in place.

12 Two, Motiva and their parent companies
13 must admit to and correct their existing problems and
14 work together with the community to correct and flaws.

15 DNREC and the EPA cannot be full time police
16 officers. Motiva, Aramco and Shell must take more
17 responsibility and improve Motiva's performance.

18 Three, EPA should pursue its civil
19 litigation on Motiva's violation of federal pollution
20 laws to a logical end, which may result in restitution
21 and fines but also hopefully will result in
22 determining a future course of action to prevent this
23 from happening again. Motiva should cooperate with
24 DNREC at all times to fully disclose what happening
25 at Motiva to make Motiva a good corporate neighbor to

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1 the people of Delaware. This means keeping the
2 community and local, state and federal leaders
3 apprised of what going on with the plan in terms of
4 inspections, tank repairs, et cetera.

5 And fifth and finally, if Motiva unable
6 or unwilling to remedy their problems, DNREC and the
7 EPA must take whatever steps are necessary to obtain
8 all safety and environmental compliance. As I lay out
9 my thoughts, I want all of you to know that it not my
10 intention to judge the activities of Motiva harshly or
11 unfairly, but through my reading and my history with
12 the state and involvement with this facility, I
13 believe they are warranted.

14 The remedies I have proposed will
15 hopefully help Motiva resolve its problems and that
16 exactly what my comments aim to do, help Motiva become
17 a better corporate citizen and employer in our state.

18 The future up to Motive and they hold it solely in
19 their hands. Finally, I'd like to thank the Chemical
20 Safety Board for coming to Delaware today to share
21 their recommendations and findings with all of us.
22 The Delaware community greatly appreciates your effort
23 to insure worker safety and the safety of our
24 environment and the public at large.

25 CHAIRPERSON MERRITT: Thank you,

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1 Congressman Castle, for your comments and your
2 support. At this time, I'd like to introduce Nicholas
3 DiPasquale, Secretary of Delaware's Department of
4 Natural Resources and Environmental Control. Mr.
5 DiPasquale Secretary of the Delaware Department of
6 Natural Resources and Environmental Control and he has
7 served as Secretary since April of 1999.

8 He was appointed by former Governor Thomas
9 Carper and reappointed by the current Governor Ruth
10 Ann Minner. He has served for the past 15 years in
11 management positions with responsibility for the
12 administration of federally delegated environmental
13 programs dealing with the regulation of air, water,
14 pollution, waste management and hazardous substance
15 cleanup both in Delaware and in Missouri. Secretary
16 DiPasquale, we welcome you and look forward to your
17 comments.

18 SECRETARY DiPASQUALE: Thank you, Madam
19 Chair and I appreciate the opportunity to provide
20 comments on the Chemical Safety Board report. I'll
21 try not to be duplicative and there a few points that
22 I want to try to elaborate on hopefully to the benefit
23 of the Board.

24 And you've pointed out, I've been serving
25 as Secretary since April of 1999 and I have served in

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1 senior management positions in environmental agencies
2 for the last 15 years with responsibility for most of
3 the major environmental programs.

4 In my remarks this morning, I'd like to
5 summarize the actions that the state has taken in
6 response to the July 17th, 2001 incident at Motiva and
7 provide some general context for those remarks with
8 respect to corporate responsibility as well as the
9 limitations on our environmental laws, which I think
10 might need to be addressed.

11 With respect to the state response to the
12 tank incident the governor demanded that Motiva agree
13 to undertake a third party audit of its mechanical
14 integrity programs at the refinery and to implement
15 recommendations for improvement, findings consistent
16 with your own. DNREC also has filed a civil complaint
17 in Federal Court against the refinery for
18 environmental impacts resulting from the tank collapse
19 including air quality and hazardous waste violations.
20 EPA likewise, filed a federal action for Clean Water
21 Act violations and we have moved that those two suits
22 be joined in Federal Court.

23 The General Assembly passed as several
24 speakers have mentioned, passed Governor Minner's
25 legislative initiative regulating above-ground storage

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1 tanks containing hazardous compounds and petroleum
2 products. I'd like to elaborate on these items
3 further in my testimony.

4 As you probably know, the Delaware
5 Department of Natural Resources and Environmental
6 Control has a long history of regulatory oversight of
7 the Motiva Delaware City Refinery. That oversight
8 ranges from permitting, air emissions and waste water
9 discharges, to regulating the transfer storage and
10 disposal of solid and hazardous wastes. We also
11 regulate the management of extremely hazardous
12 substances at the facility, a program that's
13 consistent with the risk management program under the
14 Federal Clean Air Act.

15 The refinery holds more operating permits
16 from our agency than any other industrial facility in
17 the state. The facility has also consistently
18 violated many of our environmental laws and
19 regulations over many, many years since it originally
20 started operation. Having said that, the findings of
21 the Chemical Safety Board are consistent with and
22 reinforce the observations of the Department of
23 Natural Resources and Environmental Control with
24 respect to the mechanical integrity issues at the
25 refinery.

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1 We recently reviewed the nature of those
2 violations and we've estimated that approximately 70
3 percent of the environmental violations at the
4 refinery during the past six to seven years were
5 directly attributable to the lack of an effective
6 maintenance and repair program for industrial process
7 equipment. I'd like to point out and I will later in
8 my testimony that the environmental laws are not
9 structured to regulate those industrial process
10 equipment. Typically, we pick up violations at the
11 end of a discharge pipe or at the end of a smoke
12 stack.

13 As Senator Biden pointed out, the
14 financial scandals of recent months have raised
15 questions about corporate integrity and responsibility
16 regarding accounting and reporting practices. I
17 think similar questions can be raised about the
18 corporate responsibility for environmental compliance
19 as well. In the first instance, such practices put
20 shareholders' financial health at risk in the latter,
21 the public's physical health. Fortunately this
22 behavior involves only a small fraction of the
23 corporate community. Unfortunately, I would include
24 Motiva's Delaware City Refinery in that group.

25 There a myth that compliance among large

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1 corporations inherently better than that of small or
2 medium sized corporations that lack adequate
3 resources, expertise or the will to comply with the
4 country's complex environmental requirements. It's
5 been my experience in administering these programs for
6 over a decade and a half that large corporations with
7 more than sufficient resources and expertise routinely
8 are found to be in violation with our environmental
9 laws. Sometimes this results from economic dynamics
10 within a particular industry sector, sometimes due to
11 a lack of attention and responsiveness from a huge
12 corporate bureaucracy and for a variety of other
13 reasons.

14 We've found that corporate mergers and
15 acquisitions can create incentives to delay
16 maintenance and repairs and other needed capital
17 investments. Clearly this the case in the petroleum
18 refining industry today in general and with this
19 facility in particular. In response to concerns about
20 maintenance, repairs and mechanical integrity of the
21 Delaware City Refinery, Governor Ruth Ann Minner took
22 the unprecedented step of demanding that Motiva pay
23 for a third party operations and maintenance expert
24 with substantial hands on experience in refining to
25 review Motiva's mechanical integrity programs,

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1 contractors being for by the company and working under
2 the direction of the Department of Natural Resources.

3 I'd also like to point out that the Governor made it
4 clear and I was in a meeting with corporate officials,
5 that those demands had to be satisfied in exchange for
6 allowing that company to continue to operate in the
7 State of Delaware.

8 If they don't abide by those provisions, I
9 think it's her intent to shut this facility down as
10 difficult as that may be not only for the economy and
11 for continued provision of gasoline and other fuels
12 but also for the workers that work at the plant and
13 the contractors that work there. But her resolve
14 unmistakable. She has made it very clear to them that
15 if they don't begin complying with the environmental
16 laws of this state, they will not be allowed to
17 operate.

18 The goal of the evaluation to insure
19 public health and safety and protect the environment
20 by determining if the refinery has minimized risks of
21 operation by appropriately taking into consideration
22 the applicable industry standards and good engineering
23 practices for maintenance, equipment repair,
24 inspection, testing and replacement.

25 In summary, the scope of work being

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1 performed includes evaluating the refinery's programs
2 to insure mechanical integrity of all process
3 operations including all equipment, storage tanks,
4 pressure vessels, and piping, evaluating the
5 refinery's organizational structure, including
6 management systems that are used to make decisions
7 concerning inspection, testing, monitoring,
8 maintenance, repair and replacement of equipment,
9 evaluating the refinery's capital expenditure plans
10 for maintenance, inspection, equipment repair,
11 equipment replacement and turnarounds. And this
12 really unprecedented. Getting behind the decision
13 making processes of the corporation, we believe
14 absolutely essential.

15 We intend, certainly to hold that
16 information confidential because it such, it's
17 protected under state and federal law but we want the
18 company to show us, to demonstrate to us that they're
19 making the capital investments that need to be made in
20 order to operate that refinery safely.

21 Recommendations that result from the
22 review for improvements, the refinery's mechanical
23 integrity programs will be part of a legally binding
24 agreement between the state and the refinery and will
25 include stipulated penalties that will be imposed

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1 should the refinery fail to implement the
2 recommendations on schedule.

3 With a few important exceptions, the
4 nation's environmental laws do not reach into
5 industrial processes. They set standards for air
6 emissions and water discharges at the end of the pipe
7 or the top of the smoke stack. Two very notable
8 exceptions are the Resource Conservation and Recovery
9 Act whose provisions are considered preventative in
10 nature, doing things to keep accidents or keeping
11 releases from occurring, as well as the risk
12 management program under Section 112(r) of the Federal
13 Clean Air Act Amendments of 1990 which requires risk
14 management planning, hazards assessment, emergency
15 response planning and prevention programs for
16 extremely hazardous substances.

17 The scope of these laws, however,
18 relatively limited. RCRA only applies to hazardous
19 wastes. So tanks and containers holding chemical
20 products or intermediates are not covered. In the
21 later instance, extremely hazardous substances are
22 only a small subset of chemicals in use, albeit the
23 ones that represent the greatest potential risk of
24 catastrophic accidents, the origins of the law are the
25 result of the Bhopal incident, as you well know, which

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1 led to the creation of this Board.

2 But by and large the other laws do not
3 impose requirements or standards for inspection,
4 maintenance or repair of industrial process equipment
5 and I think that's an important point. We need to get
6 into the operations of these facilities. Their
7 jurisdiction limited to requirements for the use of
8 pollution control equipment. A release or exceedence
9 has to occur before the enforcement action can be
10 taken.

11 The explosion and sudden tank collapse at
12 the refinery that resulted in the release of spent and
13 fresh sulfuric acid illustrates gaps in both federal
14 and state regulatory programs. The company admitted
15 the tank had a history of corrosion problems. Work
16 orders for repairs had been submitted but the work had
17 not been initiated. The tank collapse and release
18 killed one worker and injured eight others, caused
19 widespread contamination at the facility, released
20 over a million gallons of sulfuric acid contaminated
21 with hydrocarbons to the land and water and resulted
22 in the fish kill and other environmental damage.

23 The spent acid not considered a hazardous
24 waste because it's reclaimed and reused as part of the
25 process. Nor it considered an extremely hazardous

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1 substance. This a glaring hole in the regulatory
2 programs that needs to be addressed. There no
3 federal above-ground storage tank law and only about
4 half the states have some kind of above-ground storage
5 tank requirements. In some cases, those requirements
6 only apply to oil tanks, some include chemical tanks
7 as well.

8 I think Delaware has one of the most
9 comprehensive programs in place and the regulatory
10 requirements will flow from that. It's a fairly
11 comprehensive program. We even regulate tanks between
12 250 gallons and 12,500 gallons. We require them to at
13 least register, tell us what's in the -- what's
14 contained in those tanks, what they're made of,
15 whether or not they're compatible with the structural
16 material of the tank, with the assumption that if we
17 find that there are certain classes of tanks within
18 that category that need to be regulated, we'll be able
19 to come back to the general assembly and subject them
20 to further regulation.

21 Tanks above 12,500 gallons then are
22 subject to nearly full regulation under the program
23 with few minor exceptions. In response to the Motiva
24 collapse, along with other releases from above-ground
25 tanks, Governor Minner proposed and the General

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1 Assembly subsequently passed an above-ground storage
2 tank law that will require companies to meet specific
3 industry standards for construction, inspection,
4 maintenance, repair and replacement of tanks
5 containing hazardous substances. Recommendation in
6 your report suggests that process safety management
7 requirements be part of that program and we certainly
8 intend to pursue that.

