UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

Investigative Hearing of:	*	
	*	
NORFOLK SOUTHERN TRAIN DERAILMENT	*	
IN EAST PALESTINE, OHIO	*	Accident No.: DCA23HR001
ON FEBRUARY 3, 2023	*	
	*	

East Palestine High School
360 West Grant Street
East Palestine, Ohio

Thursday,
June 22, 2023

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APPEARANCES:

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TROY LLOYD, Railroad Accident Investigator
PAUL STANCIL, Senior Hazardous Materials Accident Investigator
JOEY RHINE, Railroad Accident Investigator
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PARTIES TO THE HEARING

Federal Railroad Administration
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ADAM RICHTER
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Pipeline & Hazardous Materials Safety Admin.
BILL SCHOONOVER
CAREY DAVIS

Norfolk Southern Railway
DAVID GOODEN

TRINITY RAIL
A.D. MCKISIC
AMY HAMILTON

OxyVinyls
KARENANNE STEGMANN
PAUL THOMAS

APPEARANCES (continued):

Brotherhood of Railroad Signalmen
QUINN NORMAN
CHRISTOPHER HAND
JASON JONES

Brotherhood of Locomotive Engineers & Trainmen
RANDY FANNON
BRIAN FRANSEN
SHAWN LAWTON

International Association of Sheet Metal, Air, Rail and Transportation Workers
JARED CASSITY
JEFF MITCHELL

Transportation Communications Union
JASON COX

International Association of Fire Fighters
PAUL CAREY
JAMIE BURGESS

Community Members of East Palestine
PEGGY CLARK

Panel 1: Hazard Communications and Emergency Responder Preparedness for the Initial Emergency Response

SCOTT DEUTSCH, Norfolk Southern Railway
DAN HAUETER, East Palestine Police Department
KEITH DRABICK, East Palestine Fire Department
WILLIAM JONES, East Liverpool Fire Department
ERIC BREWER, Beaver County Emergency Services
DAN SWORDS, Ohio Department of Public Safety

APPEARANCES (continued):

Panel 2: Circumstances that Led to the Decision to Vent and Burn Five Vinyl Chloride Tank Cars

ROBERT WOOD, Norfolk Southern Railway
KEITH DRABICK, East Palestine Fire Department
DREW MCCARTY, Specialized Professional Services, Inc.
CHARLES DAY, Specialized Response Solutions
PAUL THOMAS, OxyVinyls
WILLIAM CARROLL, PhD, Dept. of Chemistry, Indiana Univ.
STEVE SMITH, OxyVinyls
DAVID PADFIELD, Pennsylvania Emergency Management Agency
MAJOR GENERAL JOHN HARRIS, JR., Ohio National Guard

I N D E X

P R O C E E D I N G S

(8:55 a.m.)

CHAIR HOMENDY: Good morning. We're now in session. I'm Jennifer Homendy, and it's my privilege to serve as Chair of the National Transportation Safety Board. I'm joined today by my NTSB colleagues, Vice Chair, Bruce Landsberg, member Michael Graham, and member Tom Chapman.

I'd now like to pause so our hearing so our hearing officer, Stephanie Shaw, can share some important safety information.

MS. SHAW: Thank you, Chair Homendy.

Please note the nearest emergency exit to where you are seated. You can use the rear doors that you came through to enter the gymnasium, and there is also a set of emergency doors on either side of the stage. There are signs in the hallway directing you to an AD in the lobby. That concludes my safety briefing, Chair Homendy.

CHAIR HOMENDY: Thank you so much.

Over the course of this hearing, we'll consider testimony related to the Norfolk Southern Railway train derailment with subsequent hazardous material release and fires that occurred here in East Palestine, Ohio, on February 3rd of this year. Investigator in charge, Ruben Payan, will provide a detailed presentation of the derailment shortly.

But before we go any further, on behalf of the entire agency, I want to express our sincere regrets and for the entire community

who continues to experience a significant tragedy. We spoke to many of you last night. I see many of you in the audience today. Thank you for giving us the time last night to talk with you about the NTSB, to share with us about your experiences, and thank you for the time to ask us questions. Just know that all of us think about you not just during this hearing, not just during the investigation, but well after our final board report is issued as we work very hard to get our recommendations implemented and improved safety and prevent a similar tragedy from occurring in the future.

The information learned during this hearing will help us determine what went wrong on February 3rd. We'll then make safety recommendations to prevent similar derailments from ever happening again and will advocate for our recommendations for as long as it takes. And I mean it. The NTSB fought for 50 years for positive train control, will never stop fighting for rail safety until there are zero derailments in US communities, until there are zero HAZMAT releases from transportation disasters, until the day when no one else experiences what this community has. That is our mission.

This hearing is an opportunity for the public to see part of the NTSB's investigative process. Normally, these proceedings take place at our headquarters in Washington DC. Instead, we're holding a rare field hearing here in East Palestine. We made that decision for one simple reason; the people most affected by this

derailment deserve as much insight as possible. Community members deserve to see not just how we're investigating the derailment, but who is doing the work. The real public servants dedicated to finding its cause and advocating for change based on the lessons learned. They deserve to hear what we're learning about the derailment in real time, and they deserve accountability. That's another reason why we're here, so members of the public can hold the NTSB accountable for conducting a fair, thorough, and independent investigation.

Just before coming here, I received a letter in the mail from an East Palestine resident. She wrote: "Rail can be safer. It must be safer for all of America." We couldn't agree more, which is why the NTSB takes accountability so seriously. It is our job to hold everyone accountable for safety, local, state, and federal agencies that regulate the rail industry, freight rail companies which own the trains and the tracks that carry HAZMAT through communities like East Palestine, rail workers who maintain and operate the trains, companies that produce the HAZMAT and the tank cars used to transport it, and emergency responders who arrive on scene following a disaster. We exist to hold them all accountable.

That's why our investigation is much broader, much broader than the issues that you'll see before you today. Today we'll be covering two main issues. I will have more tomorrow. But today we'll focus on, the first panel will be focused on the hazard

communications and emergency responder preparedness for the initial emergency response.

This afternoon, we'll hear testimony on the circumstances that led to the decision to vent and burn the five vinyl chloride tank cars. Tomorrow morning, we'll cover freight car bearing failure modes and wayside detection systems. After that, we'll consider the final topic of the hearing, which is rail tank car safety. These topics were determined and agreed upon at a prehearing conference hosted virtually on June 1, 2023.

I'd now like to introduce the NTSB staff who have a role at this hearing and who do an incredible job not just for this investigation but for the entire agency. First, we have Stephanie Shaw, who is our hearing officer. And Ruben Payan, who is our investigator in charge for this investigation, both of whom you'll hear from shortly.

Next, we have the chairs of our technical panels. Troy Lloyd, who is a railroad accident investigator, will lead Panel 1. Paul Stancil, who is the senior hazardous materials accident investigator will lead Panels 2 and 4. Joey Rhine, a railroad accident investigator, will lead Panel 3.

Additional NTSB staff that I'd like to introduce are Rob Hall, director of our Office of Railroad Pipelines and Hazardous Materials Investigations, and Mike Hiller, who is our deputy director of that office. I think you're back there. There we go. And Ben Allen behind me will provide legal support.

Julie Canan and Dana Sanzo will operate the auto visual and timer. Jennifer Gabris, Keith Holloway, and Eric Wise will be handling media relations. Eric Grosof will be handling safety and security. And finally, Elias Kontanis and Stephanie Matonek from our transportation disaster assistance division are here to provide support to those affected by the derailment. Did I miss anyone? Nope.

Okay. All right. I'll now introduce the parties designated to participate in this investigative hearing as prescribed in the NTSB rules. The parties to an NTSB investigation are organizations or individuals with special knowledge whose participation we deem necessary in the public interest. While they are not part of the analysis, parties are essential in helping us develop the facts around an investigation. The federal register notice of this hearing published on May 31, 2023, listed the Ohio State Highway Patrol as a party to the investigation. However, they respectfully declined citing their discomfort in questioning witnesses from other Ohio state agencies who they consider peers, and I think that's reasonable.

As I call the name of each party, I ask the designated party spokesperson to identify themselves and introduce the others from their organization. We will begin with the parties from federal, state, and local government agencies, starting with the Federal Railroad Administration.

MR. ALEXY: Good morning, my name is Karl Alexy. I'm the

associate administrator for railroad safety and FRA chief safety officer. With me, I have Adam Richter, who is an inspector with our signal and train control division, and Ervin White, who is an inspector and the IIC on our investigation into this incident, and he is with mode of power and equipment.

CHAIR HOMENDY: The Pipeline and Hazardous Materials Safety Administration.

MR. SCHOONOVER: Hello. I'm Bill Schoendorfer. I'm the associate administrator for the Office of Hazardous Materials Safety. With me, I have Mr. Carey Davis, who's my deputy associate administrator for field operations, and Adam Horsley, who is my general counsel.

CHAIR HOMENDY: The Village of East Palestine.

MS. CLARK: Good morning. I'm Peggy Clark. I'm the director of the Columbiana County Emergency Management Agency, and I'm here assisting the East Palestine Village.

CHAIR HOMENDY: Next, we have the parties representing labor organizations, starting with the Brotherhood of Railroad Signalman.

MR. NORMAN: Hi. I'm Quinn Norman with the Brotherhood of Railroad Signalmen. I've got Jason Jones, the vice general chairman here, and Chris Hand.

CHAIR HOMENDY: Brotherhood of Locomotive Engineers and Trainmen.

MR. FANNON: I'm Randy Fannon, national coordinator, daily

safety task force. I have with me Brian Fransen and Shawn Lawton, who is the national coordinator as well and the assistant for the BLET.

CHAIR HOMENDY: Thank you. International Association of Sheet Metal, Air, Rail, and Transportation workers, or SMART.

MR. CASSITY: Good morning. Jared Cassity. I'm the director of our national safety team; SMART TD. With me is Jeff Mitchell, our Kentucky state director and one of our inspectors for the team.

CHAIR HOMENDY: Thank you. Transportation Communications Union and the IAM, or the International Association of Machinists and Aerospace Workers.

MR. COX: Yes. Jason Cox, Transportation Communications International Union with the Brotherhood of Railway Carmen. Thank you.

CHAIR HOMENDY: The International Association of Firefighters.

MR. CAREY: Good morning. My name is Paul Carey. I'm a retired Boston Fire Department District Chief HAZMAT Operations Chief. I'm here as a party representative from the International Association of Firefighters, and with me is Mr. Jamie Burgess, our deputy director of HAZMAT training.

CHAIR HOMENDY: Thank you so much. Finally, the industry table. Let's start with Trinity Rail Management Leasing Services.

MR. MCKISIC: Good morning. My name is A.D. McKisic, vice

president and chief engineer. With me I have Amy Hamilton, principal engineer, and Scott Ewing, vice president and associate general counsel. Thank you.

CHAIR HOMENDY: Great. OxyVinyls.

MS. STEGMANN: Good morning. My name is Karenanne Stegmann. I'm the vice president of supply chain for OxyVinyls. I am also the OxyVinyls party representative for the NTSB investigation. With me is Paul Thomas, our vice president of health and environmental safety and security, and also joining us is Mark Farley, our incident response legal counsel. Thank you.

CHAIR HOMENDY: Great. And Norfolk Southern?

MR. GOODEN: Good morning. My name is David Gooden, and I'm with Norfolk Southern's Transportation Department, and with me today is Chris Davies and Paul Williams.

CHAIR HOMENDY: Okay. I'd also like to thank the many witnesses testifying at this hearing, all of whom it should be noted are participating willingly. Thank you for being here in support of rail safety.

The witnesses have been selected because of their ability to provide the best available information on the safety issues pertinent to this investigation. Witnesses will remain under oath until the conclusion of the hearing. In the interest of time, we will not describe the witnesses' credentials. That will be in the docket. Instead, we have pre-qualified each witness by documenting their qualifications in writing. Again, you may

review each witness's biographical information in the public docket, which opened to the public this morning. We have lots of information in that public docket. We have a website at NTSB.gov on the East Palestine derailment. You can access the public docket through that website.

I'd now like to provide a general overview of the proceedings and appropriate conduct. You may wish to refer to the hearing agenda for more detail. Each day, when we will cover two of the topics I outlined earlier by way of technical panels. There will be one panel before lunch and one after. We will follow a similar process for each. Ms. Shaw will begin by introducing the members of each panel and swearing in the witnesses. Some of the witnesses will then exercise their option to make brief opening statements. Witnesses will then be questioned in the following order: First, by the NTSB technical panel, which again, includes NTSB staff who are part of this investigation. Next, by the parties in front of me. And finally, by the Board of Inquiry. The parties, that's us. Parties, please remember that only your designated spokesperson may question the witnesses.

Right now, we'll only have one round of questions. If anyone questioning the witnesses believes a second round is warranted, please raise your hand. I'll determine whether it's appropriate. If granted, the second round will be limited to questions that clarify the record or address a new matter.

If a party spokesperson objects to any question, please raise

your hand and wait to be recognized by me. I will make all rulings on the admissibility of exhibits, appropriateness of questions, and pertinence of proffered testimony. Mr. Allen, again, who is seated behind me, will provide legal assistance and all such rulings will be final.

A word about conduct. This hearing is an administrative, fact-finding proceeding with no adverse parties. It is not our purpose to assign blame or determine the legal rights or liabilities of any person or entity. Such matters will be excluded from these proceedings.

If you will be questioning the witnesses, please remember you must limit your questions to the topics listed in the agenda. Please also refrain from asking questions that call for speculation or analysis.

To our witnesses, please respond to questions by providing only the facts as you understand them. You may not speculate as to the cause of the derailment or analyze the facts.

Before I invite the hearing officer to introduce the exhibits, I'd like to acknowledge the many people and organizations who have made this hearing possible. First, I extend the Board's gratitude for their assistance in collaboration with this event. Federal Protective Service, the East Palestine Police Department, the East Palestine Fire Department, the East Palestine School District, Columbiana County Sheriff's Office, and the Ohio State Highway Patrol. I also want to thank Sara Dutton,

the principal of the school, Janice Cartwright, the secretary for the school, and Mark, Angie and the entire custodial team for all their work. Thank you so much. We truly appreciate all your partnership.

I also want to thank the American Red Cross and the Salvation Army for their contributions. They've generously provided water and snacks, which you can find in the lobby. Additionally, volunteer mental health clinicians from the Red Cross are available to provide emotional support for anyone attending this hearing.

Finally, I want to extend the Board's gratitude to our colleagues across the NTSB. The Office of Chief Financial Officer, the Office of Chief Information Officer, Office of General Counsel, Office of the Managing Director, Office of Railroad, Pipeline and Hazardous Materials Investigations, Office of Research and Engineering, Office of Safety Recommendations and Communications, Office of Equal Employment Opportunities, Diversity and Inclusion, Office of Administrative Law Judges, Office of Aviation safety, and the Offices of Vice Chair Landsberg, Members Graham and Chapman, as well as my team. Thank you all.

Next, the hearing officer will share some reminders and describe the exhibits. Ms. Shaw?

MS. SHAW: Thank you, Chair Homendy.

If you have not already done so, please silence your

electronic devices. Please plan for a 15-minute morning break at 11:30 a.m., and a lunch break from 1:30 to 2:30 p.m. The 15-minute afternoon break will occur at about 4:45. Please be advised that these proceedings are being streamed live and video recorded. The video will be posted publicly to the NTSB YouTube channel following the hearing.

Now, let's discuss exhibits. Exhibits for this hearing include reports produced by NTSB investigative staff, videos and other documents that have been submitted by the technical panel members, witnesses, and parties to support their testimony and questions you will hear over the next two days. The exhibits for this hearing are in nine separate groups and can be identified by group and number.

Group A are administrative exhibits and witness biographies used to pre-qualify the witnesses who will testify in this hearing.

Group B are group chairman's factual reports.

Group C are exhibits related to the first manual, which is on hazard communication and emergency responder preparedness for the initial emergency response.

Group D are the exhibits related to Panel 2, circumstances that led to the decision to vent and burn five vinyl chloride tank cars.

Group E are the exhibits related to Panel 3, wheel bearings and wayside defect detectors.

Group F are the exhibits related to Panel 4 for rail tank car safety.

Group G are NTSB introduced interview transcripts.

Group H are the party introduced exhibits.

And finally, Group M is reserved for other miscellaneous exhibits.

The NTSB is authorized by statute to disclose information to carry out its mission, but we protect confidentiality and proprietary information to the greatest extent possible. As such, the exhibits contain redactions. These are the result of negotiations between the parties and NTSB regarding the disclosure of information claimed to be personally identifiable, security sensitive, or proprietary in nature. They're redacted. The exhibits do contain sufficient information so that members of the public can refer to them during the hearing and throughout the NTSB investigation.

These exhibits are entered into the record, and any presentations, along with other recorded records of the investigation, become part of the NTSB public docket and are available via the NTSB website at NTSB.gov.

The public docket did open this morning. Parties spoke persons and witnesses have been provided electronic copies of the public docket containing the exhibits identified. The docket is located on the East Palestine Investigation page, which you can access in one of two ways, by visiting NTSB.gov/EastPalestine, or

by going to our main NTSB.gov page. You'll find a link there. If you've joined us in person, you can scan the QR code on the back of the hearing agenda.

On the investigative page, you will find the link to the public docket just above the map. A transcript of the testimony taken during the hearing will be prepared and entered into the docket as soon as possible. In addition, Mr. Allen will keep a list of any documents that are discussed during the hearing that are not currently exhibits in the NTSB public docket, and these documents will be submitted after the hearing and entered into the docket.

Additionally, the parties will have the opportunity to submit proposed findings of fact, conclusions, and recommendations to the Board of Inquiry after the close of the hearing. Their submissions are also made public and added to the public docket and will receive careful consideration during the Board's analysis over the evidence and preparation of the final report. We encourage the parties to make use of this opportunity. Please note that the submissions must be sent to the NTSB within 60 calendar days of the closing of the hearing by August 21, 2023, and the parties must also provide copies to each of the other parties as well.

Chair Homendy, that concludes my remarks. Thank you.

CHAIR HOMENDY: Thank you so much, Ms. Shaw.

Before we get into the next part, I do want to stress it is

going to be hot in here. There is no air conditioning. We cannot run the fans because then you couldn't hear the proceedings. So, if you need to step out, and that includes the witnesses, I don't want anyone to feel uncomfortable. If it's too hot, if you need a break, if you need some water, let us know. Please take that moment to step out, get some air. We want to make sure that everyone is safe and can participate today.

So, with that, I'll ask our investigator in charge, Ruben Payan, and hazardous materials agent investigator Paul Stancil to provide an overview of the derailment. The floor is yours.

MR. PAYAN: Good morning, Chair Homendy, members of the Board of Inquiry.

On February 3rd, 2023, about 8:54 p.m. Eastern Standard Time, eastbound Norfolk Southern Railway general merchandise freight train 32N derailed in East Palestine, Ohio. At the time of the accident, visibility conditions were dark and clear, the weather was 10 degrees Fahrenheit with no precipitation. The NTSB reviewed mechanical inspections and train operations for train 32N from where the train originated as part of the investigation.

The train set was built at the Terminal Railroad Association Yard in Madison, Illinois, where a mechanical inspection and air brake test were performed by a railroad qualified mechanical inspector on February 1st.

The train departed the Madison, Illinois yard on February 1st as eastbound general merchandise train 32N. Train 32N travelled

to Decatur, Illinois where it had 55 rail cars removed and 41 rail cars added to the consist. The third locomotive was moved from the front of the train to mid-train as a distributive power unit locomotive. The 41 rail cars that were added received a mechanical inspection and air brake test by a railroad qualified mechanical inspector. The train was clear to depart with no identified mechanical problems.

On February 2nd near Bement, Illinois, train 32N experienced break pipe air pressure problems, which caused a two-hour delay while the end of train device was replaced by mechanical personnel and the train 32N was cleared to continue.

Later that day, near Williamsport Indiana, train 32N experienced a train line induced emergency brake application due to a broken coupler knuckle on a non-hazardous material tank car. The broken knuckle was replaced by mechanical personnel, and the train was cleared to continue.

On February 3rd, train 32N departed Puru, Indiana. The train consist remained unchanged, with two locomotives at the head end, 149 rail cars, and a DPU locomotive mid-train. Train 32N continued to Toledo, Ohio, with no reported problems. In Toledo, Ohio, train 32N departed with a new train engineer, conductor, and conductor trainee.

At 8:53 as train 32N operated through the Village of East Palestine, Ohio, the train crew received an audible, critical alarm message over the locomotive radio for hot bearing on axle

101 on the south rail. The 101st axle corresponded to the lead axle of the 23rd railcar behind the locomotives, which was hopper car GPLX 75465.

The train engineer was in the process of stopping the train when a train line emergency brake application occurred. Following the emergency brake application, train event recorder data indicated the locomotives travelled an additional 1,368 feet before coming to a stop. Rail cars 1 through 22 remained behind the locomotives and stopped east of the derailment pileup.

Thirty-eight rail cars were derailed and included rail cars 23 through 60. The rail cars came to rest about 400 feet east of the Pleasant Drive Highway rail grade crossing in East Palestine, Ohio. Twelve rail cars, cars 61 through 72 did not derail or were damaged by the post-accident fire.

The remaining 77 cars, car 73 through 149, did not derail and stopped west of the derailment pileup.

The investigation identified scrape markings along the top railhead of the south-running rail at milepost 49.5, which is about 120 feet west of the Pleasant Drive Highway rail grade crossing. This was determined to be the point of derailment.

Wheel set 1 from hopper car GPLX 75465 was found adjacent to the car with the L1 journal burnt off and located just east of the derailment pileup. The burnt off journal and bearing segments were located just west of the derailment pileup on the south side of main track 1.

Train 32N went by 40 wayside defect detector locations between February 1st in Madison, Illinois, and February 3rd in East Palestine, Ohio. The 40 wayside detector locations consisted of 39 dragon equipment detectors, 10 hot wheel detectors, 1 T-bogey detector or truck bogey optical geometry inspection detector, one wheel impact load detector, and 39 hot bearing detectors.

Post-accident interviews of the previous train crews did not identify any defect detector alarms for train 32N. In addition, data from the NSATC desk also did not indicate any critical alerts for train 32N during the prior train movements. The NTSB investigation focused on the three hot bearing defect detectors that train 32N traversed approaching the point of derailment.

The Sebring detector was located about 30 miles from the point of derailment at milepost 79.8. After train 32N traversed the Sebring detector, data indicated that L1 axel bearing temperature was 38 degrees, and the R1 axel was 18 degrees while the train was traveling at a maximum speed of 37 miles per hour over the detector.

There was no alarm radio broadcast to the train crew, nor an alert sent to the ATC desk since all wheel bearing temperatures were within tolerance.

The Salem detector was located about 20 miles from the point of derailment at milepost 69.1. When train 32N traversed the Salem detector, data indicated the L1 axle bearing temperature was

103 degrees, and the R1 axle bearing was 20 degrees with a train traveling at a maximum speed of 25 miles per hour over the detector. There was no alarm radio broadcast to the train crew, but a non-critical alert was transmitted to ATC desk as the L1 axle bearing was showing an increase in temperature from the previous defect detector location.

The East Palestine detectorwas located about three-tenths of a mile from the point of derailment at milepost 49.8. When train 32N traversed the East Palestine detector, data indicated that the L1 axle bearing temperature was 253 degrees, and the R1 axle bearing was 20 degrees, with the train traveling at a maximum speed of 47 miles per hour over the detector.

The detector broadcasted an audible alert over the radio to the train crew of the critical alarm as soon as the 23rd railcar traversed the detector field equipment. No data was transmitted to the ATC desk since the train stopped over the detector equipment, and the detector would not transmit the data until the entire train traversed and cleared the equipment.

The NTSB investigation also collected additional sources of information that could help identify a point along the route of train 32N where indications of mechanical problems initiated.

Following the accident, investigators were provided security videos from private homes and local businesses located along the railroad tracks. In addition, NTSB canvassed the area around the derailment site and worked back along the accident train route.

Additional witnesses and video footage were identified in and obtained.

This is a compilation showing train 32N as it approached East Palestine on the night of the derailment. About 50 miles from the point of derailment as train 32N travelled through Ravenna, Ohio, two video sources were identified. The first was at Spring Street, and the second one was near Prospect Street. The video footage indicated train 32N going by but did not show any indications of mechanical problems. About 45 miles from the point of derailment, train 32N was next recorded as it went through Rootstown, Ohio, near Industry Road. Train 32N came into view through the trees and a high-pitched squeal can be heard. The squeal increases in intensity for about two seconds, and then it's no longer heard again.

About 40 miles from the point of derailment, train 32N was near Keystone Street in Alliance, Ohio. The train is visible but did not show any indications of a mechanical problem.

About 38 miles from the accident, train 32N was next recorded by several cameras as it went through Sebring, Ohio, near West California Avenue. A screen shot of train 32N came into view, but no indications of a mechanical problem can be seen.

In Salem, Ohio, about 26 miles from the point of derailment, train 32N was recorded near West Wilson Street, and the glow of fire is visible underneath the 23rd hopper car.

32N is again recorded near Ellsworth Avenue, South Lincoln

Avenue, and Snyder Road showing a visible glow of a fire underneath the same railcar.

As train 32N continued into Columbiana, Ohio, near Main Street, several locations captured the hopper car with a fire underneath the lead axle. A witness near South Vine Street also reported hearing an unusually loud metal scraping sound but did not remember seeing a fire.

In New Waterford, Ohio, train 32N was recorded with fire and sparks underneath the hopper car near Bull Creek Road and Boardman Street.

In East Palestine, Ohio, train 32N was recorded at several locations near East Clark Street and North James Street. In the recordings, a distorted high-pitched squealing sound is heard and then two loud bangs, train braking, and a bright flash.

(Video played).

Following the train derailment at 8:54, the first 911 call to the East Palestine Police was received at 8:56. At 8:58, the first alarm to Station 24 went out to request all available fire and EMS personnel to respond to Pleasant and East Taggart Street for a train derailment and fire.

At about 9:00 p.m., the East Palestine Volunteer Fire Department arrived on scene. A second alarm to Station 24 went out at about 9:01 requesting all available fire and EMS to report to the station and respond to East Taggart and Alice Street. East Palestine dispatch contacted the Norfolk Southern in Atlanta,

Georgia, at 9:04 to obtain information. Norfolk Southern took their information and instructed them that they would call back.

At 9:07, the incident commander called dispatch from the scene to request a HAZMAT team and an engine and a tanker from Springfield. At about 9:08, East Palestine dispatch sent a request to Station 11 and Station 24 requesting all available personnel to respond.

At 9:10, the director of the Columbiana County Emergency Management Agency received a cellphone call as the initial notification of the incident. At 9:15, the director of the Columbiana County EMA called the manager of Beaver County, Pennsylvania, EMA to request HAZMAT mutual aid response.

At 9:19, the train crew of 32N radioed the Norfolk Southern railroad dispatcher and requested to cut the locomotive away from the train. The dispatcher approved the movement, and the locomotives were moved about 300 feet east of the train.

At 9:24, the fire chief from the East Liverpool Fire Department HAZMAT received the first notification of the activation.

At 9:27, the train conductor, referencing his HAZMAT guidebook, learned the guidebook indicated they should be one mile away from the hazardous material, so the locomotives were moved east about one mile from the train.

At 9:35, the Beaver County Emergency Services was notified and assistance requested. A full response was initiated from

Beaver County Stations 11, 18, and 22.

At about 9:45, the East Palestine Police Department began evacuating residential dwellings on Taggart Street and Clark Street that were close to the fire.

At 10:23, the fire chief and East Liverpool Fire Department received an e-mailed train consist from the director of the Columbiana County EMA.

At 10:34, Ohio State Patrol advised a one-mile evacuation to be implemented.

At about 11:00 p.m., Norfolk Southern HAZMAT personnel arrived on scene, and a railroad contractor arrived shortly thereafter.

About midnight, fire suppression operations were suspended due to the HAZMAT labeling of the tank cars and prescribed response procedure guidance being identified. The incident command post was also relocated to the East Palestine Fire Department.

Mr. Stancil will now provide an overview of the HAZMAT materials hazardous materials investigation.

MR. STANCIL: Thank you, Mr. Payan.

Train 32N was a mixed freight train that included a total of 20 tank cars of hazardous materials as defined by Department of Transportation regulations, including 17 loaded tank cars with their quantities indicated on this slide and three empty tank cars with residues. The derailment involved 11 of these 20 hazardous

materials tank cars.

Eight of the 11 derailed tank cars shown in this table released hazardous materials commodities following the derailment. Three DOT 111 tank cars carrying flammable and combustible materials, car Nos. 36, 38 and 50 were initially breached by mechanical damage. All five DOT 105 vinyl chloride tank cars that were ultimately subjected to an explosives-induced vent and burn action three days after the derailment were not initially breached by the derailment damage.

The following video further describes the release of hazardous materials and some key events that culminated in the incident command conducting a vent and burn action on the five tank cars loaded with vinyl chloride monomer on February 6, 2023.

The train was transporting hazardous materials in 17 loaded tank cars and in three empty tank cars with residue. 11 of the derailed tank cars contained hazardous materials, including five specification DOT 105 tank cars loaded with 115,580 gallons of stabilized vinyl chloride monomer, a liquified, compressed flammable gas.

NTSB investigators determined the initial derailment damage included one breached DOT 111 tank car containing flammable liquid butyl acrylate, and two breached DOT 111 tank cars containing combustible liquids, two ethyl hexyl acrylate and ethylene glycol mono butyl ether. These released materials became involved in the post-derailment fire.

The derailment also resulted in the breach of six tank cars containing non-hazardous liquids, including propylene glycol, diethylene glycol, and petroleum lubricating oil, which also ignited.

Additionally, post-derailment fires burned six other derailed hopper cars carrying polyethylene plastic pellets and poly vinyl chloride granular plastic, as well as three boxcars carrying other non-hazardous freight.

The five vinyl chloride tank cars were exposed to pool fire conditions in the derailment pileup. This led to their pressure relief devices venting pressure and re-closing after normal pressure was restored within the tank cars. This is part of the normal functioning of a tank car's thermal protection system. All vapor released through the pressure relief devices ignited, as is typical in most derailment scenarios involving flammable materials where sources of ignition are present.

On the early evening of Saturday, February 4, one vinyl chloride tank car forcefully released burning vapor over a 70-minute period. This is the last time any of the vinyl chloride tank cars vented material through their pressure relief devices.

By the morning of February 5, emergency responders had mitigated the fire, but the vinyl chloride tank cars continued to concern authorities because their pressure relief devices had stopped operating and the temperature had risen as measured on the tank car shell surfaces. Emergency response crews found valves

and fittings were thermally damaged, making them unusable for unloading the tank cars.

The incident commanders ultimately scheduled a controlled vent and burn of the five vinyl chloride tank cars, which they determined was their last available mitigation option to avoid the risk of catastrophic tank failures that could have propelled fractured tank parts into residential areas.

To prepare for the vent and burn, incident commanders expanded the evacuation zone to a one-mile by two-mile area. Crews dug pits to contain released vinyl chloride liquid while it vaporized and burned.

On Monday, February 6, about 4:37 p.m., incident commanders initiated the vent and burn operation with tank car breaching explosive charges. The released vinyl chloride burned throughout the night of February 6.

Wreckage clearing began on Tuesday, February 7. Residual fires were extinguished by noon on February 8th.

Post-derailment damage examinations found all three DOT 111 tank cars that released flammable and combustible materials had sustained tank-head punctures and cracks. One of these DOT 111 tank cars also released combustible liquid from a bottom outlet valve where the operating handle opened during the derailment sequence.

Although the examinations found no evidence of derailment-related mechanical breaching damage to the five DOT 105

cars carrying vinyl chloride, post-derailment fire exposure melted away aluminum protective housing covers on three of the five tank cars. Aluminum debris contaminated the discharge ports of their pressure-release devices and covered loading and unloading valves.

The NTSB materials laboratory confirmed samples of the debris consisted predominantly of aluminum. The aluminum hand wheels for unloading and loading on the valves of four of the five tank cars were also destroyed by heat exposure. All five vinyl chloride tank cars were each punctured in two locations during the vent and burn actions that were conducted three days after the derailment.

This slide shows examples of damage to tank cars that were carrying hazardous materials. The left image shows a cracked and breach tank head of a DOT 111 tank car that was transporting combustible liquid.

The center image shows a DOT 111 tank car with an open bottom outlet valve and operating handle.

And the right image shows a top-fittings protective housing missing its aluminum cover and containing metallic debris within the housing and pressure relief device.

After initial on scene examinations were completed, contractors removed the pressure plate assemblies from the five vinyl chloride tank cars in preparation for further detailed examinations. OxyVinyls, the vinyl chloride shipper, collected 12 samples of residues from internal tank components for analysis, and a search for evidence whether the vinyl chloride monomer

polymerized within the tank car to create a hazardous overpressure condition. OxyVinyls employed the procedures listed here to compare the analytes to known data for poly vinyl chloride or PVC and found no evidence that PVC was present in any of the samples.

NTSB investigators examined the pressure relief devices and angle valves to document their condition and determine if they still functioned in the as-received condition, and to what level. The examination found no evidence of polymerized material or other foreign matter obstructing the pressure relief devices, the valves, or their internal components.

O rings for three pressure relief devices were heat damaged such that they leaked pressurized air below the rated start-to-discharge pressures. The valve and pressure-relief device components of one tank car were destroyed and partially consumed in the fire. The pressure relief device components, including the valve stem and guide, were severely corroded. One pressure relief device valve was stuck in the closed position, and the device did not actuate significantly above its rated start-to-discharge pressure.

The NTSB materials laboratory examined the disassembled components, finding the valve stem top guide inner diameter and valve stem itself were coated with layers of soot and burned deposits.

Chair Homendy, this concludes our presentation.

CHAIR HOMENDY: Well, thank you, Mr. Payan, and thank you,

Mr. Stancil, for excellent presentations. Very thorough.

I'll now call on the hearing officer to introduce the first technical panel and swear in the witnesses. Ms. Shaw.

MS. SHAW: Thank you, Chair Homendy. Chair Homendy, the first panel will address the hazard communications and emergency responder preparedness for the initial emergency response. The panel will address the timeline of events, hazard communications, and emergency responder preparedness in training.

Witnesses for Panel 1 are composed of the following individuals: Scott Deutsch, Norfolk Southern; Dan Haueter, East Palestine Police Department; Keith Drabick, East Palestine Fire Department; William Jones, East Liverpool Fire Department; Eric Brewer, Beaver County Emergency Services; and Dan Swords, Ohio Division of Emergency Medical Services.

The NTSB tech panel is composed of Troy Lloyd, the panel chair; Ruben Payan, the investigator in charge for the East Palestine investigation; Marc Dougherty and Cyndi Lake.

I will now like to ask the witnesses to please stand to be sworn in. Raise your right hand and please answer by saying, I do.

(Whereupon,

SCOTT DEUTSCH,

DAN HAUETER,

KEITH DRABICK,

WILLIAM JONES,

ERIC BREWER, &

DAN SWORDS

were called as witnesses and, having been first duly sworn, were examined and testified under oath, as follows:)

MS. SHAW: Thank you. You can sit down. As a reminder, all witnesses will remain under oath until the conclusion of the hearing.

Chair Homendy, these witnesses have been pre- qualified, and their respective experience and qualifications appear in the docket as exhibits in Group A.

As a reminder to the witnesses, please push the microphone button to talk, and then push it again when you're finished. And also, please answer the questions factually and avoid analysis. I now turn the questioning over to Mr. Lloyd.

MR. LLOYD: Thank you, Ms. Shaw.

Good morning, everyone. My name is Troy Lloyd, and I am chairperson for Panel 1, hazard communications and emergency responder preparedness for the initial emergency response. Before this Panel starts their round of questions, I understand that Mr. Deutsch and Chief Drabick have opening statements.

Mr. Deutsch, please provide your opening statement.

OPENING STATEMENT ON BEHALF OF NORFOLK SOUTHERN

MR. DEUTSCH: Good morning. My name is Scott Deutsch, and I've been a regional hazardous materials manager for Norfolk Southern since October of 2015. Before that, I was a first

responder with the County Emergency Services Agency and have served in public safety for 40 years with 22 years of experience in the chemical industry.

Every day I work alongside my Norfolk Southern colleagues to ensure hazardous materials compliance facilitated first responder training and improve our emergency preparedness response efforts. I want to begin my expressing my regrets for the residents of East Palestine and the surrounding communities.

Shortly after the derailment, Norfolk Southern personnel were deployed to the scene and have been on-site ever since. We responded swiftly. Within approximately an hour of the derailment, our folks were on the site and provided incident commander critical information to assist with the response.

I received the call from my supervisor within minutes of the derailment, and immediately left my home for East Palestine. While enroute, I deployed our trusted hazardous materials contractors and was in communication with the incident command to provide consist information to help the incident commander direct the first responders to other relevant resources that they and we could do our jobs and help ensure the safety of the community. Norfolk Southern, along with everyone involved in responding to the incident, focused on preserving the health and safety of the community and first responders.

As a former assistant chief operations in training for a public emergency service agencies, I understand the risks our

first responders face. This is why shortly after I arrived at the scene of the derailment in East Palestine, I asked the incident commander overseeing first responder efforts to pull back first responders who face significant danger from numerous railcars that could have been discharging flammable materials or other chemicals without warning in an environment with an ignition source already present.

For example, vinyl chloride is an extremely flammable compound, and the tank cars were engulfed in pool fires. With first responders, some of whom were in aerial baskets near the fire, there was a potential for significant loss of life. I am grateful to the incident commander for his leadership in keeping the first responders safe.

Like everyone else involved in responding to the derailment, Norfolk Southern and its contractors were forced to react rapidly and thoughtfully based on the circumstances unfolding rapidly at the scene. We had to provide advice to decision makers, drawing on the technical information and resources available and our combined decades of emergency response training and experience.

The advice of Norfolk Southern and its contractors to the unified command on these tank cars represented our best effort to weigh the risk we saw in front of us and make recommendations accordingly. From the night of the accident through the end of the immediate incident response, we consistently shared our observations and concerns with the incident commander and unified

command and followed prevailing guidance.

We are grateful for the leadership of Fire Chief Drabick, Governor DeWine, Governor Shapiro, Mayor Trent Conoway, Columbia County EMA Director Peggy Clark, and the courage and heroism of first responders from East Palestine and the surrounding communities.

At this time, I am glad to answer any questions the Board has about this incident.

MR. LLOYD: Thank you, Mr. Deutsch. Chief Drabick, please provide your opening statement.

OPENING STATEMENT ON BEHALF OF EAST PALESTINE

MR. DRABICK: Thank you, Mr. Lloyd. Good morning. I'm East Palestine Fire Chief Keith Drabick. Thank you for providing me with the opportunity to participate in this proceeding and begin with this statement.

I am sure I speak for all of us in the room and in East Palestine when I say that none of us would prefer to be here today. The train derailment has, quite frankly, changed East Palestine forever. It has disrupted lives, impacted businesses and created uncertainty. Thankfully, no one was killed and the damage to property was minimal. For that miracle, I am grateful to my fellow East Palestine Fire Department members, all of whom are volunteers.

To the East Palestine Police Chief James Brown and his officers, to our village's other first responders, and to the

first responder from many other departments in our region who came to our aid, your training, professionalism, and commitment to saving lives shown through, and you are an honor to your professions.

Thanks also goes to collective local, state, and federal incident response team for their extraordinary effort during these chaotic days and nights in February. I was the incident commander, but I can assure you that with the combined expertise at our command center, my role was more of a coordinator. If not for the collective judgment of the men and women on that team, we would be having a very different discussion today about a very different outcome.

The reason that the incident response team was able to produce the results it did for the people of East Palestine is because of one word; consensus. On decisions both big and small, the team pulled together and shared their expertise, knowledge, and training, reached a conclusion, and then went forward together. Even on a decision as challenging as the decision to vent and burn, it was a team decision. Everyone from our Governor, Mike DeWine, to local officials contributed their voices to that discussion. And in the end, the decision to vent and burn was agreed to without dissent as the least bad option. As the only option for avoiding a much more severe explosion, fire, and far-reaching contamination.

East Palestine will be living with the impact of the

derailment for many years to come. Questions about health, water, property values, and the continued economic viability of our beautiful village will remain. While these proceedings and the NTSB's work do not directly relate to some of those questions, it is my hope that through this process, some questions can be answered. And with those answers, it is my hope that our collective focus can move forward, and our energies can be applied to working together to solve other challenges.

I appreciate the NTSB for taking the rare step of conducting its hearing here in East Palestine and that the Village has been afforded the status of an initial party to the proceedings today.

I look forward to the information that will be gathered and the testimony that will be presented. I look forward, as well we all do, to the NTSB's final report and its findings.

The residents of East Palestine want to know how this happened, how and when it will be fixed and what actions will be taken so that it never happens again. In East Palestine and every other community, I hope that today's hearing will provide us with additional information needed for us to learn, process, heal, rise, and grow stronger. Thank you, Mr. Lloyd.

MR. LLOYD: Thank you, Chief. Panel 1 will now begin the round of questions to the witnesses. I will now hand it off to Ms. Lake to start the panel questions. Ms. Lake?

PANEL 1 EXAMINATION

MS. LAKE: Thank you. I'd like to start with Detective

Haueter. As the first responder to arrive on scene for the initial dispatch of an explosion, can you tell me when you first realized a train was involved and what your response actions were from that point forward?

MR. HAUETER: When I first arrived on scene, the call initially came in as an explosion behind Leake Oil in downtown East Palestine. We realized that that was not accurate, and then when we located where the train had derailed, and the fire was actually at Leake Oil on the other end of East Palestine.

When we arrived there, it was fully engulfed. It was burning hot and angry. And at that point in time, we notified our dispatch to advise the fire department that whatever was on fire behind that Leake Oil was fully engulfed.

MS. LAKE: At what point did you think there may be hazardous materials involved?

MR. HAUETER: It's always a concern, you know, when you have a train. Obviously, where the derailment occurred and where the train was located, the time of night, it was dark, the fire, there was no possible way to determine what was, you know, on fire and what cars were derailed. So, obviously, that's a concern.