9 The legislation applies to tanks of
10 certain minimum size containing circular regulating
11 compounds so it's not just waste, it's a full panoply
12 of chemicals that are in use currently in industry.
13 Smaller tanks that are not subject to regulation must
14 be registered with the Department so we can create a
15 statewide inventory of those tanks. The legislation
16 also requires tanks to be labeled so that emergency
17 responders will be better informed as to the contents
18 of tanks. DNERC will be able to conduct unannounced
19 inspections of tanks and tank owners will be required
20 to maintain inspection of tanks and tank owners will
21 be required to make those records available to the
22 Department.

23 Our agency currently working with an
24 advisory group to craft the regulatory framework that
25 we expect -- and we expect it completed in sooner than

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1 the two years that specified in the law. Because
2 it's a number of different industries that are
3 involved, and because the standards differ from one
4 industry to the next, we need to make sure we do a
5 comprehensive and thorough job of memorializing those
6 requirements in regulation.

7 There are a number of federal and state
8 laws that were violated due to the releases at Motiva
9 and their impacts. As a result, the Department and
10 EPA filed complaints in Federal Court in July. EPA's
11 complaint alleges violations of the Clean Water Act
12 and Delaware's complaint alleges violations stemming
13 from unpermitted air discharges and operating
14 hazardous waste facilities without permits. The state
15 complaint also seeks to recover investigative and
16 response costs incurred by the Department and to have
17 the Court's mandate that Motiva develop and implement
18 an environmental management to assist them in
19 achieving compliance with the environmental
20 requirements. We have pursued that in a number of
21 enforcement cases and we found that having those
22 systems in place, if companies choose to use them,
23 helps them gain compliance.

24 In closing, I'd like to compliment the
25 Board on its report and findings. The report direct

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1 and the findings and recommendations are consistent
2 with our own review and experiences at this facility.

3 To quote from a recent newspaper editorial, "Motiva
4 has become a scourge on the state". I agree
5 wholeheartedly with that comment. Even today as we
6 speak, as a result of an enforcement action that was
7 taken against them by EPA and the state in March of
8 2001, which imposed a \$4 million penalty and \$116
9 million of environmental improvements, the company
10 backsliding on its commitment to that legal
11 enforceable document. This demonstrates an ongoing
12 behavior even in light of the incidents that have
13 occurred that show its recalcitrance in complying with
14 environmental laws.

15 If they continue this course, they will be
16 shut down by this governor. I'm convinced of that. I
17 appreciate the opportunity to speak with you this
18 morning. I certainly want to work with the Board and
19 the Department staff will certainly be available to
20 have further discussions with you and I thank you for
21 allowing me to speak today.

22 CHAIRPERSON MERRITT: Thank you. At this
23 time, I'd like to thank Senator Biden and Congressman
24 Castle and Secretary DiPasquale for their comments. I
25 know you have other responsibilities and we appreciate

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1 very much your being here today and supporting this
2 investigation and the recommendations.

3 At this time, I'd like to ask Charles
4 Jeffress if he would proceed with the staff report.

5 MR. JEFFRESS: Thank you, Madam Chair.
6 The Chemical Safety Board following an incident such
7 as happened here in July of 2001 dispatches a team of
8 investigators to the site to begin our investigation.

9 That team represented here today. The leader of the
10 team, the investigator in charge David Heller and
11 David will be the primary presenter today of the
12 report.

13 Also on the team investigator who will
14 participate in the presentation Mike Morris and with
15 them also on the team Don Holmstrom, the
16 recommendation specialist from the agency who will
17 present the recommendations.

18 The team goes on site to do their
19 investigation. They continue with the interviews, a
20 review of evidence. They then continue with research
21 on incidents of this type, equipment of this type,
22 processes of this type, what appropriate rules and
23 best practices there are governing operations of this
24 type. They develop a draft report among the staff and
25 then present that report to the Board. Today what

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1 you're seeing the staff presenting that report to the
2 Board and it will be up to the Board to act on that.
3 But to make the presentation on behalf of the team,
4 David Heller, the lead investigator in charge.

5 Dave.

6 MR. HELLER: Thank you, Mr. Jeffress.
7 Madam Chair, Board members, Mr. Warner. This morning,
8 Mike Morris, Don Holmstrom and I will be presenting to
9 you the results of the CSB's investigation of the July
10 17th accident at Motiva Enterprises Delaware City
11 Refinery in Delaware City, Delaware. After an
12 introduction of some background, Mike will present a
13 summary of the incident. I'll then detail our key
14 findings and our determination of root and
15 contributing causes. We'll then take a short break.

16 We'll return. Don Holmstrom will present
17 the recommendations arising from our investigation.
18 There will be a number of opportunities for you to ask
19 questions of us as we proceed through the
20 presentation.

21 In addition to Mike and Don, the CSB team
22 who participated in the field phase of the
23 investigation and in the research and analytical work
24 included Kevin Mitchell, Steve Wallace, Giby Joseph,
25 Shannon Jones and Steve Selk. I'd also like to

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1 acknowledge a number of organizations with which we
2 worked during the course of the investigation;
3 Delaware Department of Natural Resources and
4 Environmental Control, that's DNREC, Delaware Fire
5 Marshall's Office, Occupational Safety and Health
6 Administration, Environmental Protection Agency, the
7 U.S. Coast Guard, and the U.S. Attorney's Office in
8 Wilmington, Delaware.

9 On July 17th, Jeffrey Davis, a boilermaker
10 with the Washington Group International or WGI,
11 Motiva's primary maintenance contractor, was killed
12 when Tank 393, a spent sulfuric acid storage tank
13 failed as the result of an explosion. The shell of
14 the tank separated from its floor, releasing its
15 contents. The ensuing fire burned for close to one-
16 half hour. Eight contract workers were also injured.

17 Three other acid storage tanks lost their
18 contents due to leaks caused by the force of the
19 initial blast and the ensuing fire. In total, the EPA
20 estimates that 1.1 million gallons of acid were lost
21 to the environment in the incident and its aftermath
22 and Motiva has estimated that 99,000 gallons of acid
23 were released into the Delaware River.

24 Now, the Delaware City Refinery located
25 on the river. It can process 140,000 barrels per day

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1 of crude oil. At the time of the incident, it had
2 approximately 650 employees and about 300 contract
3 employees. Motiva a joint venture. It's owned by
4 Shell Oil Company and Saudi Refining Company and the
5 Delaware City Refinery one of four Motiva Refineries.

6 We'd like to spend some time talking you
7 through the situation or the acid tank farm. These
8 are the tanks in this tank farm. There's six tanks
9 that were built in I think it was the late '70's and
10 the picture up on the board here, on the screen here,
11 shows the three west tanks, 396, 391 and 392. The
12 tanks are about 47 feet in diameter, 32 feet tall to
13 give you an appreciation for the size. They're about
14 20 feet across from each other in the east/west
15 direction and about five feet apart in the north/south
16 direction.

17 This a view taken from the northwest
18 looking towards where 393 would have been. This 393
19 on its side, 394 in the background and 396 in front.
20 You can see some of the fire damage on 394 and 396.
21 Again, there are six tanks in the sulfuric acid tank
22 farm. They provided storage for both fresh and spent
23 sulfuric acid for the refinery's alkylation process
24 and the tanks had a capacity of 415,000 gallons each.

25 Concentrated sulfuric acid used as a

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1 catalyst in a refinery's alkylation process. It's
2 extremely corrosive. Now, the spent acid also
3 contains several percent hydrocarbons, including a
4 small amount of volatile flammable hydrocarbons such
5 as isobutane. Now, these hydrocarbons can evaporate
6 into the vapor space above the liquid inside the
7 storage tanks.

8 Now, to have an explosion three conditions
9 are required; fuel, oxygen and a source of ignition
10 and these are the three sides of the fire triangle.
11 Take one away and an explosion cannot occur. Now,
12 these conditions came into alignment on July 17th,
13 2001. The tank normally contains sufficient fuel but
14 the very nature of spent sulfuric acid, a condition
15 not well understood by those working that day.

16 And inerting system was not doing its job
17 and allowed air, which oxygen, to enter the tank.
18 The purpose of an inerting system to reduce the
19 concentration of flammable vapors and air in the vapor
20 space of a vessel below the point at which a mixture
21 can sustain combustion. And finally, hot work,
22 burning and welding to cut metal which generated
23 sparks, was being conducted around the tank with holes
24 due to corrosion. And these holes provided a pathway
25 for the sparks to meet the flammable atmosphere inside

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1 Tank 393. And I'd now like to pass the speaker's
2 platform over to Mike Morris, who will take us through
3 the incident itself.

4 MR. MORRIS: Thank you, David. Madam
5 Chair, Board members, Mr. Jeffress, Mr. Warner, the
6 July 17th incident was preceded by a few important
7 events, but before we get into that I would like to
8 show you a couple slides to give you an idea of what
9 was up and down on the catwalk. The slide up here
10 looking south from a tank from above Tank 393, this
11 area looking south toward Tank 395.

12 This the grating that we'll be talking
13 about in the catwalk sections. You can see the stairs
14 in the back. Those are going down Tank 395. This
15 slide looking south from above Tank 396, from there,
16 looking down to Tank 392. And again, you can see the
17 catwalk sections and the grating sections. Work that
18 was being done up there that day and the previous days
19 was sections of this catwalk that were corroded were
20 being cut out and replaced with new sections. How
21 they did it was they would cut out a section and then
22 they would immediately replace that section with a new
23 section so they would not leave any holes.

24 A couple of -- again, the corroded catwalk
25 above the acid storage tanks was what the assignment

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1 was to replace those days. Those catwalk was corroded
2 from the acidic environment that was present in the
3 acid tank farm. Contract workers were assigned to
4 replace these sections. Over the previous month, they
5 had worked on this project four times. However, hot
6 work was denied on at least two other occasions; once
7 for high sulfur dioxide levels in the acid tank farm
8 and then again on June 27th, when flammables were
9 detected by an operator when he went out to do his
10 checks before issuing the hot work permit.

11 That operator went onto write an unsafe
12 condition report outlining the hazards that he
13 believed existed in the acid tank farm. The time line
14 for the July 17th event, the beginning of the shift,
15 four workers were assigned the catwalk job. They went
16 to the acid unit to try and obtain a hot work permit
17 for that day. Around 7:50 a.m. acid unit management
18 issues a hot work permit. Workers begin carbon arc
19 gouging on the grating directly over Tank 396, in this
20 area. Now, I'd like to explain what carbon arc
21 gouging . It's a method of cutting. It uses and
22 electric arc generated between the tip of a carbon rod
23 and the piece of work. It generates high heat and
24 melts the metal and then a stream of high pressure
25 air, streams down the carbon and blows away the metal

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1 and it blows the sparks a good distance.

2 Work in the morning was on this section of
3 grating in this area. They replaced -- they would cut
4 out these sections and then replace them and then
5 between 12:00 and 12:30, they broke for lunch. Now,
6 at 12:30 they returned. The grating that they cut out
7 in the morning, they stacked in this area right here.
8 And when they returned from lunch, the workers lowered
9 the grating down, the cut-out grating, and they
10 stacked it along the north wall inside the dike.

11 Around 1:30 two workers resumed carbon arc
12 gouging on the catwalk above Tank 393. What they were
13 doing at this time, since they replaced this catwalk
14 section in the morning, they were beginning work over
15 here and their thinking was to work back towards Tank
16 396 for the afternoon work. Upon doing this, sparks
17 either entered holes in the roof of Tank 393 or they
18 contact fumes escaping from those holes and this
19 triggers an explosion, a blast which ignites vapors,
20 triggering an explosion and lifts Tank 393 off the
21 ground, separates the shell from the tank floor and
22 sends it 40 feet to the north landing across the dike
23 wall and releasing the contents of its sulfuric spent
24 acid.

25 Jeffrey Davis was killed in the collapse

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1 of the tank. Eight other contract workers were
2 injured. The release of the entire contents of Tank
3 393 and 396, soon after the release hydrocarbons in
4 this acid ignited and burned for approximately 30
5 minutes. This release overwhelmed the containment
6 dike surrounding these tanks. It was spoken before
7 that it was estimated that over one million gallons of
8 acid reached the environment resulting in a
9 significant kill of aquatic life in the Delaware
10 River.

11 This a map of the Delaware City Refinery,
12 in this area. This the Delaware River. Another
13 point of reference the Red Line Creek to the north
14 and this the Delmarva Power and Light Channel. The
15 release of acid went in several directions. One
16 direction -- this the acid tank farm. One direction
17 that it took was to the south. It entered the oily
18 water sewer system of Motiva's waste water treatment
19 and it made its way underground to the waste water
20 treatment plant in this area and then was released and
21 made its way into the Delaware River. Also, sulfuric
22 acid was released to the east and this acid made its
23 way into the storm water sewer. The storm water sewer
24 runs underground and discharges into the Delmarva
25 Light Channel. This was a significant portion of the

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1 release and this where the greatest amount, which was
2 estimated at 99,000 gallons of untreated sulfuric acid
3 reached the Delaware River.