I personally did not know that there was any hazardous material or chemicals. I assumed when the initial one-mile evacuation was ordered that that was going -- that it involved chemicals, obviously. That's not going to be for a fire, that's not going to be for an explosion. That's going to be for

chemicals. So, I assumed it wasn't until late that night or early the next morning that I learned myself that there was actually, you know, what was contained on those cars.

MS. LAKE: And what actions did you take when you realized that there was a train involved with the explosion? Did you seek out any personnel from the train at that point?

MR. HAUETER: Correct. When we first realized that there was a train, attempted to find the engine car so I could, you know, determine what was actually on those cars. Obviously, the fire department was arriving on scene. I sent an officer to the west side of town. I attempted to locate the engine on the other side of the tracks.

MS. LAKE: And you had mentioned previously that you initiated that first evacuation of residents. Can you tell us how you implemented that, why, and how that was communicated?

MR. HAUETER: Correct. The tracks are paralleled by East Clark and Taggart Street. After the fire department arrived on scene, there was some time that had passed. At one point I noticed that the fire was spreading on the cars. It was starting to spread west. The cars were starting to pop off on fire, and I radioed one of our patrolmen and I said we need to discuss getting the residents out of East Taggart and Clark Streets. You know, their backyards line those tracks, so that fire, you know, if those cars continued to catch fire, that we would be able to get them out of their residences.

And then, we at Columbiana Police Department and we had the State Highway Patrol arrive to assist us on those two streets. I assigned two of our officers to Taggart Street. I had radioed our dispatcher to call out additional of our personnel, and then I brought some of our personnel with me on Clark Street, and we started going door-to-door to evacuate those two streets at that particular time.

MS. LAKE: And was this also communicated through the incident command on scene?

MR. HAUETER: As far as did I communicate it with them?

MS. LAKE: Yes, that the evacuation was occurring?

MR. HAUETER: My personal radio that I had, I was unable to communicate with the fire department. I do not know if they were aware we were doing that at that time or not. I don't know if they could monitor that or dispatch relayed that to them. That I am unaware of.

MS. LAKE: Okay. And can you tell me what kind of training have you had in the past, and how has that training prepared you for this type of event?

MR. HAUETER: I spent 20 years with the special weapons and tactics, the SWAT team in this county. I've been on the job 30 years. I've had extensive trainings in, you know, various areas of law enforcement. However, I don't think one specific training would actually cover an immediate evacuation of, you know, what became a one-mile radius of a town. I think that just comes with,

you know, common sense, experience, and just being able to react on the fly.

MS. LAKE: Thank you. I'm going to turn it back to Mr. Lloyd.

MR. LLOYD: Thank you, Ms. Lake.

Chief Jones, I understand your HAZMAT team was dispatched as mutual aid to this accident. Can you tell us your initial response actions, including how obtained information about the hazardous materials that were involved?

MR. JONES: Yes, sir. We were in contact at 21:24, my officer in charge of the day called me, as it was my off hours. So, we usually respond with a two-person rapid response team just to gather as much information as we can before our full HAZMAT team arrives because it takes them a little bit longer with the larger trucks.

MR. LLOYD: According to the information that you had on the initial response, were the firefighters on site equipped with the appropriate protective clothing and gear per the emergency response guide?

MR. JONES: That is correct. They were in full firefighting PPE.

MR. LLOYD: Okay. Thank you.

Chief Brewer, same question. I understand your HAZMAT team was dispatched as mutual aid as well. Can you tell me your initial response actions, including how you became aware of the

details of the train consist?

MR. BREWER: Sure. We were notified by Columbiana County EMA to assist them with the HAZMAT, actually the train derailment, with our foam units, which we brought to the scene. We were not a first response, if you will. We got there at 10:30, so well after the incident. Again, we were just, basically, mutual aid to assist East Liverpool in their HAZMAT.

MR. LLOYD: So, a combined HAZMAT team effort between East Liverpool and Beaver County?

MR. BREWER: Correct.

MR. LLOYD: Okay. So, according to the information that you received on the initial response, were the firefighters on scene equipped with the appropriate PPE according to the emergency response guide?

MR. BREWER: Yes.

MR. LLOYD: Okay. Thank you.

I will now hand it off to Mr. Dougherty.

MR. DOUGHERTY: Thank you.

Questions for Mr. Deutsch. Can you tell us when you received the train consist after the initial notification of the derailment, and what did you do with the information?

MR. DEUTSCH: When I received the call from my supervisor, I already have a go bag and everything ready to go. I got in my vehicle, he e-mailed me the consist, I had the consist at that time. I started driving towards the scene. I received a call

from Director Clark. I pulled over. I then e-mailed her after talking to her the consist so that she would have it at the scene, and then she had that information that was probably 10, 15 minutes into my trip to East Palestine.

MR. DOUGHERTY: Thank you. So, can you tell us what your actions were when you arrived at the derailment, and what is your standard protocol for such incidents?

MR. DEUTSCH: So, when I received the call from my supervisor, I notify my contractors first. I base that on the closest contractor to the incident and their qualifications and their abilities. In this particular incident, I notified SPSI because they have industrial firefighters. I was informed there was a large fire. They also have NS's foam trailer. So, I needed the equipment that they have. I requested our foam trailer and firefighting equipment and to send a representative out ahead of all of that equipment as other resources are deployed.

I then called an Enviro Serve and HEPACO and other contractors the railroad use that are in the nearby area in Ohio and right across the border. Their supervisor lives in Beaver. And they were to handle any type of runoff that was going to come off of the actual firefighting at the scene of the derailment. They were staged outside the area due to the fires until I could get on scene to deploy them.

MR. DOUGHERTY: Thank you. And was command and control clearly established when you arrived on scene, and can you also

describe your coordination with the incident command structure?

MR. DEUTSCH: When I arrived on scene, one of our sentinels from mechanical was already on scene working with the incident commander with consist information. I believe our transportation supervisor was on scene, also. I called them to find out what their location was, which was by Leake Oil. I met up with them at that command post. There was several different firefighters right around there. Then I went to size up the scene from there.

MR. DOUGHERTY: Okay. And with that, I want to talk about your interview a little bit. Your interview with the NTSB, you told us that when you arrived on scene and assessed the ongoing response involving the hazardous materials, and you advised the firefighters to pull back. Can you expand on that and how that information was disseminated to the rest of the scene?

MR. DEUTSCH: Yes. When I got on scene, I met with incident command and our people, I then did a, wanted to do an assessment of the scene, what was going on at the actual scene. So, I stayed a decent distance away from the fires. I took one of the firefighters there, I believe it was a lieutenant or a captain, that had a radio so we could communicate back if I saw something happening that I didn't like that he could tell command right away.

We then headed down towards Pleasant, in that direction, as I checked out the scene. I saw individuals in aerial platforms over the fire spraying water on the cars and stuff. It was about seven

degrees, as I remember at that time. I had concerns with that on getting them out of those aerial platforms, because if they had to come down the ladders, if they froze in place, I've operated aerials that have done that in cold weather, so I had concern with that.

I saw the pool fire that the cars were in. I did not see any pressure fires yet, so I knew I still had just a pool fire and the cars were heating up. However, the amount of time it takes me to drive from my residence to this location was about an hour-and-a-half or so or hour and 40 minutes, somewhere around there. So, any thermal protection on those cars is rated for a hundred minutes, so we were getting past that time frame.

So, with the large pool fire, the ditch fire that I saw going along the tracks, I wanted everybody out of there. My concern was the pressure relief valves on any of the tank cars opening up and spraying those firefighters, especially the ones in the aerials because you would not be able to get away. That was my big concern.

MR. DOUGHERTY: Thank you. So, just a follow-up question regarding the train consist. Can you tell me who Norfolk Southern sent to the train consist to besides Columbiana County EMA?

MR. DEUTSCH: The two, the transportation supervisor and the mechanical person on scene that I met had the train consist and was showing people the train consist at that command post, and then I e-mailed it to Peggy. I'm not aware if anybody else got it

or requested it from our dispatch center in Atlanta. Because they can also request it that way from, like, a 911 center. I don't know if that was done or not.

MR. DOUGHERTY: Okay. Thank you. My last question, can you tell me about the conversation leading up to the one-mile evacuation for the residents that followed?

MR. DEUTSCH: When I was in route, I talked to Director Clark, and she had the ERG information, they had a placard with the vinyl chloride car, and asked me what I thought of the one-mile evacuation in the ERG. And I said that's the guidance. I would follow the guidance that the ERG says.

MR. DOUGHERTY: Thank you.

Pass the questioning off to Mr. Lloyd.

MR. LLOYD: Thank you, Mr. Dougherty.

Chief Drabick, please describe your fire department's preparedness for a trail derailment with hazardous materials in your community prior to this accident.

MR. DRABICK: I don't think you can ever really be prepared for something like this. Members have done training; we have minimum requirements that are governed by the state that all of my members meet. We have several months prior to this, did do a mock tabletop drill in East Liverpool under the direction of the EMA and East Liverpool's HAZMAT team on a train derailment in that area.

My people are HAZMAT certified to the minimum, the awareness

level, more than half are operations, and a portion are HAZMAT techs, as myself.

MR. LLOYD: Thank you. What preparedness activity have occurred since the accident, such as additional training with NS or additional fire department training?

MR. DRABICK: There has been a lot more training since the derailment. It's never good to be reactive, but sometimes you have to be. Taking advantage of several classes provided by Norfolk Southern and have several other classes scheduled in the near future, including September and October.

We have access to the AskRail app now to get the consist quicker. We've taken advantage of classes they've had in Bellevue and other areas as well with all the other members.

MR. LLOYD: So, what additional training is needed at your fire department to hold the positions as a deputy fire chief or assistant fire chief? Is it more advanced training level once you start going up that, that ladder?

MR. DRABICK: Yes. There should be more training and more advanced training. I've only been here since February of '22. Changing those protocols, procedures, job descriptions has been what I've, part of what I've been doing since I arrived. Additional NIMS classes, additional HAZMAT classes, I've had my senior officers participate in all of those since my arrival here.

MR. LLOYD: Thank you. Please describe your department's familiarization and training efforts in utilizing response

applications, such as AskRail, DOT Emergency Response Guide, and other response applications such as Wiser and CAMEO. And if you do have those applications, is your apparatus equipped to obtain that information through some type of mobile data terminal?

MR. DRABICK: Thank you, Mr. Lloyd. Yes, all of our apparatus are equipped with iPads that have the ability to access the mobile ERG, Wiser. We do not have CAMEO on those. We now have AskRail. When I arrived at the department, we did not have access to that. I only received that after the fact. But everybody is trained how to use the ERG and properly be able to recognize that and access the Wiser and use Wiser.

MR. LLOYD: Was a hot wash conducted? And if so, was PPE addressed as being appropriate for this accident? And also, describe any lessons learned that you've obtained from this accident.

MR. DRABICK: Yes. A hot wash was done with the senior officers initially within the preceding days, and then with our department and members of other mutual aid departments. PPE was, according to the ERG, sufficient for what we had, and the ERG is the standard that we and everybody else in the nation goes by.

And the next part of your question again, sir?

MR. LLOYD: Any lessons learned as being that incident commander on this accident and anything you can bring to the Board and this Panel?

MR. DRABICK: Lots of lessons learned. Never have enough

training, and you never have enough manpower.

The majority of the fire departments in this country operate as volunteer fire departments. Men and women working full-time jobs elsewhere, sacrificing their time coming in the evenings or days if they're off. That's detrimental to the country. I applaud them. I've been a volunteer firefighter for almost 40 years myself.

Standards need to change in the country. Standards need to change in our Village. Having that fire protection, you know, the minimum standards of four people through the NFPA, that needs to change to protect our communities. Not just East Palestine, not just the other local communities, but every community in this country needs to have that emergency services, both fire, police, and EMS available to them and, you know, training needs to be given.

There needs to be more availability for training. We have, as I said, a large volunteer population. It's hard for those guys to go take classes during the day. Weekend, evening classes need to be offered, and that's not the norm. That needs to change. Additional manpower, additional funding from the federal government needs to be given to support this application.

MR. LLOYD: Thank you. Chief Dan Swords, please describe the State of Ohio code on firefighter training hours and certifications.

MR. SWORDS: Yes, sir, Mr. Lloyd. So, for volunteer

firefighters, there's actually a statute that limits the total amount of training to 36 hours maximum. As a result of that, with that time limit, there's not an ability to incorporate all of the requirements in NFPA 1,001, which is the standard for training for firefighters. In the Firefighter 1 program, the training hours are significantly more in that there's 132 hours of firefighter-specific related training, and there's also at least 24 hours of hazardous materials training. The volunteer firefighter course does not include any hazardous materials training or any type of IDLH training, including live fire.

MR. LLOYD: So, volunteer 36 hours versus career is 200 hours, is that correct?

MR. SWORDS: Yes, sir.

MR. LLOYD: Okay. So, for the volunteer firefighter certification advanced training, such as HAZMAT response additional incident command courses, things of that nature, how was that developed? Was that a local development through that fire chief or is that through the state?

MR. SWORDS: Yes, sir, it's a local issue. The initial certification training, again, does not include the HAZMAT. Once they're certified, it's upon the chief of that department to provide the additional training for those individuals.

MR. LLOYD: All right. Thank you. I'll now hand it off to Mr. Dougherty.

MR. DOUGHERTY: Thank you, Mr. Lloyd.

The next set of questions I've got are for Mr. Deutsch. Can you detail Norfolk Southern's protocol for the relay of consist information to first responders in the event of a derailment?

MR. DEUTSCH: First, we'll start with the train crew. The train crew is trained to hand off any first responder, the consist off to the first responders. They can look at it, they can make copies of it, and they have the ability to e-mail it to them. If they have an iPhone, they have the ability to Dropbox it to them right at the scene. Their protocol is to, if they see fire or large vapor cloud, to remove their self and locomotive from the scene and go to a safe location. That information can be obtained at that location.

A 911 Center can call and get consist information from our police communication center in Atlanta. The way we did it for this incident where I get it, as soon as the derailment happens, somebody e-mails it to me, I can send it to the first responders if I'm contacted by the first responders.

One of the quickest ways to get the consist information is the AskRail app that all the Class 1 railroads paid into to develop this app. If I was the officer in charge, I'd be able to get right out of the engine, I need one car number from that train, punch it in the AskRail app, and I would have the consist by hitting the top right corner. It says, "view train" and it gives you the consist for the whole train. Anything that's HAZMAT is in red, and you can determine by looking right and left of

upright cars and know every car that's in that derailment. That would tell you how many are HAZMAT, how many are non-HAZ, what type of cars they are.

MR. DOUGHERTY: And so, can you tell me what the accuracy is of the AskRail app?

MR. DEUTSCH: I've always found it to be matching our consist. I don't know of any deviation from that.

MR. DOUGHERTY: Okay. So, my understanding is a lot of first responders do not have the AskRail app, which I'm sure that this is going to change that. In the event that the AskRail app is not available, what is the best method for responders to gain access to that, to the train consist on scene?

MR. DEUTSCH: I would go with the app first. If the app didn't work, I believe their dispatch center can call NS, and then they would be able to get that consist e-mailed right to the dispatch center, who can then send it off to the field to the command post or look, actually use it in the 911 center and give that information over the radio to the incident commander, however they wanted to do that.

They can, if they didn't have the numbers or didn't have that built in their system, the FRA has a grade crossing app. You can use that app. It tells you whose rail that is, when you hit the little cross buck, it will tell you right on there that it's NS or whoever it is and has our phone number right there to our police communication center. So, you can call that number and get the

information about the consist sent to you, also.

MR. DOUGHERTY: So, do you know if the train crew interacted with first responders in this incident at all?

MR. DEUTSCH: I do not have any information on that.

MR. DOUGHERTY: Okay. So, in the event that the train crew sees the fire and they disconnect, what is their protocol after they disconnect?

MR. DEUTSCH: They'll disconnect, they'll go to a safe location. In this case, they went a mile away based on the ERG that they were using. And they will wait there for a transportation supervison or first responders.

MR. DOUGHERTY: Okay. So, the train crew is, does not necessarily seek out the first responders to hand the train consist? It's the first responders that need to come to the train crew in order to gain the train consist information recommendation, is that correct?

MR. DEUTSCH: Correct. They have to stay with that locomotive and stay at that location.

MR. DOUGHERTY: I think the issue is there's a lot of the time, train derailments happen in a very remote location, and the AskRail app isn't always going to be there, communications is not always going to be there, so we can't rely on the AskRail app. So, I think that there has to be another way on site.

The emergency responders don't know how to seek out the train crew to gain that consist information. It's imperative that that

information needs to get to the first responders as soon as possible, not via communication application but as a quicker method, which I think is really paper in hand in this incident.

MR. DEUTSCH: Yeah. So, Norfolk Southern train around 4 to 5,000 first responders a year with our safety train in-house station training. During that training, we go over a hazard communication section. In that section, we go over how you can get the train consist from the crew, the different ways that I explained earlier. They can Dropbox it, e-mail it to the crew from that device if they go to the train crew.

If they can't go to the train crew, if they have in their CAD system, this is NS's rail, they can call our police communication number, and they would be able to give them the consist as soon as they called that number.

MR. DOUGHERTY: Okay. Thank you. So, my next question, the final derailment resting place was a familiar, accordion-style layout, which is typical in many derailments. It's also been computer modelled, conducted by the DOT.

Can you explain how Norfolk Southern, the first responders and the response contractors identified the HAZMAT cars and matched it against the train consist to properly assess and respond?

MR. DEUTSCH: So, they have, due to the heavy fires and that, a lot of the cars were damaged. There was drone footage from Columbiana County, and we used that drone footage to help identify

some of the cars.

When I got on scene, I was told the derailment was between certain cars, and I knew what HAZMAT cars were in that block of cars. And that's what I saw all accordioned in that pool fire. You can identify them if there's no markings on the car. If you can identify the silhouette of the car, you can identify a pressure car, a non-pressure car, and we teach that in our trainings. When we go outside from our classroom session, we start right off with doing identification of railcars, and we have no placards on the railcars. We have nothing. And we have to answer, we ask you questions what type of car is that, what type of car is that, and then we go over that's a pressure car, good chance flammable gas. If it's this size car, like the 105 is a smaller gas car, we go over what it could potentially have in it, you know, chlorine, poisonous hazards, things like that.

We do all of that in a training with no placards, no nothing. So, if I got on scene, I didn't have any of that information. I've got a general service car, it could have some type of flammable liquid in it, or it may just be corn syrup.

So, we teach them to identify that if they have no other information just by seeing that visually, and then we get into all the other placards and identification on the actual cars.

MR. DOUGHERTY: Are you able to give a rough estimate on how long after the derailment occurred that NS and its contractors are able to identify all of the hazardous materials located on the

train?

MR. DEUTSCH: I don't have an exact timeframe of when that occurred. I knew what block of cars were derailed by the cars that were still upright, and that they were in there. The exact location of each one, I couldn't tell you that right now without researching it.

MR. DOUGHERTY: Okay. So, moving on, I'd like to talk a little bit about training and what kind of training does Norfolk Southern provide to first responders to help prepare for an incident like East Palestine, a train derailment, or any hazardous materials incident?

MR. DEUTSCH: Norfolk Southern has a pretty in-depth training program starting with us training 4 to 5,000 people a year. We came out in 2016 with our safety train. It has a DOT 117 car, it has a 105, it has the 112, we have flat cars. We have box cars in our classrooms, so we do an audio-visual program first, and then we go out on the flat cars. We describe all the different protective housings on the flat cars. We also have the ability if we have HAZMAT teams and other teams to practice putting the different kits on the cars to stop leaks. We do the silhouette, the walk through of the tank cars, we explain everything about the tank car, it's thickness of metal, why it's this way, thermal protection, insulation, and we have a locomotive. We go over locomotive fires, and then everybody goes inside to see it.

We also discuss if one of our workers was sick, how would you

get them out of the locomotive. We discuss that training on how to remove them safely. In our presentations, we do everything from all the different cars that are on the railroad identifications, we talk about hazardous communications, how to read a consist, we have an entire module on the AskRail app, how to get it from the app store, how to load it on your phone, and how to use it and the different features that it provides. We go through all of that.

We also do tabletop exercises which helps you design, I mean, practice setting up a large command structure that you normally aren't used to for just a basic house fire. The tabletop that we had in October was to practice that. Setting up, you know, an ops table, logistic planning section, unified command, working with the railroads, working with all the other entities in your county, what you might have to do in a big incident. That's what the tabletop focuses on.

We also do full scale exercises where I set the train up and I make different things leak, I have smoke machines, and the HAZMAT team and the fire department go through that evolution. There's a very large one planned in October in Pennsylvania that's going to go use two different counties, and we're going to do a tabletop at one of the EOC, and we're going to do a live drill at the train that matches the table top.

So, we do a lot of training in the 22 states that we operate. It's just a matter of moving the train to each location in time

frame, you know, so many a month.

MR. DOUGHERTY: All right. Thank you. So, I'd like to talk a little bit more about the AskRail app since it's highlighted. Can you explain the AskRail application and its purpose.

MR. DEUTSCH: So, the AskRail app was developed to get consist information as soon as possible to first responders. Like I explained a little bit earlier, if you have that app and you're the officer in charge on the engine, the first arriving engine, right away you'll know what you're dealing with as long as you have cell service. Okay? You know, everything we do nowadays, as long as you have cell service. If you have that app and you have it up, you're able to punch in the one car number to start the process. It will give you information on that one car. If you hit "view train," it will then give you information on the entire train and all the cars in the consist.

On that consist, you can hit, if it's red, it's a HAZMAT. So, when you hit that, that particular car, it will pop up that car's description. It will tell you what type of car it is. It will have a placard. If you hit that placard, it will go right. It will ask you if you want an isolation distance under ERG guide. You hit the ERG guide, and it tells you all your protective actions, what to do if it's on fire, what to do if it's a spill, it matches the ERG, it's even the same color pages.

Then it has, if you want to do isolation distances, it asks you certain questions if it's on fire, it's a large spill, if it's

at night. And then when you hit that, it will give you your actual isolation zone.

If you're at your command post, if you can actually then touch the screen, slide that zone to where the actual derailment is so that you're in a safe location doing this, bring it down to the derailment site. Then, as the incident commander, that would already start telling you what street you might have to block off, stop access into that area around that zone.

And it has all the railroad's phone numbers in, it has additional information, a field guide, the tank cars, the information is in there. You can get all that information inside that app, also.

MR. DOUGHERTY: And so, can you explain how someone or first responders, or who is the AskRail app available to and how someone can get the AskRail app and sign up for the application.

MR. DEUTSCH: So, to sign up for the app, you would just go to the app store and download it to your phone. You will fill out the information or request your supervisor or chief or lieutenant whoever is above you as a firefighter or police officer or EMS, and that information will put their e-mail address in when you fill out the entire process.

That, then, will come to us, and we will view it, and as long as you're a first responder and it's verified, you're a first responder, then we approve it and then you have access. It will send you a message that you have been granted access.

MR. DOUGHERTY: So, just to be clear that the application is available to first responders and not available to the public, correct?

MR. DEUTSCH: Correct.

MR. DOUGHERTY: Okay.

MR. DEUTSCH: It's vetted based on, because it's security-sensitive information that we're giving out on that app, and it's to be used for first responders. It is monitored, and we get a read out every morning at 6:30 in the morning of the active users that actually ran cars.

MR. DOUGHERTY: Thank you for that. And that concludes my questions. I will turn it over to Mr. Lloyd.

MR. LLOYD: Thank you, Mr. Dougherty. The question to both Chiefs Jones and Brewer, and I'll start with Chief Jones first. Please describe your department's familiarization and training efforts in using response applications, such as AskRail, DOT's Emergency Response Guide, other applications such as Wiser or CAMEO, as responding HAZMAT agencies, how do you guys use that stuff and what's your familiarization with it?

MR. JONES: Yes. Our department, as the HAZMAT team, we use all those apps that you've mentioned. Plus, our firefighters go out to the CERTCI training center in Pueblo for, they were out there for crude oil training and highway emergency response training. We do, like I say, use CAMEO, it's on our MDT's, along with AskRail, ERG, and Wiser. We train on those periodically.

Maybe once every six-month period we go through scenarios where they have to train on those. AskRail does have a section that you can use for training and not have to go live with it.

MR. LLOYD: Any problems with using those applications, technical issues, you know, other HAZMAT calls, while trying to obtain information?

MR. DEUTSCH: Yeah. We have not had any complications or problems using those apps when we've needed them.

MR. LLOYD: Same question, Chief Brewer. Your familiarization with the application, AskRail, DOT's Guide, Wiser, CAMEO, things of that nature?

MR. BREWER: Similar to the Chief's answers, again we send our guys, our team, out to Pueblo. We partner with industrial companies in a county, we've been through the safety train training, Norfolk Southern training, EPA training, National Fire Academy. We train above and beyond the standards set forth by PEMA, Pennsylvania Emergency Management, who certifies hazardous materials teams in the commonwealth.

As far as the apps, we do use the CAMEO, the Wiser -- well, we used to use Wiser, which is now not being updated. AskRail. Unfortunate to have some, that's a combination department because our full-time county employees are also on HAZMAT team, and on their devices they all have all of the apps, and we also bring the command post with us to, which also has all the research material on it, too.

MR. LLOYD: So, Chief Drabick provided some good details on the lessons learned that he gave the Board and this Panel. With the responding HAZMAT agencies, what lessons learned have you guys obtained and how was that pushed to your department? Go ahead, Chief Jones. Yeah, go ahead.

MR. JONES: Yeah. After every incident, we always have a hot wash to discuss what went right and what went wrong. And yes, we learned we needed better maps of areas that we are going into, especially that evening, from some of the other first responders we talked to. We thought the water was going toward State Line Lake, which, in fact, it was going the opposite direction. So, we need to have updated maps, better GIS capabilities in our department.

MR. LLOYD: Same question, Chief Brewer. Your HAZMAT teams, lessons learned that you obtained, and, you know, what did you go back to your department and additional training and things of that nature?

MR. BREWER: Again, I think as both chiefs said training is probably the biggest thing that we looked upon. We do an A, after action report, also, of our team's response to the assistance of East Palestine. And training is probably the biggest one.

Equipment, what other equipment do we need or would we need for incidents like this. However, this was a big incident. Whatever we had wasn't enough, and whatever East Liverpool had was probably not enough. So, mutual aid, relationships with other

teams throughout the region is big, also.

MR. LLOYD: Thank you. Chief Drabick, does Columbiana County have standard operating guidelines or procedures, or some type of Memorandum of Understanding for the out-of-county emergency response agencies?

MR. DRABICK: Yeah, there's MOUs in place for that, for through the EMA.

MR. LLOYD: Do these outside responding jurisdictions have the capabilities of communicating with your fire department units or emergency response centers, such as radio inoperability?

MR. DRABICK: Some do, some don't. Communications is a ginormous issue in this county. There are several P-SAPS. There's not one centrally located 911 center. There's not one centrally utilized frequency in the county, or in the neighboring counties for that matter. So, communication is always an issue for us. Our dispatch center, for example, has one dispatcher on at any given time, and that's it. So, an incident like this, they were being overwhelmed with radio traffic, phone calls, trying to make phone calls, receive phone calls, get other assets in place. Our dispatch center dispatches three fire departments and two police departments. So, something of this magnitude is overwhelming to them, and they rapidly got more workers in there to help, but communication is a big issue. A centralized 911 center would be a great step forward to solving the communication problem.

MR. LLOYD: So, describe with the radio inoperability problems, how does that effect a major accident like you just had in East Palestine?

MR. DRABICK: It's a ginormous problem. As I believe Scott was discussing when he arrived, there were several fire chiefs standing in one location. Part of that was to overcome communication issues, being able to communicate with different counties, different entities, different states, all running on different radio frequencies. And our area is not the best for communications as far as repeaters or being able to access frequencies. So, it's a struggle. It's a big struggle.

MR. LLOYD: So, does the County have any capabilities to do any type of patch-in capabilities, at least for the first alarm assignments such through their dispatch center, any way to patch in the outside jurisdictions?

MR. DRABICK: Not that I'm aware of for our dispatch center. We don't have that capability. Some of the other dispatch centers may have that, like, the sheriff department dispatch center, that dispatches the majority of Columbiana, or a big portion of it. But we don't have that capability. We have different frequencies in our radio for our commonly used, mutual aid departments that we can speak with them. But as an overall communication, no.

MR. LLOYD: Thank you. Chief Dan Swords, again, Chief Drabick describes some needed changes in a way where we're training firefighters in the state of Ohio. What would it take to

increase that volunteer firefighter to meet that minimum NFPA consensus standard?

MR. SWORDS: As I stated before, it's in statute, so there would need to be a legislative change to potentially increase the amount of hours, or at least not make it a maximum of 36. Make it a minimum. But there has to be some sort of change legislatively before we can move forward with any other training that can be provided to volunteer firefighters for their initial certification.

MR. LLOYD: Thank you. Mr. Deutsch, referring back to the tabletop exercise that you did, who all attended that training? Was it multiple fire departments throughout the area?

MR. DEUTSCH: Yeah, it was the fire departments and that section of Columbiana County. They attended, HAZMAT team Chief Jones runs, they were there. That was the individuals, I mean, the individual departments I believe that were there. I don't know each name of them, but it was that half of the county.

MR. LLOYD: All right. So, was it well attended according to other training scenarios you've had in other jurisdictions?

MR. DEUTSCH: Yeah, I thought it was. We got to go through the incident, we got to set up the different sections, we reviewed it. Everybody got to go around the room and say what they learned. Anything, any takeaways they had from it. I thought it was a very good training for everybody.

MR. LLOYD: That's all I have. Mr. Dougherty, Ms. Lake, any

questions?

MS. LAKE: No further.

MR. DOUGHERTY: I just have one follow-up questions for Mr. Deutsch regarding Norfolk Southern's HM-1 guidebook. There was a new revision that was released in April of 2023, which happened or was released after the East Palestine derailment. Was there any revisions to that guidebook as a result of East Palestine? And if so, could you explain?

MR. DEUTSCH: No. The revision actually should have come out a year sooner, but it was delayed because of COVID. The revision was for special permits, for DP units, and some position and train charts. Nothing that had anything to do with the derailment.

MR. DOUGHERTY: Thank you. I have no further questions.

MR. LLOYD: Thanks to each of the panel members for providing your testimony to this panel.

Chair Homendy, this now concludes this round of questions from Panel 1.

CHAIR HOMENDY: Thank you, Mr. Lloyd. We are running a little bit ahead of time, but we are going to take a 15-minute break. We'll return at 11. I ask that the witnesses come back a few minutes earlier to be seated, so thank you very much.

(Off the record at 10:45 a.m.)

(On the record at 11:00 a.m.)

CHAIR HOMENDY: Welcome back. We are now ready to proceed with witness testimony. Each party will have an opportunity to

question the witnesses. Please remember that only the designated party spokesperson may question the witnesses. Due to time constraints, we will have one round of questions. If you believe a second round is warranted, again, please raise your hand. I'll determine whether it's appropriate. If granted, again, the second round will be limited to questions that clarify the record or address a new matter.

Now, turn the floor over to the parties for questioning, and we'll start in the middle with parties from the labor table and proceed to my right. And then parties from the industry table will go last.

Labor organizations, the floor is yours.

MR. FANNON: Randy Fannon, BLET. This is to the first responders initially on the scene. How long after arrival when you were set up until you obtained the HAZMAT paperwork either from the train crew or from NS?

MR. JONES: As the HAZMAT team, we had the consist at 10:23, 22:23. So we were on scene maybe 30 minutes before we had the consist, which I think was pretty quickly when you talk to others that we were able to obtain that quickly.

MR. FANNON: That's approximately two hours after the incident derailment?

MR. JONES: I'm not sure what time, the exact time of the derailment, but --

MR. FANNON: The next question is: Did anyone locate the

train crew and to obtain the paperwork from the conductor?

MR. DRABICK: Nobody from the fire department did. However, in reference to your last question, to my understanding the fire department did have access to the consist within the first 45 minutes electronically by a representative from Norfolk.

MR. JONES: The police department, we did not locate the engine car, the conductor, the engineer.

MR. FANNON: So, no first responder found the locomotive engineer or the conductor after arriving on the scene?

MR. BREWER: Not on our end, no, sir.

MR. FANNON: Thank you.

MR. JONES: Excuse me. We did at the incident command site, another first responder brought up what I believe was the conductor to talk to me. He did not introduce himself, but he had on the vest, and the other first responder identified him as the train conductor. And he was able to tell us which he thought was the last train that was still on the track, so that helped us identify where the derailment started and where it ended.

MR. FANNON: Thank you.

MR. CASSITY: This is Jared Cassity with SMART TD. We represent, along with Mr. Fannon here, the conductors and engineers on Norfolk Southern. I'm curious for the fire chiefs that are present, in your training and education with the railroad, are you all taught what capabilities and knowledge and awareness the train crew has when it comes to hazardous material

placement in the train's consist and what information they have available? Is that something that's relayed to you during the educational process for your first responders?

MR. BREWER: So, again, Norfolk -- I'll speak for my county as the assisting county. We have two major railroads, CSX and Norfolk Southern, which go through our county, which we do training with them all the time.

I believe, this is the last time we had that it was a few years ago with Norfolk Southern, but they do tell us the training that the conductors do, too. But as first responders, as a HAZMAT team, our guys are specifically looking for the consist. However, we can get that, and if that's going for the conductor, that's our main goal.

MR. CASSITY: I may step out here, Ms. Shaw. If I do, please ring me in.

During Mr. Payan's presentation, he made a timeline, and early on in that timeline it shows the train crew separating the locomotive separating from the train for their own safety. And then it shows a few minutes later that locomotive being moved one mile.

Are you all aware that the conductor has an ERG book and that he actually referenced that ERG book given the consist information? And the point I'm getting to is I would argue the conductor was the first person on scene to know what the evacuation radius was and what the proper response should have

been.

And I guess so my question is, are you all aware that he has that detail of information when it comes to the hazardous materials and the ability to communicate or determine an evacuation of radius and then actually follow through with it? And then, if you did not know that, having known that now, would that be helpful in the future? Because in my opinion, the quickest way to get the consist information, assuming the crew is not harmed in the derailment would be through the crew. So, long story short, question is knowing that now, would that be more of a priority?

MR. DRABICK: Are you referring to more of a priority of finding that conductor?

MR. CASSITY: As getting that material, that information. The conductor is going to be right there.

MR. DRABICK: It's always a priority, but what you have to realize is the amount of people available driving a mile down the tracks in an attempt to find him, if that's true where he went, is not manpower able to be done with limited manpower.

MR. HAUETER: And I know on the police department end, we weren't even aware that was protocol of the disconnection in the one mile until this particular incident.

MR. DRABICK: It sounds to me like probably the best thing that would happen is when they disconnect and do that, maybe they should call 911 and tell them that information instead of us

having to go and find them.

MR. CASSITY: That's my next question. Your dispatch center would have been in communication with Norfolk Southern dispatch, is that correct?

MR. HAUETER: Correct.

MR. CASSITY: And they would have had that information from the crew. The only thing your dispatch would have had to do is ask the NS dispatcher where the crew was and they would have told you. That would be the quickest route?

MR. DRABICK: Correct. But in a manpower-driven situation where all hands are needed there at the incident to contain it, small departments like ours, and most volunteer departments in this country, I go back to my manpower statement in we need help getting manpower and staffing, don't have the ability to send people to chase a train.

MR. CASSITY: Can I ask, then, in an instant like that, I would imagine your 911 center was probably pretty full with calls coming in, is that correct?

MR. HAUETER: It was the most inundated I had ever seen it. The 911 line, it was just continually non-stop, radio traffic with the emergency personnel on the scene. I mean, you have lives, bodies on the ground --

MR. CASSITY: Sure.

MR. HAUETER: -- that they are communicating with. They are requesting additional support. And again, you know, there's that

one dispatcher until another body arrives in that seat, so, yes.

MR. CASSITY: Having been a conductor myself for some time, I will tell you that I would be hesitant to call 911 for that reason. I will tell you my father was in law enforcement. I literally grew up in a police car. And, you know, for me, I would be relying upon the dispatcher to utilize their communications with your dispatcher services so that we could do that. To me, it sounds like something maybe we should talk about going further.

But looking towards the future, would it benefit your departments to have prior notification of trains and the hazardous materials that are going to come through ahead of time so that you have a prior notification of those materials?

MR. DRABICK: Ma'am, is it okay if I answer even though the time is up?

CHAIR HOMENDY: Yes.

MR. DRABICK: Thank you. For our department, for example, would it beneficial? Potentially. But you also have to realize that we have a train coming through our town on an average of every nine minutes a day. So, if you were to send me a consist for every single train that comes through our town for every day, 365 days a year at nine minutes a day, can you imagine all the paperwork we would have to go through?

MR. CASSITY: Sure. I'm sure it would be quite a bit. All right. Thank you.

MR. JONES: Yeah, and I agree. That would be kind of

information overload for us smaller departments. I think if they had contact information, those areas that if something would happen as quickly as Mr. Deutsch received his consist, if they could send those consists to contact people at those first responding agencies so they would have that information quickly.

CHAIR HOMENDY: Who is the next person?

MR. CAREY: Good morning. Chief Carey, IFF.

First of all, I'd like to say this was a colossal event, and as you describe pretty well, Chief, no fire department, police department, or emergency management agency could ever train enough and be prepared for this. This is a once in a lifetime. I refer to it as a low-frequency, extremely high-risk event. And I'd just like to start off by saying to all of you that responded, thank you for your service. And I just have a couple of questions.

Mr. Haueter from the police department.

MR. HAUETER: Yes, sir.

MR. CAREY: I'm just curious, do the police officers in East Palestine receive HAZMAT awareness-level training like most police departments are required to have?

MR. HAUETER: I know personally, I think it's each individual officer. You know, when courses are offered, if that particular officer wants to go to a HAZMAT course, we all receive HAZMAT training, you know, in the academy. But for, like, an officer like myself --

MR. CAREY: How many hours is that training, if I may ask?

MR. HAUETER: Again, I've been out 30 years, so I couldn't even remember. But it's maybe four hours in the academy, if I'm jumping back there. And, obviously, we received the updated, you know, yellow books every year. And I know some, each individual officers will attend courses. But as far as anything that's mandated, you know, we have continuing education that we have to take each year, and there's certain areas of that continuing education that are mandatory, but it's kind of left up to each individual officer if they want to take that.

MR. CAREY: Fair enough. And I think we've already from listening to Mr. Swords, there is a problem and I've seen it, and it's not specific to East Palestine or even the state of Ohio. This is a national problem where there just is not enough training that's mandated for, and there's not enough funding like you said, Chief.

But Chief Drabick, and we've spoken before and we've done other interviews, and I understand that you were not the original incident commander. Your Deputy Chief Gorby was.

MR. DRABICK: Deputy Chief Gorby, yes.

MR. CAREY: Sorry for that. But and I understand we've sort of established some facts; I think. That because the train crew followed protocol and disconnected and moved a mile away, the fire department did not have access to the consist, fair enough?

MR. DRABICK: That's how --

MR. CAREY: However, we've been told that at some point Chief

Gorby asked the dispatcher to contact Norfolk Southern, and they e-mailed the consist, and that was about 45 minutes later, is that fair enough?

MR. DRABICK: Yeah, my department first received access to it 45 minutes in, that's correct, sir.

MR. CAREY: Okay. Good. I was just verifying; I have notes from previous interviews we've conducted.

Chief, you mentioned the training levels of your members, and I understand this is a challenge. It's a challenge for us that work in full-time career departments, and if it's a challenge for us, I can imagine it's an insurmountable challenge for volunteer fire departments to get that training.

Are all of your people, or at least most of them, trained to the HAZMAT operations level, like eight hours or 24 hours?

MR. DRABICK: All of our members are trained at a minimum of HAZMAT awareness. I'm in the process of getting the remainder of the department that does not have operations operations-level classes.

MR. CAREY: Glad to hear that.

MR. DRABICK: We conducted a HAZMAT awareness and operations class in conjunction with Columbiana County EMA at our department several months prior to the incident where all of my command staff and a large portion of the membership were able to get both of those classes.

MR. CAREY: Right. And I understand from speaking with Chief

Gorby that he had attended prior to this event training with the railroads, and they introduced the AskRail app. They introduced it, but I guess it was never really followed through as far as any of your members signing up and getting access into AskRail, is that correct?

MR. DRABICK: That's my understanding, yes.

MR. CAREY: Yeah, that's kind of the way I understood it as well.

So, getting back to Mr. Haueter, you mentioned that this one-mile evacuation?

MR. HAUETER: Yes, sir.

MR. CAREY: Do we know who ordered that and how they determined the one mile? And what I'm getting to is, and we haven't got a clear answer in this up to this point, who, if anybody, was using the Emergency Response Guidebook to get information? And we've heard the explanations given to us that there were no placards, there were no papers, so we couldn't look anything up. All the Emergency Response Guidebook is a guide for unknowns. We're trying to figure that out.

MR. HAUETER: When I received notification, it was from our dispatcher that the fire department had requested a one-mile evacuation radius. So, we went ahead with that. At that particular time, I didn't ask who. We were just concerned with getting the one mile evacuated.

I do not know who actually ordered that, and we know where

that comes from other than our dispatcher relayed it was from the fire department.

MR. CAREY: Right. Okay. That's just one of those little things that -- yes, Chair.

CHAIR HOMENDY: Sorry. You're out of time, but if you need additional time, we can talk about that. I just want to make sure others have an opportunity.

MR. CAREY: No, I'm fine. Thank you for your time, and thank you for answering our questions.

CHAIR HOMENDY: TCU, railroad signalmen.

MR. COX: We don't have any questions right now.

CHAIR HOMENDY: Do you want to yield any of your time to the Chief? Chief, you get another five minutes.

MR. CAREY: Thank you. Now that's a union brother over here. Different union, but thank you.

The other question I had was, and maybe I don't know who can answer this question, any of the fire people, was any consideration ever given to the application of foam on all those pool fires?

MR. DRABICK: There was consideration given to it. And in reference to your question to Detective Haueter, the one-mile evacuation radius was determined in conjunction with the command staff on scene, myself on the phone, the EMA in reference to utilizing the ERG and looking at the consist and the chemicals involved, picking out the worst one, which I believe we used vinyl

chloride, and followed the ERG, which I believe recommended a one-mile evacuation based on the condition of the fire and those cars at that point, and that's how that was determined.