4 Also acid release flowed to the northwest
5 around these ash ponds and made its way into a
6 tributary of Red Line Creek in this area. At this
7 time I will be able to answer any questions that the
8 Board may have.

9 CHAIRPERSON MERRITT: Yes, are there any
10 questions from the Board?

11 DR. POJE: Yes, I have one. Yeah, if you
12 could clarify for me, Mike, a couple of points; one
13 that the work began at 7:50 in the morning. What was
14 your estimate temperature then and temperature around
15 1:30 or so?

16 MR. MORRIS: The actual temperature was,
17 the low that day in the morning was 71 degrees and it
18 increased to 85 degrees in the early afternoon.

19 DR. POJE: Part of my concern there would
20 be the release of vapors in a much higher temperature
21 might be much greater than in the morning.

22 MR. MORRIS: Correct.

23 DR. POJE: The second issue the diking
24 area. Can you describe for me what the nature of the
25 dike was, what size release was it designed to

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1 contain and what type of release was it designed to
2 contain?

3 MR. MORRIS: Sure. The dike wall around
4 these six acid tanks designed to contain 100 percent
5 of the largest tank inside of the dike. So it could
6 contain 110 percent of any of these tanks, since they
7 were all the same size. The type of release that
8 occurred on the 17th was a catastrophic release, which
9 the dike not built or designed to contain something
10 like that. Dikes are usually built to contain a small
11 leak, a steady leak, nothing with this catastrophic
12 amount in this short amount of time.

13 DR. POJE: Just one more clarifying point;
14 you did say that the tank, when it had a degradation
15 in it, released off of its base and was propelled for
16 some distance beyond where it had originally stood.
17 How far was that distance?

18 MR. MORRIS: It was approximately 40 feet.

19 DR. POJE: And what was the distance
20 between 393 and 394 and the distance between 393 and
21 396?

22 MR. MORRIS: The distance between the
23 tanks north and south was approximately five feet and
24 I believe the distance between the tanks east and west
25 was 19 to 20 feet.

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1 DR. POJE: I'm presuming there's no real
2 analysis that says it couldn't have gone in the west
3 direction or in the south direction if it was
4 propelled off of that base.

5 MR. MORRIS: Correct, it was -- it just
6 happened to go to the north.

7 DR. POJE: So we are -- another
8 happenstance to be had of a failure that wasn't even
9 more monumental than the one that occurred that day.

10 MR. MORRIS: Correct.

11 MR. BRESLAND: Mike, the employees who
12 were working at the time, were employees of which
13 company?

14 MR. MORRIS: They were employees of
15 Washington Group International, a contractor that the
16 primary maintenance contractor of Motiva.

17 MR. BRESLAND: And how long had they been
18 working at the facility?

19 MR. MORRIS: Each individual worker?

20 MR. BRESLAND: Well, as I understand
21 there were four workers working on or around the tanks
22 during that day.

23 MR. MORRIS: Correct.

24 MR. BRESLAND: there kind of a general
25 time frame of how long --

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1 MR. MORRIS: The range of the four
2 workers was I believe one worker had been there pretty
3 much consistently throughout his career for over 20
4 years. Another one of the workers was there throughout
5 his career for 15 years. Two of the other workers
6 were apprentices or journeyman, apprentices, I
7 believe, and they had been there a short time, maybe
8 one to two years, not consistently in that plant but
9 as projects would come up, they would come in and do
10 the work and then they would go to other jobsites.

11 MR. BRESLAND: And there was a burning
12 and welding procedure in operation in the plant, which
13 I assume we'll get to later on. Had they been trained
14 in that procedure?

15 MR. MORRIS: Yes, the workers that come
16 in from Washington Group routinely go through a half a
17 day of training of the Motiva safety practices,
18 policies and procedures. They're shown video tapes
19 and they are given -- they are fitted for respirators
20 at that time and go through a long list of
21 requirements before they are permitted to work.

22 MR. BRESLAND: Okay, thank you.

23 MR. MORRIS: Thank you.

24 CHAIRPERSON MERRITT: Are there any other
25 questions?

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1 DR. ROSENTHAL: Yeah, just one question.
2 You said the distance between the I guess east/west
3 of 393 and 396 was approximately 19 feet?

4 MR. MORRIS: Correct.

5 DR. ROSENTHAL: And the catwalk was in
6 that in between area? Where was the catwalk located?

7 MR. MORRIS: That catwalk was in this
8 area between the tanks and it touched every one of the
9 tanks, connected them and gave access to the roofs of
10 the tanks.

11 DR. ROSENTHAL: So in other words, if you
12 worked on the catwalk on one side of the tank, you
13 weren't very far from the other tank.

14 MR. MORRIS: No, definitely not. The
15 maximum distance here 19 feet and the height of the
16 catwalks also about 32 feet which puts them right on
17 top of the tank roofs.

18 DR. ROSENTHAL: Yeah, in other words,
19 it's very difficult to isolate sources of ignition
20 when you're working on one tank from another tank.

21 MR. MORRIS: Correct, it would have to be
22 a critical thing to do. It would take a lot of
23 planning.

24 DR. ROSENTHAL: Okay, thank you.

25 MR. MORRIS: Thank you.

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1 CHAIRPERSON MERRITT: Are there any other
2 questions?

3 MR. MORRIS: At this time Dave Heller
4 would like to overview the key findings of the report.

5 CHAIRPERSON MERRITT: Following Dave's
6 presentation, then we'll take questions and a break.

7 MR. HELLER: Thanks, Mike. We identified
8 quite a few key findings, there are 15 in number to
9 walk you through here. The first key finding an
10 explosion in the vapor space of Tank 393 generated
11 sufficient pressure to separate the tank's floor to
12 shell joint. The explosion, classified as a weak
13 deflagration, most likely occurred when either a spark
14 from the maintenance work contacted flammable vapor
15 coming out of one of the holes in the tank or a spark
16 physically went through one of the holes into that
17 vapor space of the tank.

18 Our second key finding covers a number of
19 regulatory issues but first some background. First,
20 we talk about OSHA's Process Safety Management
21 standard, that's 1910.119 in the Federal Regulations.

22 The Process Safety Management standard or PSM, it's a
23 systematic approach to safety in the prevention of
24 catastrophic incidents. And the standard details 14
25 elements of good safety management practice. The

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1 standard requires adherence to these elements for
2 processes containing a specific list of hazardous
3 substances, including flammables. Now, the key points
4 are sulfuric acid not covered by the PSM standard.
5 Flammables above a threshold quantity of 10,000 pounds
6 are covered. However, in 1995, a judge ruled in a
7 decision called the Meer decision that PSM coverage
8 does not extend to storage tanks -- to stored
9 flammables in atmospheric tanks even if the tanks are
10 connected to a process that covered by the standard.

11 Now, OSHA has not challenged this decision
12 and atmospheric tanks or low pressure tanks not
13 designed to withstand any buildup of internal
14 pressure. Now OSHA did not issue any citations to
15 Motiva under the PSM standard in the citations they
16 issued following this incident, and that leads us to
17 our second key finding.

18 Motiva did not consider the acid tank farm
19 covered by the requirements of the OSHA PSM standard.

20 If Motiva had followed the good process safety
21 management practices for the tank farm processes and
22 equipment, practices such as mechanical integrity and
23 management of change, the incident would likely not
24 have happened. Now, mechanical integrity a system
25 that covers the design and maintenance of equipment

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1 and it insures that equipment meets codes and
2 standards and that their equipment inspected and
3 repaired to insure safe operation and management of
4 change, as the name implies, a system that insures
5 that changes to equipment and to processes are made
6 correctly and safely.

7 To complete our regulatory findings, I'd
8 like to acknowledge the recently enacted Jeffrey Davis
9 Above-Ground Storage Tank Act. And the State of
10 Delaware found that sulfuric acid tanks also fell
11 outside of the coverage of the state safety process
12 management regulation, so as a result of this incident
13 and others, the state enacted the Jeffrey Davis Act
14 and it's designed to control the installation,
15 operation, and maintenance repair of above-ground
16 storage tanks. The purpose of the legislation to
17 provide for the safe containment of petroleum and
18 other regulated substances in tanks that exceed 12,500
19 gallons in capacity.

20 DNREC, the Department of Natural Resources
21 and Environmental Control in Delaware now developing
22 the regulations under the Act to address these issues;
23 maintenance, inspection, upgrade, closure of the
24 vessels, along with regulations for the cleanup of
25 spills and releases that might occur.

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1 Our third finding, Tank 393 and other acid
2 tanks had a history of leaks. There was an internal
3 inspection of the tank done in 1994. No internal
4 inspections were done after that as we've heard
5 brought up already by our speakers. But in 1998 there
6 was a shell leak, there were two leaks in 1999, two
7 leaks in 2000 and another leak in May of 2001. All
8 these leaks were repaired except for the leak in May
9 of 2001. This a photo of the unrepaired leak. Now,
10 we believe this leak was about three inches in width
11 initially. After the incident, it expanded to about
12 21 inches we believe from the force of the blast of
13 the tank coming off its foundation.

14 This slide shows the series of carbon
15 patches that were installed on the tank over the years
16 to repair these leaks. There's one you can barely see
17 down here, a circular one here, another one here, and
18 a rectangular one here. Here's that three-inch leak
19 and finally one you can barely see the corner of on
20 the top. Now, these leaks were all in a vertical row
21 on the tank and they were all in the western,
22 southwestern, western side of that tank. It's an area
23 where there was a level gauge and air bubbler that
24 would contribute a little bit to that corrosion and
25 also it's an area that would have received the most

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1 sun exposure and sulfuric acid more corrosive as it's
2 -- as it gets warmer.

3 I'd like to show you two other holes.
4 This was a hole that was under insulation. It was
5 initially about two and a half inches in diameter but
6 it was discovered after the incident. It was about 14
7 inches long. That increase in size was due to
8 corrosion. Again it was under the insulation at the
9 time of the incident but it's representative of the
10 kind of problems that the tank was having in that
11 vapor space and the holes that were up there.

12 And finally, a hole that we'll be talking
13 about more as I guess the presentation on the inerting
14 system, there had been a nozzle on this hole and it
15 had corroded off. It was about a one and a half inch
16 hole now, and the hose that supplied the carbon
17 dioxide inerting gas to the tank was dropped into this
18 hole through about a three-quarter inch hose, so
19 there's a little play around all the sides of that
20 hose. There were a number of other holes. There was a
21 hole that was under the roof to shell seam, about a
22 five-inch diameter hole and there was also a number of
23 other spots. There was a gauge hatch that operators
24 would drop down a gauge tool to see what the level in
25 the tank was that didn't close tightly. Again, those

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1 are other opportunities for air to enter the tank for
2 flammable vapors to leak out.

3 Now, beyond the Project 393 other tanks in
4 the acid tank farm had leaks also. 394, 391 and 395
5 were sister tanks in the acid tank farm here with the
6 393. 395 was replaced in 1995 because of corrosion.
7 The two other tanks listed there, 320 and 398, were
8 tanks that were also in sulfuric acid service that
9 were over in the alkylation unit of the refinery and
10 also 320 was replaced, again, as recently as five
11 years before the incident.

12 Our next key finding, Motiva's tank
13 inspectors recommended internal inspection of Tank 393
14 as soon as possible, in 1999, 2000 and 2001. Now the
15 tank inspectors were certified under the American
16 Petroleum Institute, their standards. 653 their
17 standard for inspection of storage tanks. We'll be
18 talking about that standard in a little more detail.
19 Now, Motiva did not act on these recommendations to
20 have the tank inspected. It's likely that this
21 inspection would have identified the serious localized
22 corrosion occurring inside the tank that resulted in
23 the holes. They had deferred that inspection a number
24 of times. Tank 393 was emptied three times between
25 April of 2000 and April 2001. Each of these occasions

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1 was an opportunity to prepare the tank and conduct an
2 internal inspection. Now it takes some time to
3 prepare a tank for internal inspection. It's to be
4 emptied out and cleaned out, parts have to be
5 sandblasted so people can go inside of this storage
6 tank.

7 It requires some juggling of inventories
8 and acid movements, but there was no evidence that
9 Motiva looked at alternatives for managing its acid
10 inventories in order to conduct this inspection. Out
11 six key finding, that design and implementation of the
12 sulfuric acid tank inspection program was inadequate.

13 Now, in 1994 in the last internal inspection,
14 inspectors had recommended based on their measurements
15 and the thickness readings that the next internal
16 inspection be conducted in 1996 and it was never
17 conducted.

18 There was another opportunity that Motiva
19 had to determine where the leaks were and this was to
20 do a full external inspection. Now, an external
21 inspection could be done while the tank in operation
22 and it requires the removal of insulation to expose
23 areas for observation and to do thickness readings but
24 again, it's done from the outside and it's -- you
25 know, the tank still running. So again, it's an

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1 opportunity for Motiva to really could have likely
2 identified the holes in the tank.

3 Now, for concentrated sulfuric acid, the
4 National Association of Corrosion Engineers or NACE
5 International, they specify an inspection period of
6 five years for an internal inspection and two years
7 for an external inspection. Instead, Motiva was using
8 the American Petroleum Institute's guidelines of
9 scheduling internal inspections for tanks every 10
10 years and externals every five years and again, they
11 weren't conducting those inspections on Tank 393.
12 They were hoping to adhere to this standard but again,
13 393 never got these inspections.

14 Now, API's tank standards are not written
15 for sulfuric acid tanks, they're written for
16 hydrocarbon storage in general but they're used by
17 industry for tanks, for most tanks. Continuing on
18 with some more information on this finding, the tank
19 standard 653, the API standard, it requires that flaws
20 and deterioration be evaluated and a determination
21 made of fitness for the intended service. Tank
22 inspection intervals need to be modified based on a
23 service history and that can be evidence of corrosion
24 in the tank in question or evidence of corrosion in
25 related tanks, again, you saw the corrosion in the

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1 other tanks in the acid tank farm.

2 Obviously, this was evidence of
3 deterioration in the tanks. Motiva's tank inspectors
4 attempted to meet this requirement of the tank
5 inspection standard and in their repeated calls for an
6 internal inspection. It's clear that the holes in the
7 vapor space of a tank containing a flammable
8 atmosphere render it unsuitable for that service.

9 Our next finding; management stated in the
10 interviews with the Chemical Safety Board that they
11 did not consider Tank 393 to constitute an eminent
12 danger to safety or the environment. They stated in
13 interview, their belief that patching the leaks
14 allowed the tank to operate safely even though
15 inspectors noted that repairs were temporary and that
16 an internal inspection was required to insure vessel
17 integrity. They also believed that lowering the
18 liquid level in the tank below the leak point and
19 manage the hazards, they were focused, the plant was,
20 in the hazards of sulfuric acid and stopping leaking
21 of acid out of the tank and they didn't take into
22 consideration the flammable vapors in the tank.

23 Now, Tank 393, our next finding, was
24 converted from fresh to spent acid service with
25 minimal engineering support. Now, fresh acid 99

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1 percent acid with one percent water. It's not
2 flammable. The spent acid, however, contains the
3 several percent of various hydrocarbons and a critical
4 issue here then that those hydrocarbons, some of them
5 are flammable. Motiva recognized that they had to
6 protect against this potential flammability.

7 They installed an inerting system, they
8 installed a combination pressure and vacuum vent to
9 maintain tank pressure and they installed a flame
10 arrester on this -- under this vent in case there was
11 a problem. However, Motiva did no engineering and
12 they did not issue an engineering request to their
13 contractors to -- for engineering support in the work
14 order for the conversion of the tank from fresh to
15 spent acid. The sizing of the inerting flow
16 requirements for normal and upset conditions was
17 inadequate and the carbon dioxide flow was
18 insufficient to maintain the non-flammable atmosphere
19 in the tank. And the tank lacked a weak seam roof or
20 other emergency venting provisions which likely would
21 have prevented it from separating at the floor and
22 catastrophically releasing its contents.

23 Our finding number 10 that Motiva did not
24 use it's management of change practices to review the
25 conversion of Tank 393 from fresh to spent acid

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1 service. Management of change again, one of the good
2 process safety management practices that was not
3 followed by Motiva and as a result, the conversion of
4 the tank from fresh to spent did not benefit by these
5 good practices. First, there was no review and sign-
6 off for the proposed changes by subject area experts,
7 corrosion engineers or tank design experts and no
8 review by higher level management. Now, a management
9 of change or MOC system requires reviews by a diverse
10 group of technical and management personnel to insure
11 the changes are done safely.

12 Secondly, as part of a management of
13 change system, there no process hazard review
14 conducted to assess the safety of the proposed change.

15 A process hazards review or process hazards analysis
16 another process safety tool in which a multi-
17 functional team reviews the hazards of a proposed
18 change.

19 And finally, there was no pre-start-up
20 safety review. A pre-start-up safety review another
21 tool. Again, it's used after the change constructed.

22 A team goes out to review the physical aspects of the
23 change and if there's any changes to procedures or
24 operating instructions, to insure the project method
25 design and intent. And here, it's possible that the

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1 use of a hose to supply inerting gas to Tank 393 would
2 likely have been observed and corrected.

3 Our next finding, the vapor space
4 contained flammable vapors and this was a given from
5 the nature of spent sulfuric acid. Remember the fire
6 triangle we looked at, this one of the requirements
7 to have that explosion in the vapor space. On the
8 second side of the triangle, the vapor space was not
9 adequately inerted. The carbon dioxide flow was
10 insufficient to keep the internal atmosphere below the
11 flammable range. I'd like to take you through a
12 little diagram of the inerting system.

13 Now, initially the refinery inerting Tank
14 396 and they set it up with a carbon dioxide inlet
15 going through a pressure reducing valve into the tank
16 was all right, but when they decided to inert 393, as
17 we saw earlier, they took this three-quarter inch hose
18 and ran it from this system for 396, piggybacked it
19 over to 393. And because of the length of the hose,
20 about a 50-foot standard length of hose and the small
21 diameter, it was not able to pass enough carbon
22 dioxide to put enough into the tank to keep the
23 atmosphere below the flammable point. And again, we
24 saw that the tank, the hose was dropped through a
25 hole. There was room around that hole for air to get

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1 in and out. There was other places for air to get in
2 and out. 393 was connected to these two tanks, 394
3 and 395. They had a common overflow line, so if you
4 filled the tank up too high, it would overflow down to
5 the ground but that was open to the atmosphere and
6 these two tanks were also open to the atmosphere. So
7 again, maintaining the carbon dioxide inside the Tank
8 393 was defeated.

9 You saw the holes, evidence of the holes
10 again, places where carbon dioxide could leak out, air
11 could get in. And I think a final point was that
12 there was on instrumentation -- there was no way for
13 the operators to really assess if the system, the
14 inerting system was working properly whether there was
15 enough carbon dioxide in the tank to keep it below the
16 flammable range.

17 Now, our next finding that Tank 393
18 exhibited severe localized corrosion beyond that
19 considered normal in sulfuric acid service. Sulfuric
20 acid corrosive. And when you design a tank for
21 sulfuric acid, you typically design it with what they
22 call corrosion allowance, some extra thickness in the
23 metal so as that tank goes through the normal
24 corrosion cycle, that one way we still have got all
25 the life and integrity of the tank. But what we saw

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1 in Tank 393 was severe localized corrosion and this
2 was due to the water that was entering the tank
3 through the various holes. Water dilutes the acid and
4 this would typically be at the liquid level, where the
5 acid, you know, at the top of the liquid level of the
6 tank, and water dilutes the acid. Diluted acid much
7 more corrosive than the strong sulfuric acid, either
8 fresh or spent acid.

9 So at that liquid level where the water
10 would gather either from rain water or from moisture
11 in the atmosphere coming in through the holes, that's
12 where we were seeing the extreme localized corrosion.

13 Corrosion leads to holes, leads to more water getting
14 into the tank, more corrosion.

15 The Unsafe Condition Report, our next
16 finding, detailing holes in Tank 393 and 396 was
17 submitted to management on June 27th, 2001. That was
18 about 20 days before the incident. Motive
19 investigated but it did not take any actions to
20 correct the deficiencies or implement temporary
21 safeguards such as banning any hot work in the
22 vicinity of the holes. Now, the operator had
23 submitted this report after he had gone up on the cat
24 walk to try to issue a hot work permit for the work
25 that was being done and he obtained readings of

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1 flammable vapors on a hand-held monitor.

2 Our final key finding that Motiva allowed
3 hot work to be performed in the vicinity of a tank
4 with holes in its roof and shell. Work should not
5 have been authorized. Motiva was aware of the
6 condition of the tanks and the fact that they
7 contained material that contained flammable vapors.
8 Workers should not have been allowed to burn or weld
9 near the tops of the tanks. However, once the work
10 was authorized, no precautions were taken for
11 retesting or continuous monitoring of the area around
12 the work. Motiva did not take other steps that could
13 have been used to minimize the risks.

14 Contract workers were not aware of the
15 hazards they faced and there was no communication
16 between Motiva and the contractors as work methods and
17 work locations were changed. We'll be going on to the
18 root and contributing causes, but first, let me ask
19 you if at this point you have questions.

20 CHAIRPERSON MERRITT: Yes, Dr. Taylor.

21 DR. TAYLOR: I want to go back to the
22 issuance of the hot work permit and get some
23 clarification.

24 MR. HELLER: Sure.

25 DR. TAYLOR: And I have two questions

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1 related to that. You mentioned that 20 days prior to
2 the incident, a hot work permit was denied and an
3 Unsafe Condition Report was submitted. On the day of
4 the incident and prior to the work being performed had
5 management monitored the area?

6 MR. HELLER: Right, to issue a hot work
7 permit, you -- the field operator went up on the cat
8 walk and took readings for sulfur dioxide and for
9 flammables and they were negative, there were not
10 readings so they were able to issue the hot work
11 permit at that time.

12 DR. TAYLOR: Was that above both tanks or
13 above Tank 396 or how do they do that?

14 MR. HELLER: Typically, the operators
15 would go up there and they would take readings around
16 the hole catwalk area, not just the one --

17 DR. TAYLOR: And on the day of the
18 incident they did monitor.

19 MR. HELLER: Yes.

20 DR. TAYLOR: And I guess my second
21 question then related to that what the common
22 practice in industry concerning retesting areas where
23 hot work performed?

24 MR. HELLER: Industry going more and more
25 to -- first of all, one option continuous monitoring,

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1 where you have a monitor up there that's always in
2 place. Monitors are new technology getting to be much
3 less expensive, maybe 500 bucks for a continuous
4 monitor and that can be up there the whole time and
5 it's a continuous monitor which gives off like an
6 alarm if there's any readings detected.

7 Another method to do some retesting and
8 retesting done if the operator, if the workers leave
9 the area and come back, conditions could change while
10 they're away from the area eating lunch or whatever.
11 So retesting another option.

12 DR. TAYLOR: And the workers did leave and
13 come back for lunch and then they came back.

14 MR. HELLER: The workers went for lunch
15 and they came back, yes.

16 DR. TAYLOR: And there was no monitoring.

17 DR. POJE: Dave, I'm interested in a
18 couple of aspects. One the bigger picture issues and
19 then we'll get into something more narrow. Now, the
20 Board, throughout our history of investigations has
21 focused in on best practices as defined by the
22 industry itself, frequently going to the Center for
23 Chemical Process Safety, asking questions about what
24 -- how does one define working around very hazardous
25 materials and define best practice. So that has led

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1 from early development in the late '80's to the
2 requirement that it be enforced by federal
3 regulations, the OSHA Process Safety Management Regs.

4 Can't you give me some insights as to what
5 kinds of approaches towards process safety management
6 were deficient in this area? I think you've
7 identified a few but I want you to synopsise where
8 you've been.

9 MR. HELLER: Well, again, hot work one of
10 the elements of process safety management. One of the
11 first things that need to be done with a hot work
12 permit to assess the area, determine what the risks
13 are and what the hazards are. And in other standards,
14 such as the OSHA standards for burning and welding, if
15 there are hazards, you have to take steps to control
16 the hazards. In this situation, we don't think the
17 hazards could have been controlled because of the
18 presence of all these holes on the tank.

19 Options are to take the work down and do
20 the welding away from the area, wasn't possible for a
21 cat walk which was obviously up there in place.

22 DR. POJE: But I also worry about the
23 other big issue which mechanical integrity and that
24 certainly a central issue in this whole incident,
25 getting towards repairing work that has been corroded

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1 because of releases of sulfuric acid should be part of
2 a larger program that doesn't wait for holes to appear
3 before you begin to take action.