MR. CAREY: So, it wasn't practical when given the risk versus benefit analysis. I completely understand that.

And my final question, Mr. Deutsch from Norfolk Southern, when you were on scene, did you have the ability to do face-to-face communications with the incident commander?

MR. DEUTSCH: Yes, I did. As soon as I arrived on scene, our mechanical personnel were already with the incident commander. That's when I arrived. I talked to them, and then said I was going to go do an assessment of the scene.

MR. CAREY: Okay. Great. That's it, Madam Chair. Thank you.

CHAIR HOMENDY: All right. Thank you very much. We'll move onto the federal, state, and local panel.

MR. SCHOONOVER: Thank you, Chair Homendy.

Detective Haueter --

MR. HAUETER: Yes, sir.

MR. SCHOONOVER: Or Chief Drabick, question for you. Is there a written protocol with the Town of East Palestine to determine who is the incident command?

MR. HAUETER: I'm sorry, the last part? I was unable to comp the last part.

MR. SCHOONOVER: Is there a written protocol for determining

who's the incident commander during an incident?

MR. HAUETER: During an incident, it would be, such as an incident like this with a fire, it would be the fire chief or the fire chief's designee.

MR. SCHOONOVER: Okay. Mr. Deutsch, question. Does Norfolk Southern have an emergency response plan, other than the oil spill response plan required by federal regulations?

MR. DEUTSCH: Yes. Norfolk Southern has the emergency response plan on everybody's desktop in the company. It has plans for derailments, for hurricanes, for tunnel emergencies, all different types of emergencies that could occur in our territories. We also have the Emergency Response Guidebook that states what resources we would bring. That is issued with a QR code at our trainings that we do throughout the country, and it has a step-by-step of our process. It shows how we would go into a unified command structure; it shows what the railroad structure is, and how we adapt that to the local municipalities in an incident.

MR. SCHOONOVER: Okay. So, the way that that plan is shared with the communities is through the QR code and the trainings you provide, is that what I heard you say?

MR. DEUTSCH: Yes. We have it on, we have training that's provided on an LMS system on our website, we have trainings set up on the TRANSCAER website that first responders that can attend our class can attend. And then, when they come to the safety train or

we do in-station training, we provide that information and that guidebook. It's in one of the exhibits.

MR. SCHOONOVER: And does your crew instructions call for the crew to leave the train consist with the responders or to maintain it?

MR. DEUTSCH: They are to maintain it, but they can provide information, they can Dropbox it, they can e-mail it to them, whatever electronic means that the first responder needed, they can have screen shots of it, whatever they need. They can provide that consist information.

MR. SCHOONOVER: Thank you. Chief Drabick and Chief Jones. So, the HMEP grants, the Hazardous Materials Emergency Planning grants that are provided to the Ohio Emergency Management Agency come down through the Columbiana County Local Emergency Planning Commission. Do you have access to those training grants?

MR. JONES: Yes. The County has available HMEP grants, and then the state has an HSGP grant that you can apply for funds for training and equipment.

MR. SCHOONOVER: Did you use those dollars, those training grant dollars, prior to this incident?

MR. JONES: The HAZMAT team has, yes.

MR. SCHOONOVER: And those training grant dollars, those HMEP dollars also allow for Columbiana County, the LAPC to do mode and route studies. Are you aware of any mode and route studies that were done, or any discussion of mode and route studies for your

communities?

MR. JONES: I do know they do route studies, but I'm not aware of what has been done and where.

MR. SCHOONOVER: Okay. Thank you. Chief Drabick, you mentioned that you have access to the AskRail app now. Prior to the incident, had you heard of it?

MR. DRABICK: I personally had not heard of it, no.

MR. SCHOONOVER: Okay. Thank you. And I think that covers mine. I'm going to turn it over to FRA?

MR. KELTZ: Okay. Good afternoon. I'd like to reinforce the sentiment that was said, mentioned earlier about our appreciation for what you did, what you went through. It was pretty impressive, and we all owe you a debt of thanks, so thank you for that.

The question for you, I noticed in the timeline, and Detective Haueter, you mentioned that there was, that you ordered when you were first there, an evacuation of around the streets parallel. Was that just based on the proximity to the fire, or was that also in understanding, or did you get a call from the fire department that said you should start to evacuate those folks?

MR. HAUETER: After I first arrived, and then the fire department started, you know, rolling in, I was with them a brief time and, you know, sometimes had lapsed. And then when I was, had left at one point, I had seen fire starting to spread

visually, and, you know, I made that determination with our officer officers. It would be prudent to start getting residences that line those tracks in case that fire started. It was strictly for the fire at that point.

MR. KELTZ: Understood. Thank you. For all of you, for the first responders, is there training or do you understand that there is a sign at every grade crossing, a blue sign, that has a number on it that you can reach, you can reach a railroad if there's an emergency? I'm just curious about the training that the first responders are getting and their understanding of what that sign is and how it can be used.

MR. DRABICK: We're aware that that sign is there and it's the quick way to get ahold of the railroad.

MR. KELTZ: Mr. Deutsch, can, if a first responder called that line, could they request consist information from that line it they wanted to?

MR. DEUTSCH: Yes, that number goes to the police communication center, so they would be able to contact them. Most likely would transfer them over to the operations center, which would then send them over a consist.

MR. KELTZ: Okay. Thank you.

So, Mr. Cassity was mentioning about getting to the conductor and then knowing, you know, being the ones who really do know the best way to proceed. And, you know, of course I fully concur with that.

But given the AskRail app, does that change that equation? I mean, do you feel that that information is, with the information that's available there, that that's complete information and that's really all that you need to make the decisions you need, that you need to do at the time?

MR. DRABICK: I think that's a very useful app. I think it's a quick way to get the information. It's the same information that we would get from the paper copy of the consist from the conductor. However, as we've been mentioned several times, depends on whether you have cell phone service are not.

MR. JONES: Yes, AskRail app is just another tool in the toolbox. It gives us an idea of what's on the total train, but it doesn't tell us where the incident is and what's involved until we get further into it. So, it's just, to us, it's just another tool in the tool box.

MR. KELTZ: And then I heard the conversation before about if you were to get notification ahead of time of every train coming through, it could be overwhelming based on the size of the department and traffic of trains through a community. And maybe the AskRail app helps there.

Is there other information or is there anything else you can think of that would be beneficial or helpful? Chief Drabick, you mentioned more training and more manpower. But as far as information that's available for emergency response, is there anything else that you all can think of that would be, that would

be beneficial and help your cause?

MR. DRABICK: I can't think of anything right off the top of my head. I go back to the, if I get a consist for every single train that comes through my town every day, I'm going to need to hire somebody just to manage the consist coming through due to the sheer magnitude of trains that come through. So, I don't have an answer to that question, sir.

MR. KELTZ: Okay. That's fair. And then another question came up here. And Mr. Deutsch, you had the, the tabletop exercise. Did that include the police departments?

MR. DEUTSCH: Yes, there was police. I don't know what departments that were there.

MR. KELTZ: Okay. Thank you.

MR. DEUTSCH: I can help you on the, how to get other information for not sending the consist every train. Fire departments, police departments, EMA can request commodity flow study. It's on our website at NS. You fill out the document, because it's security-sensitive information. We make sure you're the fire chief and you're the EMA director, and then we will provide that information. It will give you for one year what has come through your town, it will show all the loads. It will start with the top HAZMATs. So that can assist you in planning what does come through your community. It would give you additional information to help you in that planning process.

MR. KELTZ: Yeah, that's helpful. Thanks for that. And so,

for Chief Drabick, were you aware of what -- well, you know that the railroads have to give that information that Mr. Deutsch was just talking about to the state emergency response folks. Were you aware of that and have you, have you asked for that information to get an idea of the types of commodities and the volume that come through?

MR. DRABICK: No, sir.

MR. KELTZ: Okay. That's all I have.

CHAIR HOMENDY: Does the Village have any questions? No questions. Okay. Then we'll go over here to the industry panel.

MR. MCKISIC: Trinity Rail has no questions.

CHAIR HOMENDY: Okay.

MR. GOODEN: Thank you. David Gooden, Norfolk Southern.

First couple questions are for Mr. Deutsch. Mr. Deutsch, as far as training is involved, does Norfolk Southern offer weekends or trainings at night for first responders if requested?

MR. DEUTSCH: Yes, we do. Our training is based on the location that we have the safety train in. If it's more career departments, a lot of time that's in the daytime or different shifts we stay there so we can train different shifts as they come out. If it's a lot of volunteers, there's more nighttime classes set up if it's a volunteer area. And we, if we have a good mix, then we have daytime and evening classes.

We also have Saturday classes. A lot of times when we do that full-scale drill, a lot of those are on a Saturday just

because of volunteers and people working so they can get everybody there for the training. There's actually a Saturday training with a safety train, a Thursday, Friday, Saturday, coming up in Harrisburg, PA, in July. So, we do provide it other days of the week.

MR. GOODEN: All right. Thank you.

And also, you mentioned in your opening statement that you have experience as a first responder, is that correct?

MR. DEUTSCH: Yes.

MR. GOODEN: About how many years did you have?

MR. DEUTSCH: I have 40, and I have 22 in industry.

MR. GOODEN: With that experience, on the night of the derailment, how did you utilize that experience to assess the situation, provide feedback, and recommendations to keep the first responders safe?

MR. DEUTSCH: So, when I did my assessment, I saw what type of fires that were burning. I did not see pressure fires at the time. I knew it was a pool fire. I knew it was one of the acrylate cars because I worked with that product in a previous employment, so I knew it really seemed like butyl acrylate, it could have been the other one. They have a similar smell. So, I knew that car was ruptured, and that was most likely feeding the spill fire.

I saw a large spill fire in the ditch. With that and the location of the personnel, and the time limits on thermal

protection on a perfectly good car, not a car that's already been in the derailment and have jacket damage and such, the time was kind of up to stay there. My concern was the pressure relief valve starting to go off, and I believe when I got everybody out of there with my contractor and we discussed that about 30 minutes after everybody left, the first one went off.

So, that's based on my experience. We did training and industry where if you don't protect the pressure relief vessel that has a relief valve on, it can release. So, I'm aware of that situation. You couldn't see the orientation of the cars real good with all the fire and the smoke to know where the pressure relief valves are orientated on the car. So, with that and those unknowns, it was time to get everybody out of there.

MR. GOODEN: All right. Thank you. And one question for Chief Jones. Chief, I think you mentioned earlier that you had already had information prior to your arriving at the derailment about the train consist or about the train derailment in general. Did you utilize AskRail to find that information?

MR. JONES: Yes, we used AskRail once we arrived on the scene. Coming from our community to East Palestine, we were able to come up what's called Route 170, and we were able to make it right to the train crossing at 170 and Taggart Street, so we're able to get a train number off of that just to get what was included on the train. We didn't know what was involved at that point.

MR. GOODEN: Okay. All right. Thank you. I have no further questions.

MS. STEGMANN: Yes. OxyVinyls has no questions for the panelists. However, we just want to thank Chief Keith Drabick and all the organizations represented by the panelists today for your emergency response efforts in this incident. We just sincerely appreciate your efforts, thank you.

CHAIR HOMENDY: All right. Thank you. The parties have concluded their questions for Panel 1. The last group to question the witnesses will be the Board of Inquiry. Each board member will be limited to five minutes. Again, we will determine if there's a need for subsequent rounds. We'll use the same order we always use, so I will turn it over first to Vice Chairman Landsberg.

VICE CHAIR LANDSBERG: Thank you, Chair.

This whole incident reminds me of the fog war that they talk about in combat where things are happening very rapidly and there's a lot of challenge in terms of communication and even the best-laid plans.

Mr. Deutsch, how many HAZMAT events does Norfolk Southern have in the typical year?

MR. DEUTSCH: I don't know the exact number, but we would consider HAZMAT event just to a car that's leaking product just one dripping down the side of the car from valve not being shut or something. So, total of all those I'm not sure.

VICE CHAIR LANDSBERG: So, how many that involve significant first response, and I realize significant is in the eye of the beholder, but?

MR. DEUTSCH: My estimate would be, you know, with cars leaking that leak a larger amount and any derailment that might leak a HAZMAT, I'm just guessing four to five. A lot of those, like I said, are single cars.

VICE CHAIR LANDSBERG: As stated earlier, this is the bane of safety professionals that this is a very low probability, high-consequence event, is that a correct statement?

MR. DEUTSCH: Yes, it is.

VICE CHAIR LANDSBERG: Okay. Chief, Drabick, did you get any training from Norfolk Southern prior to the event?

MR. DRABICK: Me, personally, Vice Chair? No, I did not. My department, yes.

VICE CHAIR LANDSBERG: Okay. Chief Jones?

MR. JONES: Yes. We are actually involved with two trainings with Norfolk Southern. They had the training we went through in October, they had that, I'm not sure of the exact date but it was pre-COVID. So, they broke it up into the northern part of the county and the southern part of the county. And with us being the HAZMAT team, we were involved with both sets of training.

VICE CHAIR LANDSBERG: Chief Brewer, same question.

MR. BREWER: Same answer, yes. And we know Scott from his previous employment, so we have somewhat of a good relation, good

relationship with Norfolk Southern, but yes, they did provide training.

VICE CHAIR LANDSBERG: Did you feel like it prepared you, at least somewhat, for this particular event, Chief Drabick?

MR. DRABICK: Somewhat, yes, but I don't think you could ever prepare for an event of this magnitude.

VICE CHAIR LANDSBERG: Okay. Chief Jones, Chief Brewer?

MR. JONES: I believe it helped, but as Chief Drabick said, you can prepare all you want, but there's so many variables that can happen that you just have to have a very fluid and dynamic plan going into it.

VICE CHAIR LANDSBERG: Mr. Deutsch, how many on-site training events did Norfolk Southern do last year?

MR. DEUTSCH: We trained four to 5,000 first responders.

VICE CHAIR LANDSBERG: How many organizations?

MR. DEUTSCH: I couldn't answer the exact number of organizations, but they're in the 22 states in our territory.

VICE CHAIR LANDSBERG: Okay.

MR. DEUTSCH: And we did, that's everything from station training to a volunteer department that has a two-hour training window in the evenings, up until our larger events with TRANSCAER and with our safety train.

VICE CHAIR LANDSBERG: Could you estimate a percentage of the number of communities that benefit from that versus your railroad structure?

MR. DEUTSCH: I don't have an exact number for you.

VICE CHAIR LANDSBERG: Okay.

MR. DEUTSCH: We can get that information for you and provide it to you.

VICE CHAIR LANDSBERG: That would be helpful to know how broad a spread you have in that regard, and perhaps are there any plans to ramp up those activities?

MR. DEUTSCH: We still haven't done our actual after-action report because they're still active in the scene here in town. So, our HAZMAT group will meet in the next couple months, and we will review all of that, and then we usually put our schedules out in December, and we'll take all of that into consideration of what occurred.

What we've heard here today, notes of people were taken as far as what training they need, they haven't had, and we'll put all of that together.

VICE CHAIR LANDSBERG: I guess my last question, so we've heard the real challenge of getting information on the consist and so forth. And you mentioned there's a phone number that any first responder could call. Is that widely distributed, and do all the first responder organizations know that if something happens, barring anything else, how and where they can call that number?

MR. DEUTSCH: It's during our training sessions. We go over how to contact the railroad for any type of emergency, not just derailments, just if they need access to our right-of-way to fight

a house fire or they're near our tracks to notify us. We provide that number several times in that training. If they attended that training, they would have had that number, they would have had that emergency guide planning book that has that information, also.

As far as just distributing it, a lot of the 911 centers have it. When we do the tabletops and trainings, we explain to make sure your dispatch centers know what railroads come through your community. Because where I live there's several. It's not just NS. And to make sure that's already in their CAD systems.

That will then speed this whole process up. They'll have that phone number; they'll be able to call that phone number and get a consist right away. Perfect, he's absolutely right about the train consist. The crew has that. We have a section where we explain that in our training that the crew has the consist information.

But as Chief Drabick said, if you don't have the manpower when you first get on scene to send somebody out there, that's why --

VICE CHAIR LANDSBERG: That's why the phone number is so important.

MR. DEUTSCH: The phone number is there for the dispatch center.

VICE CHAIR LANDSBERG: Thank you, Chair. No further questions.

CHAIR HOMENDY: Thank you. Member Graham.

MEMBER GRAHAM: Thank you, Chair. Ms. Canan, if you could pull up an exhibit for me. It's Group C, No. 11, and it's a video of the firefighter response. And after that, I will ask some of the questions of the two chiefs.

(Video played).

MEMBER GRAHAM: Okay. Thank you for that. Chief Drabick, are you able to identify the location of where this video was taken?

MR. DRABICK: I am not.

MEMBER GRAHAM: How about Chief Jones?

MR. JONES: I am not aware.

MEMBER GRAHAM: Okay. Based on your experience, can you estimate, have you -- let me ask. Have you seen this video before?

MR. DRABICK: No, sir?

MEMBER GRAHAM: Okay. It was just released to them this morning, I assume. And that was one of the tank cars on fire in the front there. I know it was a little hard to see. But in your experience, can you estimate the distance between the firefighters and that tank car in front of them, Chief Drabick?

MR. DRABICK: Could you play it again so I could --

MEMBER GRAHAM: If you don't mind, Ms. Canan, can you do that?

MR. DRABICK: Too close.

MEMBER GRAHAM: Too close?

MR. DRABICK: But I would estimate 50 to a hundred feet.

MEMBER GRAHAM: 50 to a hundred. Chief Jones?

MR. DRABICK: Maybe less.

MR. JONES: Yeah, I would say 50 to under 50. They were pretty close.

MEMBER GRAHAM: Okay. Per the Emergency Response Guide, it states, and in capital letters says, "ALWAYS STAY AWAY FROM TANKS ENGULFED IN FIRE."

Was the Emergency Response Guide referenced prior to sending firefighters in, Chief Jones?

MR. JONES: I am not aware. We do not arrive until, like, 10 minutes until 10, and we were not, I was not specific with firefighting operations at that time. We arrived as HAZMAT, and I don't know what time that video was taken. Was it time stamped? So, I'm not sure how far into the scene, you know, how far into the incident that was when that video was taken.

MR. DRABICK: Okay. Same answer. I don't know how far into it the video was taken. I'm not sure what department those firefighters were with.

MEMBER GRAHAM: Okay. If you notice the firefighters seen in the video are carrying a hand line. Based on your experience, what is the effectiveness of a hand line against a fire of that heat and magnitude? Chief Drabick?

MR. DRABICK: That's going to depend on the product that's

involved and what their intention was with that hand line. Was it exposure protection or extinguishment.

MEMBER GRAHAM: The Emergency Response Guide states, "for massive fire use unmanned master stream devices or monitor nozzles. If this is impossible, withdraw from the area and let the fire burn."

Based on your firefighting experience, why are unmanned master stream devices or monitor nozzles recommended for massive fires, Chief Drabick.

MR. DRABICK: For safety. And that's absolutely the right thing to do, and we did have unmanned master streams in place. Again, I'm not sure who those individuals were and at what point that was going on.

MEMBER GRAHAM: So, you do have those kind of nozzles?

MR. DRABICK: Yes, sir.

MEMBER GRAHAM: Were they initially deployed, were you aware of?

MR. DRABICK: That I'm aware of, yes, they were deployed fairly early into the incident. I couldn't give you an exact time as to when that was.

MEMBER GRAHAM: Chief Jones, same question for you. Do you have those devices, and were they deployed when you first arrived on scene?

MR. JONES: Yes, our department does have unmanned monitors. Several types. But, again, that was not my basis there that

night, so I did not notice any unmanned nozzles.

MEMBER GRAHAM: Thank you. One final question before my time is up. What firefighting guidance did Norfolk Southern provide during the initial phase of the emergency response, Chief Drabick?

MR. DRABICK: I cannot answer that, sir. I wasn't there.

MEMBER GRAHAM: And Chief Jones, were you provided any guidance?

MR. JONES: As far as I know, the only guidance that I received, again, we were strictly there for HAZMAT, was when sometime during the event when Mr. Deutsch arrived and their HAZMAT team arrived, they advised to pull all the firefighting apparatus and personnel back to that one-mile radius. So they ceased firefighting operations, but I don't know at what time that was.

MEMBER GRAHAM: Thank you, gentleman. Thank you, Chair.

CHAIR HOMENDY: Member Chapman.

MEMBER CHAPMAN: Thank you, Chair.

Mr. Deutsch, I understand I think you said this morning there were two levels of emergency preparedness exercises, tabletop and full-scale exercises.

How is Norfolk Southern able to communicate and coordinate the timing and the participation for those sorts? In other words, how do you get the word out to agencies that these are coming up, they're scheduled, and how do you ensure that the agencies, that the local agencies participate?

MR. DEUTSCH: So, usually we're contacted by a particular county in the states we operate in or a particular fire department. They've been to our training, or they've seen our training on-line, on our website. They know the TRANSCAER website provides training that all the different railroads use. That is a training, not an advertisement but a place where everybody can send their training, and you can sign up so it's out there through that organization.