4 MR. HELLER: Right. Mechanical integrity
5 programs should be predictive and should be proactive
6 in trying to determine what problems are on a tank.
7 Again, that's where you do your inspections, you take
8 your tank out of service, you get the full picture.
9 Programs and companies that have a mechanical
10 integrity program, all their tanks are listed.
11 There's voluminous data bases of all the tanks and all
12 the inspection reports and a means to follow up on
13 issues that are identified and take action where
14 necessary and also to cross-check between various
15 areas of similarity from different parts of a facility
16 to see if there's any common issues that need to be
17 addressed.

18 DR. POJE: So part of the Board's issues
19 here, really, are framing what best practice from a
20 private sector vantage point but then how does that
21 best practice get framed in federal responsibilities
22 through the Occupational Safety and Health
23 Administration in this case and you're telling us that
24 this an incident in which the company and OSHA did
25 not consider the application of process safety

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1 management regulations to --

2 MR. HELLER: Right, these tanks were not
3 considered covered. They did do a number of the
4 elements of process safety, again, there was some
5 attempt at doing some management of change when
6 earlier tanks had been converted. There was
7 procedures and so forth, all things required by
8 process safety management, but the rigorous control of
9 these tanks was not there.

10 DR. POJE: And then if you could clarify
11 one step further, while federal regulations can speak
12 to the big picture or what needs to be done in a
13 certain set of elements, sometimes the practice of
14 implementing the elements, mechanical integrity, might
15 fall then to a private sector standard program that
16 defines how to do things and why. Give us a little
17 background on the API and the NACE activities here
18 that speak to this issue of the tank's integrity and
19 role and responsibilities for inspection on that.

20 MR. HELLER: The API standard used by
21 vast parts of the industry to inspect their tanks.
22 It's very comprehensive on how to inspect. There's
23 checklists in the standard, what to look for and how
24 to make repairs and it's quite comprehensive, but the
25 key thing that they wanted to determine the frequency

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1 of the inspections. Again, API says, "Here's some
2 generic frequencies but modify these based on your
3 history, based on what you find through your
4 mechanical integrity program". This an area where we
5 didn't see that work out at Motiva.

6 DR. POJE: But in this case, there are two
7 different standard organizations and they're not
8 consistent with their recommendations.

9 MR. HELLER: NACE was looking specifically
10 at concentrated sulfuric acid. Again, NACE a
11 technical organization and metallurgists and corrosion
12 engineers. And their work and their frequencies, the
13 five years for the internal inspections, two years for
14 externals, followed by a lot of companies that do
15 handle spent and fresh sulfuric acid.

16 DR. POJE: So in this case, NACE has very
17 specific focus on sulfuric acid tanks and the API 653
18 focused more generally on --

19 MR. HELLER: It's focused more generally
20 with the caveat that you have to, you know, take a
21 look at your specific situation and modify those
22 inspections based on what you're actually seeing.

23 DR. POJE: And does the API standard focus
24 just on tanks that have flammable materials in it or
25 does it also encompass things like spent sulfuric acid

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1 tanks where there a layer of a flammable material but
2 it's not the primary constituent of the --

3 MR. HELLER: I think they're generally
4 written for hydrocarbon tanks but really the API
5 standard for construction of atmospheric storage
6 tanks in general and most folks apply those inspection
7 guidelines to all their tanks, not just the
8 hydrocarbon tanks.

9 DR. POJE: We have a flammable incident
10 here so --

11 MR. HELLER: Yeah.

12 CHAIRPERSON MERRITT: Andrea?

13 DR. TAYLOR: I just have one other
14 question. Can you explain why the OSHA PSM standard
15 does not cover tanks such as the tank involved in the
16 incident?

17 MR. HELLER: We believe that OSHA's
18 initial intent in the Process Safety Management
19 Standard was to cover these tanks. They're inter-
20 connected to a process that covered by the standard,
21 but again, through the years, through the Meer
22 decision and through the Akzo-Noble decision another
23 issue, this area has been muddied and it's an area we
24 think needs to be refocused and brought under control.

25 CHAIRPERSON MERRITT: Are there other

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1 comments, questions?

2 MR. BRESLAND: Yeah, I've got a couple of
3 questions for you, David. Talking about Tank 393, as
4 I understand it, it contained spent sulfuric acid with
5 approximately one percent insoluble organics which we
6 would assume would be floating on the top of the tank,
7 and that would give you perhaps if the tank had about
8 -- let's say the level of the tank was approximately
9 30 feet, you'd have three or four inches of organic
10 layer floating on top and this may be a little bit
11 outside the scope of your investigation, but if there
12 are holes in the tank and you have this organic
13 floating layer, would that give cause to an
14 environmental compliance issue of release of VOCs?

15 MR. HELLER: We didn't look into the
16 amount of emissions that could possibly be coming out
17 of the tank. Again, the amount of organics in the
18 tank in that layer was really never determined. Just,
19 you know, the very nature of sulfuric acid, it doesn't
20 take much to have a flammable atmosphere in that tank.

21 MR. BRESLAND: Still talking about the
22 tank and the holes in the tank, that -- what's
23 general industry practice when it comes to operating
24 storage tanks which have identified holes in them
25 caused by corrosion?

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1 MR. HELLER: In my experience, if you have
2 a tank like that, you would -- you'd probably do an
3 assessment and determine what needs to be done and I
4 think in this situation, the determination would be to
5 take to it out of service and get those holes
6 repaired. Now, at a minimum to make sure that no work
7 was being done in the vicinity of those tanks during
8 the time it takes to get that tank down and ready.

9 MR. BRESLAND: Okay, thank you.

10 DR. ROSENTHAL: I have just one question,
11 Dave. Was there a system in place, you know a formal
12 system, that identified deviations from standards
13 safety reports, identified them, assigned someone to
14 follow them to completion, and noted where the
15 required actions or recommended actions were actually
16 completed?

17 MR. HELLER: Yeah, there was a
18 recommendation tracking system that covered the
19 recommendations that came out of various tank
20 inspection reports and those recommendations went to
21 the unit management. It also went sometimes to higher
22 management and what we found was that there was no one
23 in really control with oversight to take the piece
24 that here we have a tank with holes in it and here we
25 have a production issue of inventory. There's no one

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1 kind of looking at all those issues and making a
2 decision, "Okay, we can run, no, we have to take it
3 down".

4 DR. ROSENTHAL: I mean, yeah, there was
5 not a closure date that was -- the recommended action
6 was either completed or formally reviewed and signed
7 off on.

8 MR. HELLER: I can't recall if the
9 recommendations included completion dates, recommended
10 completion dates.

11 DR. ROSENTHAL: All right, thank you.

12 DR. POJE: I have just one other issue
13 that I wanted to raise with you, Dave. I was very
14 happy to hear Mr. DiPasquale talk about the state's
15 efforts, particularly in regards to the new Above-
16 Ground Storage Tank Act that works, obviously, for the
17 State of Delaware but it's not likely to cover other
18 facilities in other states. And Motiva's domain
19 includes four other major -- or three other major
20 facilities and there are many others who use spent
21 sulfuric acid tanks. I also was struck by the fact
22 that EPA in May of 2000, conducted a very explicit
23 public sector review of tank integrity but their focus
24 was narrowed down to the oil containing tanks and they
25 made some urgent recommendations that needed to be

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1 implemented by the Delaware City Refinery to improve
2 the mechanical integrity of those tanks to assure that
3 there was no environmental problem.

4 Unfortunately that blinded -- they were
5 blinded perhaps by policy or regulatory reach into
6 looking at spent sulfuric acid tank. that your
7 analysis, that the EPA program restricted to the --
8 in the spill prevention control counter-measures
9 program just to the oil?

10 MR. HELLER: Right. EPA went in and under
11 the spill prevention counter-measures control program
12 and it's really an oil pollution prevention program
13 looking for spills and leaks from oil tanks. Again,
14 they did find significant problems. Three tanks they
15 asked to be taken out of service immediately. This
16 in the year 2000, tanks that had never had an internal
17 inspection since they had been built in the mid-
18 1950's.

19 DR. POJE: I think this will bear some
20 vigilance on the part of this Board as we think about
21 the coverage of above-ground storage tanks and roles
22 of federal agencies.

23 CHAIRPERSON MERRITT: Are there any other
24 questions? Then I think at this time I'd like to
25 thank you, Dave, and -- oh, we're going to do root

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1 causes before we go to a break. That would be fine,
2 thank you.

3 MR. HELLER: We identified three root
4 causes and two contributing causes for the incident.
5 Our first root cause that Motiva did not have an
6 adequate mechanical integrity system to prevent safety
7 and environmental hazards or address safety and
8 environmental hazards in the deterioration of sulfuric
9 acid storage tanks. Again, a repeated recommendation
10 of the tank inspectors that Tank 393 be taken out of
11 service as soon as possible for an internal inspection
12 were unheeded.

13 A leak in the shell of Tank 393 in May of
14 2001 was not repaired. Instead the tank level was
15 lowered below the leak point and the tank was allowed
16 to remain in service. Management failed to recognize
17 the eminent hazard posed by the holes in Tank 393 and
18 did not promptly initiate repairs or take the tank out
19 of service.

20 Our second root cause, Motiva's
21 engineering management and management of change
22 systems inadequately addressed the conversion of tanks
23 from fresh to spent sulfuric acid. No engineering
24 was done to size the inerting system for Tank 393 and
25 as a result, the inerting flow was insufficient to

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1 prevent a flammable atmosphere from developing inside
2 the tank and not using the management of change
3 process meant that reviews by subject area experts or
4 management that might have identified the flaws in the
5 design were not uncovered, did not occur.

6 Our third root cause finding that the
7 Motiva hot work program was inadequate. Again, hot
8 work should not have been authorized in the vicinity
9 of Tank 393, but then once hot work was authorized,
10 Motiva did not take steps to minimize the hazards such
11 as by requiring continuous flammable monitoring.

12 We also identified two contributing
13 causes, the first one being that Motiva Refinery
14 System for investigating unsafe condition reports,
15 informing workers about such reports and tracking the
16 satisfactory resolution of issues was inadequate.
17 Three weeks between submittal of the unsafe condition
18 report and the incident, Motiva investigated, did some
19 communications but did not correct the deficiencies
20 and did not implement any temporary safeguards.

21 And our second contributing cause that
22 Motiva Enterprises' corporate management oversight
23 system failed to detect and hold Motiva Refinery
24 management accountable for deficiencies in its
25 mechanical integrity, engineering management and

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1 management of change systems. Corporate oversight and
2 auditing systems can provide a fresh set of eyes that
3 identify systemic problems that might be overlooked
4 by local management. In this case auditing did not
5 identify the problems. In addition, corporate
6 management was informed of decisions to defer the
7 inspection of some storage tanks which included Tank
8 393.

9 They did not question the deferrals or
10 inquire into the basis of these deferrals. And those
11 are our causes. Any questions at this point?

12 CHAIRPERSON MERRITT: Yes, Andrea.

13 DR. TAYLOR: Just one quickly, it goes
14 back to the Unsafe Condition Report, you said that
15 management did investigate after the Unsafe Condition
16 Report was filed. Was there a report of what to do or
17 the next steps they would take or what happened?

18 MR. HELLER: A member of the plant safety
19 department, an inspector went up and looked at the
20 situation and wrote on the back of the Unsafe
21 Condition Report about the problem with the fumes up
22 there and the hazards, and this information was passed
23 to the area management. And area management was in
24 the process of putting together a team to address a
25 wider range of problems in the acid unit.

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1 They added this to that list of problems.
2 The report gets communicated to area management
3 safety and health department, again, that's how this
4 inspector got involved, and the union management
5 safety committee.

6 DR. TAYLOR: So they were in the process
7 but had not necessarily -- hadn't taken any action on
8 what improvements could be made. They were still
9 investigating a total.

10 MR. HELLER: Right.

11 DR. TAYLOR: Okay.

12 DR. ROSENTHAL: I have one quick just
13 matter of fact. You say that the corporate system
14 failed to detect these systems. Did they have a
15 system in place, do you know? Were there corporate
16 audits being performed?

17 MR. HELLER: We did obtain some of the
18 corporate auditing results and they were -- there was
19 some work done in the plant for process safety
20 management audits. Again, they didn't look at this
21 area specifically.

22 DR. ROSENTHAL: So the system was in
23 place, it just was not functioning to what we think
24 were reasonable standards. Thank you.

25 CHAIRPERSON MERRITT: Any other questions?

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1 No? Then thank you, David. And at this time, we'd
2 like to take a 15-minute break and that would bring us
3 back here about 10 minutes after the hour. Thank
4 you.