Doing so, people request can you bring the safety train to our community? You have a yard in our fire district, can you bring the safety train? We want to train our HAZMAT team. So, we'll make arrangements then to accommodate them, and provide that training.

And as far as the tabletop, it's the same way with the table tops. They receive some type of grant money that he was talking about earlier, HMEP money or whatever it might be, and then they schedule a tabletop and then we assist in that tabletop. If they don't have grant money, NS has paid for tabletops in areas where people have called and requested training. If they contact us, we work them into the schedule and set up, set up training for them.

MEMBER CHAPMAN: And you get a good level of participation?

MR. DEUTSCH: Yes.

MEMBER CHAPMAN: Chief Drabick, others if you want to comment on this, do you find these exercises, recognizing that it's virtually impossible to prepare for an event of this magnitude,

just as a general matter do you find these exercises worthwhile and useful?

MR. DRABICK: I think anytime you can get training with subject matter experts or industry professionals, it's definitely beneficial.

MR. JONES: And firefighters are a different breed. They don't want to sit in a class all day and listen to someone Poer Point them to death. They like the hands-on. They do better with hands-on training. So, these tabletops and functional exercises, they're a lot better for the firefighters because they learn more.

MR. BREWER: With what they said, there's no better training than them bringing a tank car or cars to us so that we can use equipment on them, so hands-on training is what they said.

MEMBER CHAPMAN: Chief Swords, does your agency participate in these events?

MR. SWORDS: No, sir, we do not. We just oversee the training through the charter fire training programs.

MEMBER CHAPMAN: Understand. Chief Drabick, I'll start with you, but I certainly will invite others to comment. I recognize, Chief, that you were not there in the initial phases, but based upon what you know from discussing with your teams, what were the key challenges in terms of coordination and communication during that first hour or so of the event?

MR. DRABICK: The first challenge, of course, was communication, being able to communicate with all the other

agencies coming in, being able to get those agencies there and get them on the correct side of the tracks that we needed them on, and then just overall coordination of the incident. Again, I divert back to communication being the biggest issue we had.

MEMBER CHAPMAN: Others care to comment, Chief Jones?

MR. JONES: Yeah, it's always a challenge, and our first priority is responder safety and then public safety. And responder safety that night was a huge challenge. If you look at the size of the incident, you had, and you had two sides that you had responders on, so I think that was a huge challenge for the incident commander that night was making sure the responders were safe.

Our next challenge is also what's involved, what's leaking, how much is leaking, and it was difficult to know that night exactly the way the cars were accordioned to know what was leaking and how much was leaking that were, those were our biggest challenges.

MEMBER CHAPMAN: Any others care to comment?

(No response).

Chair, I just want to say quickly how much I appreciate, and I know all of us do, the hospitality of the community in housing us this week. We know this has been a difficult time, and we thank everyone for making us feel welcome and for providing the opportunity to conduct this hearing. I think it's very helpful.

CHAIR HOMENDY: Thank you. Julie, don't pull it up yet, but

in a second, I'm going to ask you to pull up Group M, Exhibit 9, but don't pull it up yet.

Okay. Mr. Deutsch, whose responsibility is it to maintain and provide the train consist?

MR. DEUTSCH: The railroad will provide the train consist.

CHAIR HOMENDY: And earlier I think we were hearing that it was the responsibility of the crew, though.

MR. DEUTSCH: Yeah. Well, the crew will provide the consist. The dispatcher in Atlanta can provide the consist, and you have the potential of getting it off of AskRail if you have AskRail.

CHAIR HOMENDY: Okay. So, the crew can provide the consist, the railroad has a responsibility to provide the train consist. Okay. What time did you arrive on scene?

MR. DEUTSCH: It might have been around 11:30. The video I shot was, like, 11:45, so I'm guessing around 11:30, somewhere in there.

CHAIR HOMENDY: Okay. And Chief Drabick, I agree with you. It is not the fire service's responsibility to drive a mile up and find a train crew while they're trying to deal with a terrible incident. It is the railroad's responsibility to maintain that and provide that information according to federal regulations.

So, just reading through all the transcripts of the interviews, so East Palestine dispatch did call Norfolk Southern at 9:04 p.m. in Atlanta to obtain information about the derailment. 9:04. I want you to keep that in mind. NS said

they'd have to call them back.

Another call was placed at 9:30 by East Palestine dispatch to Norfolk Southern about whether they should start evacuations. I'm not sure whether they got return calls, but the timeline for the consist itself shows that Columbiana County Emergency Management Agency received the consist via e-mail from Norfolk Southern at 9:56 p.m., basically a full hour later. The deputy chief of East Palestine 9:45, 10:00. Chief Jones didn't receive the consist until 10:23 and had to get it from CCEMA, I think, or the Columbiana County Emergency Management Agency. The East Palestine Police Department didn't receive the consist until 1:30 a.m., and the East Palestine Fire Chief here found the printed train consist at the command post at 2:15 a.m. sitting on a desk.

Can you explain why it took so long to get the train consist to those, that are responsible not just for protecting their own firefighters but for response, and protecting those in the community, but for making sure that they were able to fight what they were facing?

MR. DEUTSCH: I'm unaware of the dispatch center calls from East Palestine to NS. I'm not aware of that. When I got a call from EMA Director Clark, I then sent the consist that I received when I was en route to the scene. It is a railroad's responsibility to provide that train consist.

CHAIR HOMENDY: Thank you. Julie, can you pull up the exhibit? Who is CTEH, Mr. Deutsch?

MR. DEUTSCH: They're a contractor that does the air monitoring for us.

JULIE: Do you want it to start at Page 1?

CHAIR HOMENDY: Sure.

JULIE: Exhibit A?

CHAIR HOMENDY: Nope. It should go back to the e-mail. Hopefully it's there.

There was an e-mail that was circuited by Norfolk Southern to CTEH, your contractors that were part of the emergency cleanup, at 9:08 p.m. providing the train consist to your contractors.

How is it that Norfolk Southern could provide the contractors responsible for cleanup with the information within 12 minutes of the derailment and took an hour to several hours before providing it to emergency responder?

MR. DEUTSCH: In this e-mail, that was our IH department sending it to the air monitoring contractors who were based in Arkansas to bring mode and equipment based on the chemicals that were in the derailment. I can't explain the time frame.

CHAIR HOMENDY: Thank you. I don't have further time, but I will ask Vice Chairman Landsberg if he has further questions.

VICE CHAIR LANDSBERG: No further questions, Chair. Thank you.

CHAIR HOMENDY: Member Graham?

MEMBER GRAHAM: I do have some more. Thank you.

Chief Drabick, on Page 8 of your interview transcript, you

stated about 30 minutes after the incident you determined there needed to be an evacuation zone of one mile. Please discuss how you determined that?

MR. DRABICK: By looking at the ERG.

MEMBER GRAHAM: The ERG?

MR. DRABICK: Correct, sir. ERG.

MEMBER GRAHAM: And once you determined that, how did you communicate the evacuation recommendation?

MR. DRABICK: Via phone with my deputy chief in conjunction with Director Clark, who was on scene, confirming that.

MEMBER GRAHAM: Okay. Excellent. And that was your call to make the evacuation zone one mile, correct?

MR. DRABICK: That was the consensus amongst all of us in reference to the ERG.

MEMBER GRAHAM: Thank you. Mr. Deutsch, you stated earlier that the, a one-mile evacuation zone was appropriate in your, a little earlier, is that correct?

MR. DEUTSCH: When I was contacted by Columbiana, they had the ERG, and they asked me if based on the ERG guidance, based on vinyl chloride, should we evacuate? And I advised them they should follow the guidance in the ERG for that.

MEMBER GRAHAM: Is wind ever considered when determining an evacuation zone after a derailment?

MR. DEUTSCH: Yes, wind is always considered.

MEMBER GRAHAM: Okay. Thank you. On February 3rd, you

received a phone call from Columbiana County EMA asking whether they should evacuate. Do you remember what time that call was at?

MR. DEUTSCH: I do not. I was responding to the scene at that time, and I don't actually remember where I was to give you a definite, like, time frame into my response. But it's about an hour-and-a-half for me to get here.

MEMBER GRAHAM: Okay. And at that time, what did you know about the contents of the tank cars?

MR. DEUTSCH: I knew that the lines that were derailed between, you know, the two sections up right train contained vinyl chloride, contained an iso car, contained some non-HAZ tank cars. I was aware of the HAZMAT that was involved in that section of cars.

MEMBER GRAHAM: And did you provide any guidance regarding the evacuation?

MR. DEUTSCH: On my way there so that I can continue to drive there, I gave them my boss's phone number so that he could talk to incident commander and give him guidance on the situation they had in front of them.

MEMBER GRAHAM: Thank you. Does Norfolk Southern have any policies or procedures regarding advising cities or town officials about evacuation protocols?

MR. DEUTSCH: We direct them in the resources that are out there, like the ERG, and guide them through what they're looking for and making sure that they're looking at that correctly, but we

don't issue the evacuations.

MEMBER GRAHAM: Okay. The evacuation appears it did not occur until about an hour-and-a-half after the conversation you had. Is there anything Norfolk Southern can do better to work with these city and town officials to ensure an appropriate and timely evacuation?

MR. DEUTSCH: Norfolk Southern can assist in any way we can. A lot of people, that's a big decision to make if you're in that role and you've got to gather the data and the information to decide what you're going to do, if you're going to have an evacuation, how large it's going to be, and I just believe that time frame is probably from gathering that information and unified command situation in their town, so.

MEMBER GRAHAM: Thank you. Mr. Haueter, after the initial evacuation order was issued, how was the evacuation order and the associated risk communicated to the community?

MR. HAUETER: Are we talking the initial two streets or the one mile, sir?

MEMBER GRAHAM: The one mile.

MR. HAUETER: The one mile? That, obviously, came in from our dispatch, and we were doing it, you know, on the fly. We were pulling resources, plotted off a quick, one-mile radius on Google Earth, and started assigning units to streets to go door-to-door. And we, obviously, didn't have the information, I assumed chemicals. We were just advising the residents because of the

train derailment is what we were relaying to them.

Obviously, there was multiple agencies involved. I don't know if some agencies gave different directions, you know, because of potential of chemicals or not, just assuming like I did. I know our guys, and when I was going door-to-door was just telling because of the train derailment and the fire.

MEMBER GRAHAM: Okay. Do you know how many people actually did not evacuate?

MR. HAUETER: That evening, at least from my, you know, the houses that I went to, obviously, there were houses that we couldn't get any answer to. I did not have a problem with one resident not wanting to leave. Some questioned it a little bit, but they all, you could see the fire, you could just feel it in the air. Traffic was just buzzing up and down the streets, sightseers wanting to go see. I think people realized that it was a situation they needed to leave. I'm sure there were people that stayed after we left, but I don't have a number off that.

MEMBER GRAHAM: If you don't mind, Chair, one more quick one. Is there anything we can do better in the future? Have you talked about that, trying to get people to evacuate from the zone?

MR. HAUETER: This was a conversation that we had when the, obviously, the controlled burn was going to go on as far as how to get people out of their residences. I feel that if order people and tell them they have to leave, sometimes you get push back. If you express the dire need to leave, and then, you know, there

could be serious physical bodily injury, and you show them, look out your door, you can talk to people, and they understand. You know, I don't think anybody really wants to perish in a catastrophe. But I think just explaining it to them instead of saying, you have to leave, like, giving them that. They're adults. I think they will understand.

MEMBER GRAHAM: Thank you for that, Mr. Haueter. Thank you, Chair.

CHAIR HOMENDY: Member Chapman.

MEMBER CHAPMAN: Just a couple quick ones, Chair.

Mr. Deutsch, a lot of discussion this morning about the AskRail app, and I understand that's a collaborative product. Who or what is the lead agency or the lead entity in coordinating the AskRail app?

MR. DEUTSCH: It's operated by Rail Link, but all of the railroads have a representative that's on the committee.

MEMBER CHAPMAN: Okay. And you said your experience is that the accuracy of the AskRail app has been pretty good?

MR. DEUTSCH: Yes, my experience has been good.

MEMBER CHAPMAN: Okay. Chief Drabick, again, recognizing that you were not there in the earliest stages here, but based on your discussions and also Chief Haueter, we've talked about, you know, trying to track down the crew and how difficult that would be. But in those early stages, there was really no way to know whether there had been any casualties as a result of this

accident. So, you had no way of knowing whether there was even a crew to track down, is that correct?

MR. DRABICK: That's correct, sir.

MEMBER CHAPMAN: Okay. Chair, that's all the questions I have. Thank you all very much.

CHAIR HOMENDY: Thank you very much. A few questions.

So, the AskRail app, first, you have to know about it, you have to know it exists, and then you have to get access to it. But one thing I think most people may not be thinking of, other than you all, is the AskRail app and the consist gives the cars in order. In a derailment, all the cars are bunched up and in different places making it very difficult, especially when you have placards that burned.

Has NS, Norfolk Southern, talked about any sort of different type of placarding as a result of this for rail cars to make sure that responders can actually see the information.

MR. DEUTSCH: We have not had discussions on that. At this time, we still haven't had our group, HAZMAT group, have our after action for the event.

CHAIR HOMENDY: Understood. Thank you. I do want to talk about training a little bit. I am trained at the HAZMAT operations level, and there is a difference between what Norfolk Southern provides, which is good training. It's more familiarity with tank cars and DOT 105s, 111s, it's not HAZMAT operations-level training. That's very different. The National

Fire Protection Association has NFPA standard No. 472, which lays out different types of training, awareness, operations level. And a third of fire departments are trained at the awareness level, which is the most basic, and not -- not a ton of them are trained at the operations level, which I think needs to change.

And so, I want to talk about that a little bit. There are significant differences between training for career firefighters, and I know we got to this with Mr. Lloyd's questions, and volunteer firefighters, but Chief Jones, can you talk a little bit about how that impacts the volunteer fire service and what should be done, and do other states have that type of different training?

MR. JONES: My department is a career department, so, of course, we have, as you stated, different levels of training. I believe just speaking in our area, it's tough to get these men and women trained at all.

CHAIR HOMENDY: And part of that is, besides the week, the during the week, you do have an issue with backfilling during training?

MR. JONES: Yes. In my department, that's one of our biggest issues. If I send someone in training, I have to backfill with overtime.

But, when you look at the volunteer, these men and women work full-time elsewhere, so they're doing this on their off time, so getting that person all trained is very tough.

CHAIR HOMENDY: Do others want to comment on the training?

MR. DRABICK: Sure. It is very difficult in the volunteer fire services as a whole to get people trained to adequate levels, levels where they should be. There should be no segregation between career and volunteer training. It should be a standard training across the board. It's very hard to accomplish that. A lot of that is department-specific areas or area specific what their requirements are. The more stringent the requirements, you stand the potential of having less people to volunteer, able to participate. You do what you can to try and get that. You try and meet the minimum standards as required by the NFPA. I don't think anybody could ever meet all of them.

But there needs to be something, more availability of training facilities that are easier to access from rural areas and the volunteers in general. And staffing is always an issue, and that comes down to training as well as finances.

CHAIR HOMENDY: Others want to comment on training?

MR. BREWER: Okay. I will. So, from my department, my agency, it's a little different because I have corporate people on my agency, the Shells, the Sherwin Williams, that get trained while they're at their real job and then they come to ours to do first response or HAZMAT type.

This is a political, this could be political suicide for some of the legislatures, though, who mandate training for departments that are already hurting. I'm 100 percent into training, but when they start putting more mandated training on an already-hurting

business, if you will, the fire service, it's going to, it could drive out some of those volunteers who are already forced to do regular fire training. I'm not downplaying training, and this is where going to a more career department is probably what's needed in some areas of the country.

CHAIR HOMENDY: Well, it sounds like if you do even training, perhaps some resources are needed as well.

Chief Drabick -- I'm out of time. I'm moving on to Member Graham and then I'll come back.

MEMBER GRAHAM: Thank you, Chair.

Chief Drabick, how many volunteer firefighters do you have in your department?

MR. DRABICK: Right now, my department counting myself is 38 members strong.

MEMBER GRAHAM: And how many are volunteers?

MR. DRABICK: 37.

MEMBER GRAHAM: 37. All but you?

MR. DRABICK: Yeah. We're a combination department. The only thing that we staff on a regular basis is Monday through Friday, 9:00 to 5:00, and that's an ambulance. Everything is else, everything on the fire side of the house is a volunteer, if you're available, and then we pay you hour-for-hour a very small wage.

MEMBER GRAHAM: Thank you, Chief.

Chief Jones, how about your department?

MR. JONES: We have a 16-person roster, including myself. Currently, we're down two spots. Again, it's hard for career departments to also get members, so we're actually trying to recruit to fill house two spots.

MEMBER GRAHAM: Okay. Thank you.

Chief Drabick, before the night of February 3rd, had any of your volunteer fighters, firefighters, ever responded to a derailment with hazardous material release before?

MR. DRABICK: Not counting myself, I believe we may have had one. So, two of us total.

MEMBER GRAHAM: Okay. And you said that some of your firefighters had gone to a tabletop exercise, I think it was in October of '22?

MR. DRABICK: Yes, sir.

MEMBER GRAHAM: And did they bring any of that information back and train the rest of the department after that exercise?

MR. DRABICK: Yes, sir, they did. They came back, they shared the information they learned there. We discussed several aspects of it, how the training went. So, yes, they shared it with the rest of the department.

MEMBER GRAHAM: Excellent. And same questions for you, Chief Jones. Had any of your firefighters ever responded to an incident like February 3rd with the derailment and the hazardous material release?

MR. JONES: No, that would be a first for all of us to that

magnitude.

MEMBER GRAHAM: Okay. And did you also, after the tabletop exercise, I assume probably everybody was not at that, were you able to pass that training on to the others?

MR. JONES: Yes, I had, the way my command is set up there's myself, and then I have assistant chiefs that run each of the three crews, and then there's lieutenants underneath them. So, it was mandated that all my line officers attend that October training.

MEMBER GRAHAM: All right. Thank you.

Chief Drabick, what recommendations do you have for future tabletop exercises after February 3rd, what would you, you know, request of Norfolk Southern, or maybe state resources for training crews, especially volunteer crews to handle the situation like you had?

MR. DRABICK: I think making sure that everybody understands the resources available, the resources you may need to handle an incident like this. There will never be another incident like this. No incident is ever the same. And understanding the communication issues and determining ways to overcome that would be great things to get out to the rest of the responders.

MEMBER GRAHAM: Okay. And same question for you, Chief Jones.

MR. JONES: Could you repeat the question, please?

MEMBER GRAHAM: Yeah. What recommendations would you make

for future tabletop exercises for the situation that you responded to the night of February 3rd? What could be done better?

MR. JONES: Well, I think the training we had in October was as realistic as you could get for tabletop event. I think they should happen more often. You do one training every so many years on that subject, it's tough to maintain that information. So, I know Norfolk Southern, you know, is strapped with their training just as everybody else, but I'm a little different because we're a career department. We will actually look for training. You know, we can do that, we go, we look for resources for our training so I can keep my staff trained to the best of their ability. But again, we're different because that's their job. But we search out training, and I think that needs to be more on the departments to be more proactive in finding the training. I can't rely on Mr. Deutsch or Norfolk Southern to come to my department to offer me training when I should be out actively looking for training to better prepare my department.

MEMBER GRAHAM: Thank you, gentlemen. My time is up.

CHAIR HOMENDY: Do you have any more?

MEMBER GRAHAM: After this. I'll let you go ahead.

CHAIR HOMENDY: Chief, I'm just wondering if you have any concerns for your firefighters who were responding to the health impacts?

MR. DRABICK: Absolutely I have concerns. I started voicing those concerns shortly after my arrival on the night of the

incident. It took several months to finally get some semblance of testing done for them. I'm concerned about not only my responders but everybody around for long-term health concerns. That's got to weigh in the back of your head for everybody. The potential is there. We've started testing for our people, there's been other organizations that have had testing done for their people.

Is it the right stuff? I don't know. I don't think anybody knows. And we're going to continue that on for long after this. Hopefully, we don't find anything. Unfortunately, we probably will have some that will. It's a very heavy weight that has to be carried, again, not only for the responders but for the residents of the town and everybody else that came to help us.

CHAIR HOMENDY: Does anyone else want to comment on that?

MR. JONES: We're concerned, but according to OSHA, as a HAZMAT team, we have to have bi-annual physicals, so that will be able to keep us, hopefully, we'll be able to find anything that arises before something happens.

CHAIR HOMENDY: And how about your gear? So, the gear that you used for that day, you have to get it cleaned, and was there any impact on your gear?

MR. DRABICK: So, as far as the gear, every gear manufacturer we contacted recommended disposal and then replacement of that gear. And to the best of my knowledge, every department has done that.

CHAIR HOMENDY: Which costs money.

MR. DRABICK: Which costs money.

CHAIR HOMENDY: And you have limited resources.

MR. DRABICK: Yes. Very limited resources. However, Norfolk Southern did compensate the departments to the best of my knowledge. Some may have went to their insurance company for that. Others followed the billing process.

CHAIR HOMENDY: So, how do we make sure, and I've been talking about the resources for the fire departments for years. How do we make sure that you get adequate resources for training, for gear, for backfilling during training, for providing the right, the quality training?

MR. DRABICK: Adequate federal and state funding. It all comes down to the all-mighty dollar. Talking about political suicide, you know, we spend money, trillions, billions, millions of dollars on all kinds of things, but yet we spend little bits to the fire service, to the police, to the EMS. That funding overall from the very top at 1600 Pennsylvania Avenue down needs to be increased to be able to provide to the correct proper services and to protect the people providing those services. Funding has to increase across the board. There's no other answer to it than an increase in funding.

CHAIR HOMENDY: Thank you. Member Graham?

MEMBER GRAHAM: Thank you, Chair.

Chief Drabick, do you know when the PRD's started activating?

MR. DRABICK: I cannot give you an accurate answer for that,

no.

MEMBER GRAHAM: How about Chief Jones?

MR. JONES: I do not have that answer either.

MEMBER GRAHAM: Okay. Mr. Deutsch, were you aware of when they started activating?

MR. DEUTSCH: The first one went off about 30 minutes after I removed everybody from the scene that first night when I got there. I do not know what time it was, what that time frame was.

MEMBER GRAHAM: Okay. Thank you for that. Anybody else who was on scene notice a time or? Okay. Thank you.

Mr. Swords, what kind of, after a volunteer firefighter is trained, you told us about how many hours, is there any additional training that that firefighter must go through?

MR. SWORDS: Yes. In order to be able to function on a fire ground and be in any type of IDLH environment, which could include live fire, they would need to receive additional training. That would be something that is a local level, the fire chief would be responsible for determining what that training would be.

However, we have 62 chartered fire training programs all around Ohio that provide continuing education training. So, they would be a resource.

The EMA also has a technical advisory committee for HAZMAT, and I believe, if I'm not mistaken, they provide training in addition to typing those different teams. So, there are other resources that are available. And some of those programs actually

will come on-site and deliver that training. They don't all do it, and some of them charge a fee. Some do not. So, there are other training resources available.

MEMBER GRAHAM: Do you support more initial training for a volunteer firefighter at the beginning?

MR. SWORDS: Yes. I think at some point we need to make that change, but again, it's going to have to happen through the legislature to do that.

MEMBER GRAHAM: Do you have any good ideas on how to balance the kind of the work life? You know, most of these volunteer firefighters have jobs and families and everything. Do you have any good ideas on how to get that training in without disrupting their lives too much?

MR. SWORDS: Well, it's difficult. However, there is a Volunteer Firefighter Task Force that was stood up by the governor's office, and there's a lot of great work being done by that task force with a lot of good ideas, and they even published a report that has that information in there that's on the state fire Marshall's website. So, I think at some point, hopefully, some of those ideas will be available through funding.

MEMBER GRAHAM: Of course. I want to thank you, I want to thank all of our witnesses for being here today and your candid responses, and that's all the questions I have, Chair. Thank you.

CHAIR HOMENDY: Thank you. I'm going to turn to the technical panel now who has some additional questions.

MR. LLOYD: Thank you, Madam Chair.

Chief Swords, I'd like to continue on with the Member Graham was asking about the volunteer training. I know at one time it was 54 hours, and that was reduced to 36 hours, is that correct?

MR. SWORDS: Yes, sir. There was recent legislation that changed the number of continuing education hours over a three-year certification cycle from 54 to 36.

MR. LLOYD: So, what would prompt a reduction in training hours, higher-level training, reducing down to a lower level, what would prompt that?

MR. SWORDS: I don't have a really good answer for that. I know there are groups that approached different legislators, and at some point, they were even talking about removing the continuing education requirement entirely for firefighters, and there was a compromise putting it at 36 hours.

MR. LLOYD: So, the training requirements for the 36, but it was 54 was training removed? Was there certain training requirements that were removed in order to take it from 54 to 36?

MR. SWORDS: No, sir. The requirement is the hours don't have any specificity on what topic areas. It just has to be firefighter-related training.

MR. LLOYD: Okay. And the 36-hour level of firefighter is not, are they able to operate in a hot zone, the hot zone, the warm zone, such as hazardous materials response, structural firefighting, things of that nature?

MR. SWORDS: Not with their initial certification training, no.

MR. LLOYD: Okay. Mr. Deutsch, in your response plan, its titled emergency response guiding plan, in NS, manual. It talks about incident levels 1, 2, and 3. What would you rate the East Palestine accident, a 1, 2, and 3?

MR. DEUTSCH: It would have been the highest level, 3.

MR. LLOYD: Okay. So that interaction, I want to more particularly hit on that interaction between the Emergency Dispatch Center and the Norfolk Southern dispatch. Would the communication increase if it goes from a level 1, 2, or 3, such as automatic e-mail notification of a train consist because we know it's much easier than running down a railroad line and trying to find an engineer and conductor that's a mile down the road. So, does that communication increase depending on the level of severity of the accident?

MR. DEUTSCH: The level is the same if you just call and say you have a, you want access or want to put hoses across the tracks because of a fire. As far as the action that's taken by the dispatch center, they're going to notify the operations center the same way and notify somebody in transportation in that area of an incident. It doesn't matter what level that incident, those incident levels are more internal and what resources that start to roll and different people notifications internally.

MR. LLOYD: Is it required for that NS dispatcher to e-mail

the train consist to that emergency dispatcher?

MR. DEUTSCH: They're to provide information of the consist. That will usually probably come out of the operations center, because that's where they dispatch the trains and have all of that information. Police communication will transfer that call to them.

MR. LLOYD: Thank you. Chief Drabick, so much easier, I guess, if your units were equipped with e-mail capabilities, correct?

MR. DRABICK: That's correct, sir.

MR. LLOYD: So, much easier process if you can get that in your hands much quicker from your emergency dispatch center, if NS could provide that consist, correct?

MR. DRABICK: Correct. Again, as long as we have Internet service or cell service.

MR. LLOYD: Yep. Mr. Dougherty, anything?

MR. DOUGHERTY: I do have a few follow-up questions of Mr. Deutsch.

Can you explain to us what challenges did Norfolk Southern, the responders, or the response companies have in trying to identify the location of the hazardous materials given the lack of visibility of the placards?

MR. DEUTSCH: Could you repeat that, Mark? It broke up at the end.

MR. DOUGHERTY: Sure. Can you tell us what challenges

Norfolk Southern and its responders and also the fire responders as well, what challenges they experience in trying to identify the location of the hazardous materials given the lack of visibility of the placards?

MR. DEUTSCH: I'd that say that the difficulty is exactly where the cars ended up landing and laying. They're going to be in the general area during the derailment. What car is which, they might have switched and went one way or the other. If they're in that accordion, they tend to be in order. If they go off to the sides, that's when you start to lose where they're actually at. So, there was some off to the side, there was some accordion.

And that's why when we do the training, we do for the AskRail app or on the consist and to describe a derailment, we show a picture of a derailment, and we explain how to use the upright car to the right and upright car to the left. And those two car numbers, and then the cars in between those are the AskRail app are the cars involved in the derailment. That will get you started on what hazards are involved, but it won't get you to the exact car.

The car numbers will last pretty long in the fire before they're finally unreadable. I've seen them where all of the paint or what you can see real good from the outside's off, but there's an imprint on the car still from the fire of the car number, so you can still get that information. You can still identify the

car based on it's a pressure car, and then find the pressure car if the next car is a general service car, find that in the consist and you'd be able to identify. That helps you, you gather all that data to figure out what car is what.

MR. DOUGHERTY: Thank you. I'm sure you know the answer to this next question, but can you tell us what happened to the placards on the tank cars that were involved in the fire?

MR. DEUTSCH: So, if the placards exposed to the tank car, there are different placards that are in there that are put on when they're shipped from the location. A lot of them are plastic, some are paper, so they could be damaged. Also, in derailments without any fire, they could be damaged because the placard holder is only a small weld on, and I've seen them folded over where you can't see the placard. That's why in the training we explain about the report marks or what we call make it remember it is the license plate on the railcar so that they can find that number in the consist and find out if it's a HAZMAT car or not in case they come across that situation where the placards are ripped off.

MR. DOUGHERTY: Thank you. I'd like to refer to the 49 CFR, specifically 172.519A1, which is the general specification for placards, which states that a placard may be made of any plastic, metal, or other materials capable of withstanding without deterioration or substantial reduction in effectiveness, a 30-day exposure to open-weather conditions.

Are you aware of any other federal regulation that requires the placards to withstand heat or fire exposure in the event of a derailment?

MR. DEUTSCH: I do not. Only against weather that I'm aware of.

MR. DOUGHERTY: That's all the questions I have. I'll turn it back over.

MR. LLOYD: Thank you. Mr. Deutsch, have you, I'm sure you've responded to several accidents involving fire like this. Have you seen other accidents where the placards have been destroyed where that chemical cannot be identified?

MR. DEUTSCH: I've seen them where there was no fire, where depending on if you're on one side of the car where the car went off the rails and slid and then ended up the placard ripped off or the placard folded over, I responded to that side. So, they were probably on the other side or they could be on the ends, but you might not be able to get in there to see it. So, I have seen it where on the side they've been ripped off.

MR. LLOYD: Could these placards, could these placards be made of a more durable material where they would withstand fire impingement where it would make it easier for the first responders to get that immediate notification or that, you know, of what they're dealing with. And is NS looking at anything like that for a more durable placard after looking at this accident?

MR. DEUTSCH: NS doesn't make that regulation. We would

assist or information from incidents we had to whoever is working on something like that in any way we can. I think anything that makes it better might be wise to do.

MR. LLOYD: Could NS exceed that regulation on placard durability?

MR. DEUTSCH: Well, NS doesn't apply the placards to the cars. If they're lost in transportation, NS applies the placards. They're applied by the shipper when they leave, when NS goes to pick the cars up.

MR. LLOYD: Thank you. Thank you, Mr. Deutsch.

Chair Homendy, that's all I have for this panel.

CHAIR HOMENDY: Great. Thank you very much.

So that concludes the first panel for the hearing. We'll now break for a 60-minute lunch. Please return in time to pass through security. I ask that the witnesses for the next panel return early to ensure that they're seated for the time we reconvene at, I guess early. We'll reconvene at 1:45. I do want to thank the first panel of witnesses. I really appreciate it and appreciate your service.

(Whereupon, at 12:40 p.m., a recess was taken.)

A F T E R N O O N S E S S I O N

(2:25 p.m.)

CHAIR HOMENDY: Welcome back. We're now ready to turn to our second and final panel for today, which is on the circumstances that led to the decision to vent and burn five vinyl chloride tank cars.

Ms. Shaw, will you please begin the introductions and swear in the witnesses.

MS. SHAW: Chair Homendy, the second panel will address the timeline of events, vinyl chloride monomer, communications and coordination between agencies, and vent and burn decisions.

Witnesses for Panel 2 are composed of the following individuals: Robert Wood, Norfolk Southern; Keith Drabick, East Palestine Fire Department; Drew McCarty, Specialized Professional Services, Inc.; Charles Day, Specialized Response Solutions; Paul Thomas, OxyVinyls; Dr. William Carroll, Department of Chemistry Indiana University; Steve Smith, OxyVinyls; David Padfield, Pennsylvania Emergency Management Agency; and Major General John Harris, Jr., Ohio National Guard.

The NTSB tech panel is composed of Paul Stancil, the panel chair; Ruben Payan, investigator in charge for the East Palestine investigation; Mark Dougherty, and Sean Lynum.

I would now ask that the witnesses please stand to be sworn in. Please raise your right hand and answer by saying I do.

(Whereupon,

ROBERT WOOD,
KEITH DRABICK,
DREW MCCARTY,
CHARLES DAY,
PAUL THOMAS,
WILLIAM CARROLL,
STEVE SMITH,
DAVID PADFIELD, &
MAJOR GENERAL JOHN HARRIS, JR

were called as witnesses and, having been first duly sworn, were examined and testified under oath, as follows:)

MS. SHAW: Thank you. Please be seated. A reminder to the witnesses that you will remain under oath until the conclusion of the hearing.

Chair Homendy, these witnesses have been pre-qualified, and their respective experience and qualifications appear in the docket as exhibits in Group A.

As a reminder to the witnesses, please push the microphone button to talk, and then push it again when finished. Also, please answer the questions factually and avoid analysis. I now turn the questioning over to Mr. Stancil.

PANEL 2 EXAMINATION

MR. STANCIL: Thank you, Ms. Shaw. Good afternoon, witnesses. Chair Homendy, Members of the Board of Inquiry.

My name is Paul Stancil. I'm the technical lead for Panel 2.

Before we get into questioning, I understand that Dr. Carroll, Mr. Thomas, and Mr. Wood have a preliminary statement that they would like to make.

Dr. Carroll, would you begin, please.

DR. CARROLL: Thank you. I wanted to take this opportunity to extend my personal condolences to residents for your anguish and disruption and thanks to the first responders for your heroism in this particular event.

My name is William Carroll. I'm an adjunct professor of chemistry at Indiana University, and I also have a small chemistry consulting business, Carroll Applied Science, LLC.

I retired from Occidental Chemical Corporation after a career of 36 years and consult with them from time-to-time. However, I do not represent the company at this time, and today I am representing only myself. The analysis and opinions you hear are my own. My area of expertise in this context is the chemistry and polymerization chemistry of vinyl chloride. Thank you.

MR. STANCIL: Thank you, Dr. Carroll. Mr. Thomas, please.

MR. THOMAS: Madam chairperson, members of the NTSB Board, ladies and gentlemen. My name is Paul Thomas, and I'm the Vice President of Health, Environment, Safety and Security for OxyVinyls.

With me today is Steve Smith. He's a technical manager of our manufacturing facility in La Porte, Texas.

I first want to acknowledge the East Palestine community and

those who participated in their response effort following the derailment of Norfolk Southern Train 32N in February of this year. We recognize the impact the derailment has had on your community, and we'd like to thank Chief Drabick and all of the first responders for their service.

We look forward to addressing questions from the panel to the best of our ability. As a shipper that relies on railroads to safely transport our products, OxyVinyls shares the agency's goal of investigating transportation incidents and taking steps to prevent a recurrence.

In my opening comments, I would like to provide context regarding our involvement in the incident and summarize the technical support we provided to those handling the response. We were one of multiple shippers that had railcars on Train 32N, specifically five cars with our stabilized vinyl chloride monomer, or VCM, were on the train. The railcars carrying OxyVinyls product did not initiate the derailment. Another car has been preliminarily identified as initiating the derailment when it suffered a wheel bearing failure. The cars carrying our product derailed because of that failure.

Five other companies had a combined total of six tank cars involved in the derailment that contained hazardous materials. Many of these railcars breached upon derailing, which released their contents into the environment and fueled the initial fires at the derailment scene. The five cars carrying OxyVinyls product

derailed without breaching. The pressure-relief devices on all five cars operated as intended preventing damage to the tanks by relieving the elevated pressures that were caused by the surrounding fires.

On Saturday morning, February 4th, OxyVinyls was notified of the train derailment that involved tank cars carrying our VCM product. Following the notification, OxyVinyls activated its special situations team in Dallas. We sent a technical team to East Palestine, and we communicated with Norfolk Southern and its contractors regarding the properties of stabilized VCM. To my knowledge, no other shippers responded with this level of support.

On Saturday evening, February 4th, representatives of OxyVinyls spoke directly with representatives of Norfolk Southern and its emergency response contractors regarding conditions at the derailment site. We made it clear, based on our expertise of the chemical properties of our product, that stabilized VCM would be unlikely to spontaneously polymerize under the conditions described to us by Norfolk Southern and its contractors. Polymerization of VCM is a very exothermic reaction, which generates significant heat resulting in increased pressure within its container. If that pressure is not relieved, it can cause a failure of the container. An uncontrolled VCM polymerization reaction would have an obvious temperature rise that would continue throughout the duration of the exothermic reaction. For this reason, we emphasized to Norfolk Southern and its contractors

the importance of monitoring the temperatures of the rail cars. And on Sunday morning, February 5th, we further reinforced our view that polymerization was not occurring during a call with Norfolk Southern representatives.

As previously mentioned, OxyVinyls had dispatched a three-person team to Ohio in order to make certain that we had representatives on the ground who could serve as a resource to Norfolk Southern and those managing the response effort. My colleague on the panel, Steve Smith, led that team, and he arrived in East Palestine on the afternoon of Sunday, February the 5th.

On Sunday evening, Steve met with Norfolk Southern's emergency response contractors and for the third time stated OxyVinyls' view that polymerization of VCM was not occurring.

In summary, although our rail cars did not initiate the derailment and did not breach in the derailment, we provided technical support to Norfolk Southern and its emergency support contractors. We sent a team to Ohio to support Norfolk Southern's response effort, and we provided information regarding stabilized VCM. We advised that the temperature of the railcars should be monitored, and we communicated our view that polymerization was not occurring.

I want to emphasize that we did not have direct access to real-time information regarding conditions at the derailment site. We were not part of the unified incident command, and we did not participate in or recommend the decision on the vent and burn

operation.

Thank you for inviting OxyVinyls to participate in the investigative hearing. Steve and I look forward to answering your questions.

MR. STANCIL: Thank you, Mr. Thomas. And Mr. Wood, would you provide your statement, please?

MR. WOOD: Good afternoon. Thank you for inviting me here today. My name is Robert Wood. I'm the Director of Hazardous Materials with Norfolk Southern.

I have 22 years of experience with the rail industry, and 11 years of experience working as a hazardous materials with Norfolk Southern. Prior to joining Norfolk Southern as a hazardous materials compliance officer in 2012, I was a hazardous materials emergency response contractor for the company for 12 years. I also served 24 years with the Birmingham Fire and Rescue Service with their hazardous materials team.

First, like my colleagues, I want to express my regrets to the residents of East Palestine and the surrounding communities. Norfolk Southern's top priority is the health and safety of our employees, the communities we serve, and first responders who assist us in our time of need. The emergency response to the derailment at East Palestine was no exception.

I learned of the derailment a few minutes after it occurred the night of February 3rd and immediately started coordinating response efforts. I reached out to Scott Deutsch. He was my

closest regional HAZMAT manager to the area and started coordinating with other managers of the company and those closest to the area to ensure that everyone, including emergency responders had access to the train consist and to understand that there was HAZMAT in that train.

Early Sunday morning, I got on -- or Saturday morning, I got on a plane to East Palestine with several of my colleagues. Over the hours and days following the derailment, we worked closely with first responders from dozens of nearby communities to deal with the unique hazards associated with this incident and to prevent an uncontrolled explosion. We followed available guidance, for example, from the Department of Transportation and the Federal Railroad Administration. We also communicated consistently with other stakeholders on the ground, including the manufacturer of the vinyl chloride in the tank cars in concern, OxyVinyls, and with unified command and the incident commander.

Norfolk Southern personnel, like myself and our expert contractors, were assessing a high-risk situation in real time. We drew upon our decades of experience handling HAZMAT emergency situations and relied upon information available in chemical guidance documents, which note that exposure to numerous conditions and substances, including air, oxidizers, certain metals, and excessive heat can cause explosive or violent polymerization.

Conscious of the need to act both swiftly and thoughtfully,

we carefully assessed the situation. Collecting information on site, we observed what we believed to be multiple signs of polymerization in the tank cars carrying vinyl chloride, or PRD failures. Our concern grew quickly because of an uncontrolled explosion of a tank car would be catastrophic.

Explosions involving tank cars carrying monomers or liquified flammable gases have occurred in the past with devastating consequences. And if polymerization was occurring, rapid action would be necessary to prevent an uncontrolled and potentially deadly explosion.

Based on -- because of factors that rendered other options too dangerous and potentially ineffective, a controlled vent and burn was determined to be the best and safest action by the incident commander given the circumstances and the information available at the time. The incident commander's decision was supported by all members of unified command.

Throughout the response, Norfolk Southern professionals and contractors exclusively focused on protecting the health and safety of those involved, including first responders, the surrounding communities, and our own personnel. I share the commitment with all Norfolk Southern personnel to protect the communities we serve and to make rail safe. Thank you.

MR. STANCIL: Thank you, Mr. Wood.

Okay. Mr. Dougherty, please begin.

MR. DOUGHERTY: Thank you. Our first question is to Chief

Drabick. Can you please describe your role as incident commander?

MR. DRABICK: My role as incident commander was being part of the unified command, and the one overall responsible for relaying the consensus decisions made by the unified command to everybody else.

MR. DOUGHERTY: So, could you tell us what happened from the time that you were told that a vent and burn action was needed, which you told us was February 5th at 5:47 p.m., until the time the ultimate decision was made to approve the action?

MR. DRABICK: We were advised by different steps of mitigation for this from Norfolk and their contractors. They felt that one car, and in particular holding vinyl chloride, may possibly have to be vent and burned due to a malfunctioning PRD and a temperature increase of that car.

They were monitoring that car, the temperature of it, that monitoring went on for some time with increases and decreases throughout. Those were reported to us. It got to the point where they thought that that was the only option and expressed that that was the only option left.

We held a meeting with all members of the unified command and members of political representation from both Pennsylvania and Ohio in the, what I call the computer room of the school, the elementary school where our command post was, primarily led by Governor DeWine where we had the members of Norfolk Southern's HAZMAT team and their contractors SPSI and SRS go through and

explain those processes and why there was a need for that vent and burn. It was portrayed to us and expressed to us that the cars were going through polymerization based on the signs that the cars were showing and that material that we had to reference. That process was explained and discussed in that meeting. None of the unified command members in that meeting or any of the agencies represented in that meeting stated any objection to that or had any other information leaning towards it was not going through that process. It was discussed a bit further the meeting had ended.