5 (A brief recess was taken.)

6 CHAIRPERSON MERRITT: I'd like to announce
7 at this time, also that if there are any others who
8 would like to make a comment, you still may register
9 out at the registration desk. We also have provided
10 power point copies of the presentation and also copies
11 of the executive summary. If anyone would like to
12 have one, they are available. And we thank you for
13 that. And with that, Charles, I'll turn it back over
14 to you and --

15 MR. JEFFRESS: Thank you, Madam Chair.
16 Now, for the final portion of the staff report are the
17 recommendations coming out of our findings and the
18 root causes and contributing causes. The staff has
19 prepared recommendations for the Board to consider, to
20 people involved and others with impact on this
21 incident. Don Holmstrom, our lead recommendation
22 specialist, here to make the presentation on the
23 recommendations.

24 MR. HOLMSTROM: Madam Chairman, Board
25 member, Mr. Jeffress, Mr. Warner, I will present the

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1 staff recommendations. Safety recommendations are the
2 primary tool used by the Board to motivate
3 implementation of safety improvements and prevent
4 future incidents. We use our unique independent
5 accident investigation perspective to identify trends
6 or issues that might otherwise be overlooked. CSB
7 recommendations may be directed to corporations, trade
8 associations, government entities, safety
9 organizations, labor unions and others.

10 Board recommendations begin the process
11 that eventually saves lives and protects the
12 environment. The CSB recommendations program not only
13 participates in the development of Board
14 recommendations but also just as importantly,
15 advocates for tracks and helps insure that successful
16 adoption of recommendations. Board recommendations
17 are issued and closed only by a vote of the Board.

18 The first recommendation today a
19 recommendation to the Occupational Safety and Health
20 Administration, OSHA. Insure coverage under the
21 Process Safety Management Standard, 1910.119, of
22 atmospheric storage tanks that could be involved in a
23 potential catastrophic release as a result of being
24 inter-connected to a covered process with 10,000
25 pounds of flammable material.

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1 I would note to the Board that under
2 current OSHA definition, a process means any activity
3 involving highly hazardous chemicals including the
4 use, storage, manufacturing, handling for the onsite
5 movement of such chemicals or combination of these
6 activities. For purposes of the OSHA definition, any
7 group of vessels which are interconnected and separate
8 vessels which are located such that a highly hazardous
9 chemical could be involved in a potential release
10 shall be considered a single process.

11 The PSM standard applies to a process
12 which involves flammable liquid or gas on site in one
13 location in a quantity of 10,000 pounds or more, with
14 the exception of flammable liquids stored in
15 atmospheric tanks or transferred which are kept below
16 their normal boiling point without the benefit of
17 chilling or refrigeration. The question arises about
18 inter-connected tanks containing flammables.

19 OSHA, early on, took the position that
20 such tanks were covered by the process safety
21 management standard. Subsequent decisions, as
22 indicated earlier in the presentation, such as the
23 Meer decision and other interpretations took the
24 position that such tanks were not covered. This
25 recommendation seeks to insure coverage by OSHA of

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1 such tanks.

2 The next recommendation to the Delaware
3 Department of Natural Resources and Environmental
4 Control or DNREC. Insure that regulations developed
5 for the recently enacted Jeffrey Davis Above-Ground
6 Storage Tank Act require that facility management take
7 prompt action in response to evidence of tank
8 corrosion that presents hazards to personnel or the
9 environment. The Jeffrey Davis Act requires DNREC to
10 among other things, develop tank performance
11 standards, corrective action regulations to prevent
12 releases from above-ground storage tanks.

13 The next recommendation to Motiva, the
14 Delaware City Refinery. Implement a system to insure
15 accountability for mechanical integrity decision
16 making that includes review of inspection reports by
17 subject area experts, such as metallurgists, or
18 equipment design engineers to insure adequate analysis
19 of failure trends and suitability for intended
20 service.

21 Establish a planning system to insure
22 timely repair of equipment. The Center for Chemical
23 Process Safety Publication Plant Guidelines for
24 Technical Management of Chemical Process Safety
25 Chapter 3, accountability objectives and goals,

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1 presents a model for such a system.

2 The next recommendation to Motiva Delaware
3 City Refinery, review the design of existing tankage
4 that contains or has the potential to contain
5 flammables to insure that at a minimum, inerting
6 systems are installed where appropriate and are
7 adequately sized and constructed. Emergency venting
8 provided.

9 The next recommendation to Motiva Delaware
10 City Refinery, insure that management of change
11 reviews are conducted for changes to tank equipment
12 and operating conditions such as tank service and
13 contents, tank peripherals, such as inerting and
14 venting systems.

15 The next recommendation to Delaware City
16 Refinery, Motiva, revise the refinery hot work program
17 to address the circumstances that require the use of
18 continuous or periodic monitoring for flammables.
19 The final recommendation to Motiva Delaware City
20 Refinery, upgrade the refinery's Unsafe Condition
21 Report system to include the following; designate a
22 manager with decision making authority to resolve
23 issues, establishment of a mechanism to elevate
24 attention to higher levels of management if issues are
25 not resolved in a timely manner, identification of a

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1 means to insure communication of hazards to all
2 potentially effected personnel, work with PACE, which
3 the Paper Allied Industrial, Chemical and Energy
4 Workers Local 2-898 to design and implement the
5 improved system.

6 The next recommendation to Motiva
7 Enterprises, LLC. Conduct periodic audits of storage
8 tank mechanical integrity and design, Unsafe Condition
9 Reports, hot work, management of change and
10 accountability for these systems at Motiva Oil
11 Refineries. Share the findings with the workforce.

12 Another recommendation , communicate the findings and
13 recommendations of this report to the workforce and
14 contractors at all Motiva Refineries.

15 The next recommendation to the American
16 Petroleum Institute. Work with NACE which the
17 National Association of Corrosion Engineers,
18 international to develop API guidelines to inspect
19 storage tanks containing fresh or spent sulfuric acid
20 at frequencies at least as often as those recommended
21 by NACE. The American Petroleum Institute, API an
22 oil industry trade association. It membership
23 consists of approximately 400 companies and covers all
24 aspects of oil and natural gas industry including
25 exploration, production, through to refining and

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1 marketing. API now maintains some 500 industry
2 specific standards covering all segments of the oil
3 and gas industry.

4 The next recommendation to the American
5 Petroleum Institute revise API tank inspection
6 standards to emphasize the flammable liquid storage
7 tanks with roof or wall holes or thinning beyond
8 minimum acceptable thickness are an eminent hazard and
9 require immediate repair or removal from service.

10 The next recommendation to the American
11 Petroleum Institute, insure that API recommended
12 practices address the inerting of flammable storage
13 tanks such as spent sulfuric tanks, include
14 circumstances when inerting recommended, design of
15 inerting systems, including proper sizing, appropriate
16 inerting medium, instrumentation, including alarms.

17 The next recommendation to NACE
18 International. NACE stands for the National
19 Association of Corrosion Engineers. Work with the
20 American Petroleum Institute to develop API guidelines
21 to insure that storage tanks containing fresh or
22 spent sulfuric acid tanks are inspected at frequencies
23 at least as often as those recommended by NACE. NACE
24 was established in 1943 and develops corrosion
25 prevention and control standards. NACE International

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1 has become the largest organization in the world
2 committed to the study of corrosion. NACE has sulfuric
3 acid and corrosion expertise with storage tanks.

4 The next recommendation to PACE, the
5 Paper Allied Industrial Chemical and Energy Workers
6 International Union Local 2-898. Work with Motiva
7 management on the design and implementation of an
8 improved Unsafe Condition Report program. The final
9 recommendation concerns the communication of findings
10 to the following organizations; the Building and
11 Construction Trades Department of the AFL-CIO,
12 American Petroleum Institute, NACE International,
13 National Petrochemical and Refiners Association, Paper
14 Allied Industrial Chemical and Energy Workers
15 International Union. The recommendation communicate
16 the findings and recommendations of this report to
17 your memberships.

18 That concludes the presentation on the
19 staff recommendations. Are there any questions?

20 DR. ROSENTHAL: I look at the
21 recommendations and find them generally in order but I
22 have one question and that your recommendation to
23 Motiva. You don't treat with the closure on those
24 recommendations. that my understanding, when you say
25 in light of the findings, that's Motiva Enterprises

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1 LLC.

2 MR. HOLMSTROM: Yeah, we don't currently
3 have any language concerning the insuring, tracking
4 and closure of the recommendation.

5 DR. ROSENTHAL: Thank you.

6 CHAIRPERSON MERRITT: Are there any other
7 questions?

8 MR. BRESLAND: Yeah, I have one. Looking
9 at the recommendations that were made to the American
10 Petroleum Institute, the second recommendation to
11 revise API time inspection standards to emphasize that
12 flammable liquid storage tanks with roof or wall holes
13 or thinning beyond minimum acceptable thickness are an
14 eminent hazard and require immediate repair or
15 removal. The implication on this to me that it only
16 applies to tanks that hold organic liquids or refinery
17 products. I would think it would be more clear in the
18 -- especially in this particular case to include a
19 statement that would mean that it would also apply to
20 tanks like the spent sulfuric tank which has a
21 floating liquid, a floating organic liquid on top of
22 it and organic vapors in the vapor space of the tank.

23 MR. HOLMSTROM: That sounds like a very
24 reasonable suggestion.

25 CHAIRPERSON MERRITT: How would you reword

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1 that and we would consider that an editorial change in
2 the recommendation. How would you reword that?

3 MR. HOLMSTROM: I think instead of
4 flammable liquid, we would include language that
5 addresses the -- or coverage of tanks that have a
6 flammable vapor space.

7 DR. ROSENTHAL: I believe that's a
8 substantive change more than an editorial change.

9 CHAIRPERSON MERRITT: Okay, all right, so
10 then we can bring that up when we call for a vote.

11 DR. ROSENTHAL: Yes.

12 DR. POJE: And I'm presuming in response
13 to Dr. Rosenthal's comment that you're not and staff
14 wouldn't be in disagreement about taking action beyond
15 the auditing into the implementation of the auditing
16 recommendations.

17 MR. HOLMSTROM: I think that insuring a
18 tracking and implementation of the audit
19 recommendations an improvement to the recommendation.

20 CHAIRPERSON MERRITT: Okay, are there any
21 other questions? Then at this time, I would like to
22 open the floor to those who have registered to
23 comment. There still time, if you would like to
24 still register for comment, please do so. I may have
25 difficulty reading your name. We'd like you to

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1 restrict your comments to three minutes and Mr.
2 Warner, if you would keep time for that, I would
3 appreciate it.

4 First, we had Marianne McGonagle. I'm
5 sorry if I've mispronounced that. Please --
6 McGonagle. If you would, please, stand, say your name
7 and come to the mike and tell me who you are
8 affiliated with or what your interest .

9 MS. MCGONAGLE: Good afternoon and thank
10 you for coming here to Delaware to hold this first
11 meeting outside of Washington. My name Marianne
12 McGonagle and for 15 years, until about two months
13 ago, I conducted oversight of the state agencies for
14 the General Assembly, so I'm aware of the very good
15 and very thorough analysis of the Motiva incident that
16 your report has indicated here and the very strong
17 wording on the findings and I'm here to totally
18 support the findings as a member of the public. I'm
19 speaking on behalf of myself but and also the fact
20 that you did make the information available. We ran
21 into a little problem when I first came here and the
22 executive summary was denied to the members of the
23 public but I thank you for releasing the information
24 during the break.

25 In light of some of the findings, I had

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1 hoped that the recommendations would be a little
2 stronger in holding Motiva and Motiva LLC responsible
3 for not only informing the workers, but allowing the
4 workers some recourse when they're sent into these
5 dangerous situations that have existed at the
6 refinery. And it isn't just the PACE workers, there
7 are other allied building trades who are involved.
8 And I speak with some knowledge because my son worked
9 for some years as a boilermaker and I'm aware of what
10 occurs when you're sent into perhaps an unsafe
11 situation; if you don't go, then you don't have a job
12 any more.

13 So I believe to my mind and there may be
14 something that I'm missing, but to my mind, the report
15 does not accurately address the protections for the
16 workers and what they do when they are -- when some of
17 these conditions are noted and here in Delaware we had
18 some people from the refinery who came and spoke on
19 the radio with their voice muffled who were very
20 critical of Motiva and what happened in -- the actual
21 workers, the people who actually do that work, were
22 very aware of what was happening at Motiva. And you
23 know, we don't always have this thorough follow-
24 through on behalf of the workers. And in my own
25 position as an oversight analyst for the General

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1 Assembly, I'm aware that we do regulate pressure
2 vessels. I heard Mr. DiPasquale talk about that. But
3 we often don't adequately fund these functions in
4 Delaware and perhaps it might be worthwhile to make a
5 note of this.

6 We have lots of regulations in place but
7 we don't always have the money to adequately
8 compensate for the services and I'm aware, having done
9 these reviews, that sometimes we skimp on safety in
10 the State of Delaware. And again, thank you for
11 opening this up, for a wonderful report and for
12 including the public in the process and also I want to
13 say that I met the wife of one of the workers and we
14 really owe these people a debt of gratitude, the men
15 who are left with these terrible memories of this
16 horrible accident. Thank you.

17 CHAIRPERSON MERRITT: Thank you, Ms.
18 McGonagle. Mr. John Flaherty. Please introduce
19 yourself, tell me who you are representing.

20 MR. FLAHERTY: Madam Chair, my name John
21 Flaherty. I'm a lobbyist for Common Cause of
22 Delaware. It's a non-profit, non-partisan citizen
23 lobby organization dedicated to government reform and
24 accountability. I'd like to echo what Ms. McGonagle
25 said. In addition, I would like to commend the Board

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1 for coming, taking the time to come to Delaware today.

2 I'd also like to thank the staff for a very concise,
3 very understandable report and I'd like to thank all
4 the hazardous duty people that responded to the
5 accident and also our government officials that have
6 made this a top priority.

7 So one of the speakers talked about Motiva
8 being a scourge on the state and I have to agree with
9 that. Their history of contempt for the laws and
10 contempt for the safety of the workers I think
11 unbelievable, but I would like to thank you all for
12 coming here and bringing this to light here today,
13 thank you.

14 CHAIRPERSON MERRITT: Thank you, Mr.
15 Flaherty. Next, Mr. Alan Muller.

16 MR. MULLER: My name Alan Muller. I
17 represent an organization known as Green Delaware
18 which primarily and environment and public health
19 advocacy organization and I would like, first of all,
20 to echo the comments of the previous folks and thank
21 you for being here today. This the first time I've
22 encountered the Chemical Safety Board and I find the
23 entire event very interesting.

24 My reaction to what I've seen, I'm
25 satisfied that you have characterized the accident

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1 correctly, at least in its narrow sense of what
2 happened and why it happened. I'm less satisfied with
3 your recommendations and I would like to make a couple
4 of initial comments and then I have some specific
5 suggestions.

6 You heard a number of observations this
7 morning from Delaware elected officials and I believe
8 they were made in good faith, but they don't
9 necessarily accurately characterize the nature of
10 Delaware's political culture which one that
11 historically has been overwhelmingly subservient to
12 industrial interests and particularly to the
13 petrochemical industry and the history that I've
14 observed and I've lived in Delaware since 1960, that
15 the state able to respond to a dramatic event that
16 receives media attention but the ability of the state
17 to follow through with regulatory initiatives less
18 impressive and because of that, we would look for
19 remedies based on federal regulatory programs of a
20 compulsory nature that hopefully would not be
21 delegated to the states.

22 Secondly, it's no secret that the
23 petrochemical industry and particularly the refining
24 industry, will continue to conduct aggressive legal
25 and political initiatives against improved -- programs

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1 intended to improve safety and I think it's fair to
2 say that this industry overall and perhaps Motiva and
3 Equilon even more saliently characterized by an
4 attitude and a culture that's caused that industry to
5 be notorious all over the world for the hazards it
6 poses to the health and safety of its neighbors.

7 So the big picture that there's a very
8 well demonstrated need for an aggressive program to
9 bring this industry under more comprehensive
10 supervision and I can't always do that but I can
11 certainly echo Secretary DiPasquale's comments in that
12 regard. I think it would not be inappropriate to note
13 that Secretary DiPasquale not going to be in his
14 position for very much longer and it seems very likely
15 to me that his successor will be less aggressive than
16 he has been in paying attention to Motiva.

17 Now, with regard to your recommendations,
18 there very little said there about the issue of
19 secondary containment or diking systems. And I think
20 that the history of tank failures shows that it's not
21 unusual for them to be of a catastrophic nature and
22 the requirement that the impoundment have a volumetric
23 capacity of 110 percent of the single largest tank
24 clearly inadequate. Similarly, the provision of
25 drainage systems negate the effectiveness of the dike

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1 seems to be common and that clearly needs to be
2 changed and I'm not prepared to suggest design details
3 but common sense would imply that that kind of a
4 system ought to have normally closed valving. It
5 would only be opened when it was necessary to drain
6 storm water and not be open as a matter of course and
7 rely on emergency action to close it.

8 Thirdly, on that point, it's clearly
9 necessary in my view to consider the dynamics of a
10 tank failure. In other words, we don't want the
11 contents sloshing over the dike. So I would like to
12 see your recommendations upgraded in that regard and
13 I'd certainly be happy to talk to your staff about it
14 in more detail.

15 With regard to inerting systems and let me
16 go to the precise wording, if I may, this your item 2
17 which begins on page 11, you make reference to
18 inerting systems installed where appropriate and
19 adequately sized and constructed. There's no mention
20 in here of the need to keep them in continuous
21 operation which might seem like an obvious point but
22 the history of this whole episode suggests the need to
23 belabor things that should be obvious.

24 Similarly, I don't see any specific
25 mention in here of the need to insure that a tank

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1 constructed of materials that are appropriate for the
2 service that it's in, that the methods of fabrication
3 are satisfactory and so on. And I'm sure that at some
4 level that's covered under various industry consensus
5 guidelines but if you're going to address some of
6 these issues in specific wording, you should do so
7 comprehensively.

8 Now, with regard to the organizations that
9 you recommend to be involved in this, I see no mention
10 of the public. I see mention of industry
11 organizations. I see mention of unions. What about
12 an organization such as ours, what about local
13 emergency planning committees whose existence
14 mandated by other federal statutes and so on and so
15 forth, particularly, although we certainly think that
16 the employees' unions should be involved, there are
17 two problems there, one of which that I frankly think
18 there's been a certain reign of terror maintained in
19 which people fear for their jobs and consequently the
20 labor organizations have not been as aggressive as
21 they might have been on safety issues. I think it's
22 been mentioned that many of the dirtiest and most
23 dangerous jobs tend to be assigned to contractors who
24 may or may not have either effective representation or
25 even necessarily an effective management chain of

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1 command because it's no secret that contracting
2 sometimes used as a means of evading the processes of
3 employment.

4 So I may be talking more than I ought to
5 be talking and I'll pipe down but I would suggest that
6 you make an effort to revise your recommendations so
7 as to include a broader participation, so thank you.

8 CHAIRPERSON MERRITT: Thank you for your
9 comments. Next, Mr. Wally Kremer.

10 MR. KREMER: I represent the organization
11 called CCOBH. It's a civic organization of 150 civic
12 associations, 80,000 people in Northern Castle County.

13 CHAIRPERSON MERRITT: Did I pronounce your
14 name correctly?

15 MR. KREMER: Yes, correct, thank you. I'm
16 a chemical engineer with 41 years of industrial
17 experience being responsible for and approving safety
18 hazards review, risk analysis in the United States and
19 all over the world. I commend you for coming to
20 Delaware and I think your presentation was excellent.

21 The total proceedings was carried out very well. And
22 what I see so far in the report and the
23 recommendations look good. As the previous gentleman
24 said, there's probably some details and I would like
25 to read it and spend some time with it and send in

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1 recommendations if there anything I see.

2 I do believe that all industry and all
3 people from the COO to management to supervision to
4 the individual worker need to be empowered, empowered
5 when there a safety or health issue to right now it
6 shuts down and then we decide what to do. And there
7 are industries, companies in the industry that operate
8 that way.

9 Secondly, there expertise and consultants
10 that can be hired and can provide any knowledge that
11 lacking and can help set up the appropriate system.
12 And I recommend that companies -- the state should
13 look at companies that are not appropriately
14 performing, should be asked to hire those type people.

15 I think the government needs to think about also
16 their own industries. We have the Three-Mile Island
17 incident which we reviewed quite a bit. There are
18 facilities that need to have this information.

19 The last recommendation I think you ought
20 to consider, I'd like you to do, with official cover
21 letter, transmit the final report to the CEOs of the
22 appropriate petroleum, chemical and so forth
23 industries and the appropriate plant managers.
24 There's an old saying that I guess, I got in the Army,
25 10 percent of the people never get the word. So we

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1 need to make sure officially they are notified. I
2 think that puts them on notice on another level that
3 they need to be doing something.

4 I think this may serve as many other cases
5 of one that people can learn from, universities could
6 use it to teach safety and so forth. And again, thank
7 you very much for coming to Delaware. We appreciate
8 it and the first letters you send out please send to
9 those companies, petroleum and chemical, just north of
10 the Delaware border. Thank you very much.

11 CHAIRPERSON MERRITT: Thank you for your
12 comments. Mr. John Kearny. And if I've mispronounced
13 your name, please say it correctly.

14 MR. KEARNY: You did, it's John Kearny.

15 CHAIRPERSON MERRITT: Kearny.

16 MR. KEARNY: I'm a staff attorney with the
17 Clean Air Council in Philadelphia and the Director of
18 the Clean Air Council here in Delaware. The Clean Air
19 Council founded in 1967 actually the oldest non-
20 profit environmental organization in the region. I
21 was motivated to come up at the last minute and just
22 say a few brief comments basically on the
23 recommendations.

24 First, I would like to commend you and
25 thank you for coming to Delaware. It does mean a lot

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1 to organizations like Clean Air Council that you took
2 the time to come and I also would like to commend the
3 investigators and, you know, the workers for their
4 findings and their recommendations. You know, I think
5 that an excellent job was done and they're all
6 excellent and I commend you for that.

7 But I don't think that they went far
8 enough. You know conspicuous by its absence are any
9 recommendations to the EPA or any recommendations that
10 any of these be implemented as regulations that are
11 mandatory for Motiva and the other Motivas like --
12 refineries like Motiva around the country. Motiva a
13 poster child of why these should be federal standards.

14 This year alone they've had 40 upset reports filed to
15 DNREC, that have amount in 3500 pounds of sulfur
16 dioxide, 40 reports alone this year.

17 This company has been fined over 20 times
18 by DNREC, EPA going back to 1989. Twenty times,
19 they've been fined and it doesn't stop. It just
20 continues and goes on and on and on. And it shows
21 what voluntary regulation by industry does. It
22 doesn't work. Your recommendations here, they're
23 excellent but they need to be enforced industry-wide.

24 They need to be enforceable industry-wide standards.

25 That would be my recommendation. I also

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1 would like to, you know, digest further the entire
2 report and have some opportunity to submit written
3 comments if possible. I don't know if there's a
4 procedure for that or how long a window open for that
5 but I would appreciate that opportunity if it's
6 available. And again, I would like to close by
7 extending my sincere condolence to the Davis family
8 and the other members -- workers that were injured and
9 their families as well, because that's the -- you
10 know, that's the real tragedy here. It's the workers
11 that have to come into plants like this that don't
12 have, you know, notification standards of safety
13 hazards. That's the loss here. It's the communities
14 living around these facilities, the children that live
15 and play around these facilities that have to put up
16 with 40 upset emissions in one year.

17 That's what takes place when there's not
18 federally mandated regulations on this industry.
19 Letting the industry do it on a voluntary basis just
20 does not cut it. I thank you for letting me comment.

21 CHAIRPERSON MERRITT: Thank you. At this
22 time are there any other comments? Please state your
23 name.

24 MR. FLAHERTY: Madam Chair, my follow-on
25 comment which I forgot to mention was there were two

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1 elected officials here today that did not get
2 recognized that worked very, very hard in the General
3 Assembly to enact the Jeffrey Davis Above-Ground
4 Storage Tank Bill. One of them sitting over here,
5 Senator Dori Connor and Senator Dave McBride, who was
6 here earlier and they did yeoman's work in making sure
7 that this bill did not get killed in committee and was
8 able to get the bill out of committee and enacted into
9 law and signed by the governor, so I wanted to make
10 sure they were recognized here today.

11 CHAIRPERSON MERRITT: Thank you for that.
12 Yes, sure.

13 SENATOR CONNOR: It's kind of nice when a
14 big guy acknowledges a little woman. I appreciate
15 that, John, very much, and please I apologize for my
16 back. There are several members of workforce --

17 CHAIRPERSON MERRITT: Excuse me, for the
18 record, would you please --

19 SENATOR CONNOR: I'm sorry, State Senator
20 Dori Connor and I represent now with the redraw of the
21 new districts, this facility now within my senatorial
22 district.

23 CHAIRPERSON MERRITT: Thank you.

24 SENATOR CONNOR: Lucky me. Several
25 members of the public that are attending today were

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1 workers on site that day. Several of the injured
2 members are here today and I know that they would like
3 maybe in many ways to remain anonymous but they also
4 need to be acknowledged for their bravery and their
5 persistence to I'm sure call to attention the working
6 situation. But they're to be honored in other ways.
7 They have endured a lot. They have been in many of
8 our thoughts and prayers and also being a widow, I can
9 identify with Mary.

10 I lost my husband to a health issue. I
11 cannot imagine what this like for her and her family.

12 My boys were 14 and 17. She has a 10-year old son.
13 It's a terrible, terrible thing. I applaud you for
14 coming here. I applaud the panel for their
15 recommendations and findings. Our hearts and thoughts
16 have to be in your actual findings of what you're
17 going to do and how the company itself going to
18 rectify what happened.

19 It was a true labor of love to have worked
20 so diligently on the Jeffrey Davis Above-Ground
21 Storage Tank Bill, which came as a recommendation from
22 one of the injured parties but it did not go quite as
23 far as we would have liked. It a step in the right
24 direction. Do I think there will be more oversight?
25 As my one son might say, "You betcha". And I think

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1 that that's the task ahead of us and with the help of
2 the governor and the other 61 members of the
3 legislature, we can achieve that goal to make safe
4 for not only the people that work on the site but the
5 people that live around it and for all of our state,
6 it's very, very, very important and I thank you from
7 the bottom of my heart for coming to Delaware. We may
8 be small but we were first, and we want to remain
9 first on this issue too, to bring this to the issue
10 across this country. Please, like we say, take it on
11 the road, go, make it happen on the federal level. We
12 need it to keep coming. Thank you.

13 CHAIRPERSON MERRITT: At this time we
14 would accept written comments although we are going to
15 bring this to a vote, I'll ask the Board whether we
16 are ready to. We do have other opportunities to
17 include many of your comments which are broader,
18 possibly than this event as well, and broader
19 regulatory recommendations. We heard some this
20 morning from Senator Biden and from Congressman Castle
21 and we hear those statements for recommendations,
22 broader recommendations as well, and we have many
23 opportunities to do that outside of this forum and in
24 addition to this forum.

25 But we would accept all written comments

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1 following this and take them into consideration in
2 future reports and future actions from the Board as
3 appropriate. So we would appreciate that and we thank
4 you all for your comments. All of this tends to
5 broaden our scope and broaden our perspective and
6 remind us that we have other partners out there that
7 are important to include in our investigations and our
8 proceedings and we appreciate your reminding us of
9 that.

10 MR. JEFFRESS: Board discussion.

11 CHAIRPERSON MERRITT: Yes, at this time I
12 would like to ask the Board if there was anything in
13 the comments that you feel that would postpone our
14 bringing this report, recommendations to a vote.

15 DR. ROSENTHAL: No. My own feeling that
16 a number of the suggestions and recommendations on
17 changes are valid items of attention. However, I do
18 not believe that following our practice of not making
19 recommendations unless they were established
20 reasonably well on explicit findings in the report
21 would allow us to include some of these valid subjects
22 and valid needs for actions into the recommendations
23 on --

24 CHAIRPERSON MERRITT: At this time, yes.

25 DR. ROSENTHAL: -- this report. So to

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1 make it short, I think we can proceed to raise the
2 issue of what do we want to do with the
3 recommendations arising from this investigation?

4 CHAIRPERSON MERRITT: Okay, there any
5 other comment?

6 DR. POJE: I just would like to echo what
7 Irv said, but also what you said, Carolyn. I believe
8 that there opportunity here for the Board to also
9 think about other matters that have been raised today
10 that may bear some more deliberation and maybe some
11 more research by the Board. But the matters before
12 us, I think, are ripe. I think they are fair for us
13 to consider right now and I certainly would support
14 bringing it to action by the Board.

15 DR. ROSENTHAL: Yes, really once the issue
16 raised, some of the members may have suggestions
17 around these recommendations, so -- but I think the
18 issue should be raised and I guess one of us has to
19 make a motion.

20 CHAIRPERSON MERRITT: Yes, I would call
21 for a motion.

22 DR. ROSENTHAL: I'll move that we open
23 consideration for the adoption and approval of the
24 recommendations of the report that were raised.

25 DR. POJE: I'll second.

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1 CHAIRPERSON MERRITT: there a second?
2 Seconded by Dr. Poje. At this time, I'd like to open
3 the floor to any comments with regard to the report or
4 its recommendations. Is there anyone who has a
5 comment?

6 DR. ROSENTHAL: Well, I think two issues
7 were raised in the course of the recommendations. And
8 I'd like to discuss one of them and that in
9 recommendation to Motiva Enterprises LLC as Mr.
10 Holmstrom acknowledged, it might be valuable to add on
11 a sentence and I'd put it in after the report as the
12 recommendation now reads, "In light of the findings of
13 this report, conduct periodic audits of the storage
14 tank, mechanical integrity and design, unsafe
15 conditions report, hot work, managers in charge and
16 accountability of the systems at Motiva Oil
17 Refineries.

18 I would like to suggest inclusion of the
19 sentence as follows, "Insure the audit recommendations
20 are tracked and implemented", and then of course, keep
21 in the last sentence which share the findings with
22 the workforce. So I would like to make that as a
23 formal suggestion, subject, of course, to my Board
24 members' agreement.

25 CHAIRPERSON MERRITT: All right, would you

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1 make that in the form of a motion, that we make this
2 change?

3 DR. ROSENTHAL: Yes, I would move that
4 recommendation one to Motiva Enterprises LLC be
5 modified to include the sentence "Insure the audit
6 recommendations are tracked and implemented", period.

7 CHAIRPERSON MERRITT: Fine. there a
8 second?

9 DR. TAYLOR: Second.

10 CHAIRPERSON MERRITT: Dr. Taylor seconds
11 that. I'd like a voice vote, please, to accept that
12 change.

13 (Voice vote.)

14 CHAIRPERSON MERRITT: Thank you. Everyone
15 approves. I approve. Are there any others?

16 MR. BRESLAND: One other suggestion for a
17 change and this, again, refers to the second
18 recommendation that was made to the American Petroleum
19 Institute regarding tank inspection standards. And
20 I'd like to suggest that we change the wording of that
21 recommendation to the following; "Revise API tank
22 inspection standards to emphasize that storage tanks
23 which may contain a flammable vapor with wall or roof
24 holes or thinning beyond minimum acceptable thickness,
25 are an eminent hazard and require immediate repair or

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1 removal from service", basically adding the point that
2 we talked before about tanks containing a flammable
3 vapor.

4 DR. TAYLOR: So we're removing flammable
5 liquid storage.

6 CHAIRPERSON MERRITT: Yeah, right, we're
7 changing it to flammable vapor. Are there any
8 comments on that? Do make that --

9 DR. POJE: I second that.

10 CHAIRPERSON MERRITT: Okay, second that
11 and could we have a voice vote?

12 (Voice vote.)

13 CHAIRPERSON MERRITT: With those two
14 changes then, the motion on the floor, could you read
15 that.

16 MR. WARNER: The motion on the floor,
17 Madam Chair, to approve the CSB report and
18 recommendations as presented with the following
19 changes to the recommendations. To Motiva Enterprises
20 LLC and to the American Petroleum Institute, the
21 recommendations as currently revised by the Board now
22 read as follows, "In light of the findings of this
23 report conduct periodic audits of storage tank
24 mechanical integrity and design, unsafe condition
25 reports, hot work, management of change and

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1 accountability for these systems in the Motive Oil
2 Refineries, insure the audit recommendations are
3 tracked and implemented, share the findings with the
4 workforce". That's Motiva Enterprises LLC, the first
5 recommendation.

6 The second change to the American
7 Petroleum Institute and the second recommendation now
8 reads as follows, "Revise API tank inspection
9 standards to emphasize that storage tanks which may
10 contain a flammable vapor with wall or roof holes or
11 thinning beyond minimal acceptable thickness are an
12 eminent hazard and require immediate repair or removal
13 from service".

14 CHAIRPERSON MERRITT: Okay, this has been
15 -- a motion has been made and seconded. Are there any
16 other comments? Then I'd like to call for a vote.

17 MR. WARNER: Madam Chair, with your
18 permission, Board Member Andrea Taylor, how do you
19 say, approve or disapprove?

20 DR. TAYLOR: Approve.

21 MR. WARNER: Board Member Rosenthal?

22 DR. ROSENTHAL: Approve.

23 MR. WARNER: Board Member Poje?

24 DR. POJE: Approve.

25 MR. WARNER: Board Member Bresland?

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1 MR. BRESLAND: Approve.

2 MR. WARNER: Madam Chair?

3 CHAIRPERSON MERRITT: I approve. And the
4 vote carried.

5 MR. WARNER: Motion carried, five, zero.

6 CHAIRPERSON MERRITT: This has been an
7 important investigation for the Chemical Safety Board
8 and I am pleased that it has reached a conclusion. I
9 think the investigative and recommendation teams did
10 an excellent job as has been stated by others who are
11 not as biased as I am. This accident was rooted in
12 three elements; maintenance and the mechanical
13 integrity of the tanks, management of hot work
14 performed in the area, and the management of
15 engineering and process changes within the plant.

16 Had any one of these elements been handled
17 more effectively, this accident in all probability
18 would now have occurred. This a message not only for
19 Motiva but for all the companies. Process safety
20 procedures are best management practices. Motiva very
21 likely will take or has taken measures to insure that
22 an accident like this won't happen again. They have a
23 compelling reason to act as you've heard. For Motiva,
24 the cost of this accident has not only been the loss
25 of life and eight injuries, and the environmental and

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1 property damage, and the clean-up but also the
2 interruption of business, the adverse publicity, legal
3 bills and so forth.

4 The monetary cost also will run into the
5 tens of millions of dollars. By comparison, the kinds
6 of safety programs that could have prevented this
7 tragedy are not very costly at all. So Motiva will
8 act, but what about the other companies out there and
9 across the country? For the companies that have not
10 put in place effective safety programs, this a very
11 concerning issue. This a theme that I intend to
12 return to throughout my chairmanship. Implementing
13 process safety programs not only save lives and
14 protects the environment, it's good business.

15 Companies can directly benefit by adopting
16 a broader view of process safety regulations and
17 standards. It evident from the Chemical Safety Board
18 report that Motiva's decision not to include the tank
19 farm within its process safety program had tragic
20 consequences. The Chemical Safety Board's
21 recommendation to the U.S. Occupational Safety and
22 Health Administration that they seek a permanent
23 resolution of this important issue. This change will
24 save lives. The recommendation to expand the process
25 safety management standard will establish a baseline

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1 of good practice for many hazardous storage tanks.

2 Under the Clean Air Act OSHA will have a
3 period of 180 days to consider this recommendation.
4 I'll be working immediately to establish a dialogue
5 with Secretary Henshaw on this matter and to bring it
6 to a conclusion and with the other parties that are
7 involved who have made recommendations and have had
8 recommendations made to them.

9 The next public meeting of the U.S.
10 Chemical Safety Board scheduled tentatively for
11 Tuesday, September 17th, in Houston, Texas. The focus
12 of that meeting will be another important industry-
13 wide safety issue, the problem of controlling reactive
14 chemical hazards. I'd encourage anyone with an
15 interest to visit our website www.chemsafety.gov for
16 the latest information on this meeting. Like today's
17 session, this meeting on the 17th will be broadcast
18 live and without charge on the Internet.

19 I'd like to thank the investigating team;
20 Dave Heller, Mike Morris, for their excellent work and
21 for their thorough presentation today and I would also
22 like to recognize Don Holmstrom, who worked closely
23 with the team on developing the safety recommendations
24 and also gave an excellent presentation this morning.

25 Finally, I'd like to thank the CSB

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1 investigating team, Steve Selk, Kevin Mitchell, Steven
2 Wallace, Giby Joseph, and Shannon Jones, who all
3 participated in the field phase of the investigation.

4 I'd also like to thank those on the CSB staff, who
5 organized this meeting and made sure that it came
6 across and came over smoothly. It's not small task
7 and I appreciate all of their efforts.

8 With that, if there no further comment,
9 the meeting stands adjourned.

10 (Whereupon, at 12:06 p.m. the above-
11 entitled matter concluded.)

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