Shortly thereafter, Governor DeWine and I were taken down to a room to meet with the representatives from the contractors at Norfolk to discuss the vent and burn and the urgency to get it done very soon due to temperature changes, weather changes, time of day changes. We had to make that decision very quickly, and based on no objections or ulterior means of controlling it during that unified command meeting where we discussed it, the decision was made to go ahead and allow that process to happen to prevent that catastrophic failure of the railcar.

MR. DOUGHERTY: So, who made the ultimate decision to approve the vent and burn?

MR. DRABICK: The final yes was given by me based on the consensus of everybody in the unified command that there was no other option. No objections were given to that during that meeting when no other options were given at that point. So, as a

consensus of the meeting, it was the final okay was given by me as the incident commander based on the consensus of the unified command.

MR. DOUGHERTY: And how much time were you given to make the decision to approve the vent and burn?

MR. DRABICK: When we got taken down to that room, we were told we had 13 minutes to make the decision, and that had to do with convergence, with the weather, and the transitioning from day to night and the product in it's believed to be what state it was in and what process it was going through.

MR. DOUGHERTY: Okay. So, my next question is for Mr. Wood. Can you describe what level of monitoring and oversight do railroad operators have over the actions of its emergency services contractors?

MR. WOOD: We relied on our emergency response contractors and their expertise anytime we have a rail emergency. But ultimately, it's NS oversight, and what they do has to meet our approval.

MR. DOUGHERTY: And so, what were the responsibilities and the roles of your emergency response contractors SPSI and SRS?

MR. WOOD: In this case, and in just like any other response that they would do for us, especially involving tank cars, their first priority is life safety, securing the scene, they are brought in for their expertise on the products, vinyl chloride in this case is a mission chemical of the chorine institute. CHLOREP

contractors there's only three or four in the United States, and two of them are represented here and were part of this response. They handle and do intense damage assessment on tank cars, which is part of the decision tree how we handle these cars after a derailment or fire.

MR. DOUGHERTY: So, how much input did Norfolk Southern have in decisions made to mitigate the hazards posed by the derailed tank cars?

MR. WOOD: Again, in consultation with our contractors, there's a decision tree any time a tank car is involved in a derailment, whether it's loaded or unloaded. We go through whether the car can be moved, can the car be re-railed, can the car be offloaded. We rely on our contractors. Their expertise is in those damage assessments. And then following that decision matrix, we are going to take their input and advice. It's ultimately, in most of those cases it's going to be their personnel that's going to complete that work. But ultimately, anything that's done on one of our sites has to meet our approval.

MR. DOUGHERTY: Could you describe the process of vent and burn, why and when it is used, and what are the other options you considered in this incident?

MR. WOOD: Again, in all cases with tank cars, specifically in this case with pressure tank cars carrying a liquified flammable gas, your first option is damage assessment. Can that car be moved in any position that it's in? Can the car be

re-railed? In this case, re-railing was never going to be an option with this car due to the site. The car really in its state, it never were you truly able to do a full damage assessment on them because of their position, the extensive fire damage. So, between mechanical damages, fire damages to the car, part of your decision tree becomes how am I going to get the product out of the car. In this case, extensive fire damage ultimately destroyed the valving on top of the cars, so offloading these cars by normal means was not an option.

The next step would be to try to hot tap these cars. Again, when we were, our contractors were trying to do a more extensive damage assessment and assess these cars, absent pool fires for several hours, one of these cars PRDs suddenly went off again, and went off for 70 minutes. Leading to there was other safety issues associated with these cars that we had to deal with. It was ultimately decided that because of the time it would take and the peril it would put personnel in to try to weld fittings on these cars and manually drill holes to do a hot tap, that that was not an alternative. So, absolutely.

The very last alternative is vent and burn. When you get to that point, there are no other options available to us. And that was the case here.

MR. DOUGHERTY: Thank you.

My next question is for Mr. McCarty. Can you describe what services your company provided in connection with your emergency

response services?

MR. MCCARTY: Good afternoon. Thank you for this opportunity. At this wreck, we were dispatched for HAZMAT fire suppression assistance and whatever NS HAZMAT needed us to support them with.

MR. DOUGHERTY: Can you describe how you assessed the vinyl chloride tank cars, and can you tell us what you found?

MR. MCCARTY: Yes. And thank you for that question. The assessment started with Mr. Deutsch Friday evening, and as Mr. Deutsch testified this morning, the observations were right with them. Pressure tank cars, flammable compressed gas, in pool fires, a lot of general service tank cars also in pool fires, dark conditions very difficult to assess, but fundamentally, that's where the assessment started.

There was incredibly hot, active fire for several hours. There was some fire before that had been either burned out or extinguished before I even got on scene from the Pleasant Street crossing up to behind CeramFab. But from CeramFab to the east was still very much on fire with active pool fire throughout that whole area, the center area of the main load of the wreck. So that's where the assessment started was Friday night.

As Mr. Deutsch testified, it wasn't very long after we got firefighters in the safe clear and everybody rallied up back in the old firehouse or old police station, whatever building that is referred to where the command post started, it wasn't very long

after that that the first pressure relief device started getting active. They were active throughout the night on three cars, the one car on the west and two of the three cars in the center most, what we call the eastern-most pool fire associated with the VCM cars. They took incredibly high heat for a long period of time.

Again, as Mr. Deutsch testified, these thermal protection features on these tank cars, they're designed to hold for a hundred minutes, and it wasn't long after that that the pressure release device started activating.

So, part of the assessment also asked to the railroad what was the operating speed in which this train was operating when it derailed. In the fire rescue service in a vehicle accident, we call it mechanism of injury. Okay. It's part of the triage. Was this a slow-speed derailment where they just fell off the tracks, or was this a mainline train doing whatever it was, 47 miles an hour? That's the X factor in anyone's damage assessment because we don't know the dynamics of cold work, metallurgy, scores, gouges, wheel burns, dents, there's a whole litany of things that we look for.

We had no safe option to do those kinds of things, frankly, ever, too closely with a lot of hidden damage in the pileup throughout this weekend. So, it's big factor in this answer to the question of how this led to vent and burn. So, the assessment started Friday night, continued through the weekend.

There was a period on Saturday afternoon in which the pool

fires had subsided in those areas both on the west and in that one area that had the kind of behind Leake Oil Company. We watched them for an hour-and-a-half to two hours, because operationally speaking you asked earlier, what do we do for the railroads? We function to stay kind of a, we want to be forecasting and being operationally ready for when it's time to do something, right?

So, that afternoon, on Saturday afternoon, we had had the first two, what we call the assess and entry teams. The first west team and an east team with some objective entry goals to get a pressure gauge on the eastern-most vinyl chloride car, and with the state police flyover we were able to do that morning we could finally clearly identify the loaded isobutylene car, which we had not been able to do through the night or even that morning due to various smoke conditions and limited drone flights.

So, during those entries, it was later in the afternoon, somewhere in the 5:00, 5:30 p.m. era, the third VCM car in from the east, frankly, scared the hell out of us. It released pressure release in a violent, sudden, violent roar of fury, and it had been calmed for two hours prior to that. They all were calm. Everything we corresponded our assessment, pool fires died down to kind of burned out to the active pressure relieving subsiding. And that third car, there was something going on pressure building in that car without a fire under it. Okay? That's a key part of our damage assessment with internal pressures that are unknown at that point. But what we can absolutely know

is we observed them Friday night into Saturday, audibles, cycling, the sound in which they were releasing, that corresponds to some amount of internal pressure, it was exponentially worse and sustained for 70 minutes, and it had no fire under it for 90 minutes to two hours prior to that. So that's a huge factor in all of this. I'm not sure if I answered your full question.

MR. DOUGHERTY: You did. I'd like to talk about pressure and temperature measurements if we could. If you could give us an overview of how you collected those pressure and temperature measurements during the assessment of the tank cars and the tank car damage assessments?

MR. MCCARTY: Thank you for that one, too. Sunday afternoon someone reported seeing the western-most vinyl chloride car fire from protective housing burn out, snuff itself out. I heard folks speculating, oh, great. It burned itself out, was a theory on the table at the time. But in our world, we knew that it had leaks from those compromised valves and fittings and elastomers and O-rings and everything that keeps the HAZMAT in a package was thermally burnt out, compromised, from Friday night into Sunday, it had been burning just fine, and all of the sudden it quit burning.

Myself and one of our technicians went into that western-most area of the hot zone to look at that car specifically. Got up on top of a hopper car that was right next to it, the protective housing was rolled conveniently where we could walk on the hopper

car and get right to it, stood clear in case the PRD went off, but was able to get right next to protective housing, hold our breath from the air pack breathing in silence, and there was zero audible hiss, and that is another very important takeaway of fact-based reporting here. There was zero pressure hiss coming from that protective housing on the western-most car.

It had been burning quite well since Friday night, and by itself on its own with no offensive fire suppression, no tornado windstorm, nothing blew the fire out, and there is no audible pressure hiss coming from two liquid lines, a vapor line and a pressure relief device that had been feeding the fire triangle since Friday night, it was just a lazy whiff of a nuisance leak at that point. In fact, we got 0.0 on our meter in the breathing zone on top of the hopper car. We never got a meter reading until the meter went down inside that protective housing, and only then it was detecting some volatile organic compounds in the housing, not anywhere in distance away from the housing.

There were still little pot fires in the ballast and in and around the work area. So, even with that, from Sunday afternoon into Monday, it never had any kind of leak that it warranted a re-flash or a re-ignition. And again, this is very important to your question on the temperature monitoring.

We came off the top of that car, I noticed on the west side of that particular car, there had been jacket removed in the wreck, part of that crash wreck dynamics. The part of the jacket

that had been removed was no more than a couple feet long by maybe a foot wide, but I clearly saw an opportunity by my shoulder height that I could take my gloved hand off, put the back of my hand on the actual tank metal, not the jacket, and it was hot. I couldn't hold my hand there for more than three seconds. And it had not had a pool fire under it for several hours. I think that burned out sometime Saturday the day before. Okay.

So, it was at that moment I reported that to Mr. Deutsch with the railroad. He asked me to go back in with a thermal imaging camera and get a reading, and we did. That was a baseline, kind of just take a status check of it. This was Sunday afternoon, because I recall the temperature was either 130-135. I know it's in record somewhere. He asked us to trend it, and we did. For that hour, it went up to, like, 138. So, in that snapshot of time before we met with the chief and his staff, it was trending upward.

It was after the meeting in the chief's office or in the city hall that we were asked to start seeing if we could trend temperatures on the other cars, and this is why I really thanked you for this question because I clearly see where these data got spread to everyone involved here, and I'm pretty sure it's going to help clear a lot of things up.

So, our first entry team that took those readings on the eastern-most cars in the pool fire, there was no torn jackets. The best shot we had was through a golf ball-sized hole. And we

reported that, that hey, here's our best effort here, but without crawling through and belly crawling underneath these burnt cars and hot chemical schmoots, we can't put people in those positions to crawl underneath these cars in such hostile conditions to try to find a torn jacket, to try to maybe get a reading on the cars. We couldn't ladder up to the pressure plates because of what we experienced with that PRD just launching at a violent notice. We can't put somebody in line of fire for doing that, for checking pressure plates.

So, we did the first round of temperatures, our people were pretty sure and kind of concerned that they did not hit the tank metal with the point and shoot thermometer. We reported that. It went wherever it went, and then we were asked about a half hour later to do another round of attempts. And we kind of did that kind of good-faith challenge, are you sure this is worth it? And the answer was, yes, people want to see the data. And, basically, it was one of those things where I was kind of concerned that it might get misinterpreted. And sure enough, here we are, right? So, I heard Oxy's opening statement. Perhaps their chemists think this 65, 68 data was accurate, and I'm here to set the record straight, and I really thank you for that question because its bothered me when I read that in all the stuff prior to this day today, we, the contractor team and Norfolk Southern, we didn't put a lot of merit in those readings on those cars because we knew we thought we might be contacting with the thermometer the thermal

blanket or the insulation that may or may not have even been touching the tank car.

And then one last comment as to these thermometer readings. Even the one car on the west, keep in mind, that had been burning since Friday, we didn't even know if that one particular spot on a very large tank car, I can't say that it's representative of a whole, right? There's no great way to get accurate thermal readings from one particular spot on a tank car, and we had virtually no good shot to get good temperature readings on any of the ones to the east, well even the one that was still upright on the far east, it was, jacket was still in pretty decent shape.

So, I realize, sir, that was a long answer to your question, but I've been anxious to be here to help today to get this set straight, and I hope that was helpful.

MR. DOUGHERTY: Thank you. I'm going to turn the questioning over to Mr. Lynum.

MR. LYNUM: All right. These next few questions are going to be for Mr. McCarty again. A couple questions ago you did touch on PRD. I just wanted to go back to that. How did the actuations of the vinyl chloride tank car pressure relief devices factor into your assessment of the situation?

MR. MCCARTY: Can I just make sure I understood your question? So, the pressure relief device is activating. Your question is how did they factor into our assessment?

MR. LYNUM: Yes, sir.

MR. MCCARTY: Okay. Thank you. So, early in wrecks we believe in good faith that we hope that they activate, that they're set to discharge pressure. However, we've also seen in wrecks with fire impingement. They may, due to other factors, potentially release at an earlier pressure. However, going in early, you know, we have to believe that they're going to activate in this case there's one-third of burst pressure. In this case they were 247-and-a-half PSI.

So, and again, I'm doing this 35 years. They did their jobs early on, but to further answer your question, what made us very nervous throughout the weekend is when they quit activating, again, we originally on Saturday equated that to our window of opportunity to get in there and hot tap these cars in low holes and start thinking about those other options, right? Like, we were ready to get in there and weld nipples into low places to get extraction points to get liquids out of cars. And when that one car that I told you about earlier, when it went off with a fury, that pretty much told us that these PRDs were compromised, because that car that went off with a fury had been working all night and all day prior to that and was going off and releasing a lot less pressure. Something either gummed it up or mechanically messed it up, and either way it was incredibly dangerous.

MR. LYNUM: Okay. So, let's talk about that. What gave you the understanding that the pressure relief devices were plugged or gummed up, as you mentioned, with polymer?

MR. MCCARTY: So, we get trained by a lot of customers. We've been trained out at CERTCI at TTCI several times in a career. One of the core fundamental things that we're taught about polymer response is avoid heat. Heat can cook out inhibitors. In this case, we understood from some of the information from Oxy that they inhibited not necessarily with adding an inhibitor but by nitrogen purging to lower oxygen concentrations. Well, that's in the vapor space where that nitrogen would be, and these cars were relieving for several hours. So, anything in the vapor space nitrogen-wise would have been expelled early in that. They would have basically vented that vapor space out early.

Every time the PRD cycled up and down, there would have been a potential for a little bit of oxygen formation down there around that O-ring retaining cap at the top of the PRD. There was just so many variables to that, but the gumming up of the PRD's is something that's happened before in American railroading case studies, and it's a general statement, and I know Mr. Day beside me here, he may have some more specific references. I know there was a very noteworthy one years ago in Deer Park that we're both familiar with. I think he's familiar with a few more studies.

But we know from our training that polymerization can, in fact, plug up and gum up relief devices. And between that car doing what it did and the other ones just questionable, adding what happened to us on Sunday with the car to the west that was

fueling a fire nicely since Friday and then for no reason quit fueling three-dimensional fire, there's just limited scenarios on what makes that happen. And all data, all reference data that we had available to us, and it's several data sources and all of our combined years of training, we were all feeling polymerization.

MR. LYNUM: Okay. Thank you. Can I please get Exhibit D53 displayed.

Mr. McCarty, is that the tank car that you said that was gummed up after it shot out the flame from the PRD? I think it's OCPX 80179?

MR. MCCARTY: I don't have the list of car numbers in front of me, so I'm going to take your word for it that that's the car number, but that is, in fact, the one that I said scared the heck out of us on Saturday when we were having crews in there just kind of to the right of that, getting pressure gauge on the eastern-most vinyl chloride car, and we had a crew to the west behind that tree line to the west on top of the isobutylene car when that went off, and you know, we certainly speculated quote/unquote gummed up because it's a solid theory when dealing with this chemical and everything we've learned about it over the years and all the technical data that's available to us.

You know, whether it was, you know, polymer or mechanical, either way, that car, the one to the east beside it that never did seem to relieve the whole time, the one to the west of it beside it, it's still burning in that picture, and the other one all the

way to the west, they all three were in very hot pool fires for the same amount of time. And if you'll notice in this particular picture, there is no active pool fire underneath that car right now. There hadn't been a pool fire under that car for a couple hours. And prior to that throughout the night and throughout the day, it had been relieving quite nicely, which gave us the confidence when they all quit relieving and the pool fires died down, that gave us the confidence to get in there for additional assessment efforts.

MR. LYNUM: All right. Thank you, Mr. McCarty. These next few questions are Mr. Wood.

First question, sir, how did you assess this pressure relief actualization vent?

MR. WOOD: Keep in mind we were running a 24-hour operation here. So, things that happened during daytime, I didn't see all of. Things at night, I did. I will tell you on Saturday night I observed these cars from videotape all night. These cars did exactly what Drew just explained. These cars would cycle, they would generally do a quick cycle. They always kept flames around these protective housings. Come about 6:30 on Sunday morning, a lot of the flames started dying down because the pool fires had started dying down.

Our assumption and my assumption was, again, training that you take, we expect damage to the PRD's, especially with fire. Especially with this product. Pitting, O-ring pitting, damage to

the O-ring housings that should have made those PRD's once the fire subsided to still weep and still feed these lazy flames that they kept for when they cycle off, they never went out.

Now, when the fires actually extinguished, I had left the site, so I was updated later on. But I would have made the same assumption that Drew and our other personnel there, that something was causing the PRDs that they were no longer functioning properly.

MR. LYNUM: Okay. Mr. McCarty earlier was talking about the difficulty of trying to get good temperature readings on those tank cars. How did monitoring the temperature of the tank cars originally come about? What prompted you to do that?

MR. WOOD: Again, we wanted tracking of the temperature because temperature is a sign of problems going on in the car specific to monomers. These monomers, again, when they're going through polymerization, that's a large heat-producing event.

We did understand an external temperature from the outside of a tank in extremely cold outside temperatures, it's not an accurate temperature of the car. We were more concerned when it was relayed to us a rise in temperature. Not so much what that actual temperature reading was getting but the fact that the car hadn't been in a pool fire for hours and we were still seeing a temperature rise. That was the concern that we wanted to keep track of temperatures. Because there could become a point in time that if the temperature started rising too quick, all alternatives

go away. You couldn't safely put anybody near those cars to even perform a vent and burn.

MR. LYNUM: Could you please describe what communications you received and what communications you provided regarding the tank car temperature monitoring.

MR. WOOD: During the night while I was present, the temperatures were being relayed hourly to the command post, and I was sharing those with the incident commander and unified command. That was done throughout the night.

MR. LYNUM: All right. Thank you. I'm going to turn the questioning over to Mr. Stancil.

MR. STANCIL: Thank you. Mr. Wood, I'll continue with you for a moment. Earlier in your testimony, you mentioned a matrix that was followed. Is that something like some form of checklist that you used as you were assessing the tank cars?

MR. WOOD: We don't use a formal checklist, but these processes are outlined in every tank car training class, railroad response training class, and handling of tank car emergencies. You always start with from a derailment scenario, they kind of go step-by-step. Can the car be re-railed, put back on its tracks, and moved on either to destination for to another location? If the car can't be re-railed, can it be moved and situated in such a manner that will facilitate easy offloading through the normal loading and unloading valve. So, can the car be offloaded either into another railcar or into trucks.

If that can't be done, then the next process would be, well, if I can't use the valves to get the product out of the car either due to the orientation of the car because I can't move it, or because of damage to the valves, which is the case here, then the next step would be to hot tap, to actually build fittings, for lack of a better term, onto the car to allow you to be able to offload it if that can be done safely. That's the same set of matrix that are going through with every tank car assessment that is handled in a derailment, whether it's a general service car or pressure car, as these were.

MR. STANCIL: Thank you for that clarification. So, you weren't actually referring to a document that Norfolk Southern generated in response to this derailment?

MR. WOOD: No. This is --

MR. STANCIL: This is just a procedure. Not a document. Okay. Got it.

During your earlier interview, you said the one car in question, and I believe you were referring to OCPX 80370, or what you had described as the west car, Saturday night to Sunday morning its shell temperature was about 135 degrees Fahrenheit, and then within an hour it increased to 138 Fahrenheit.

Then you told Chief Drabick you believed these cars were polymerizing inside, and eventually, if you did nothing, the cars would come apart in a violent explosion, is that your recollection?

MR. WOOD: When the situation with the temperatures and the concerns of the car were brought to me, I did have a conversation with Chief Drabick about what we believed was going on with those cars. I did explain we only had this much data on one car, but we felt sure if the problem was going on in that one car, the other cars had been exposed to the same conditions, we felt the same thing was going on with them.

MR. STANCIL: And when was that that you first told Chief Drabick of this concern over the tank car temperatures?

MR. WOOD: I'm going to say I originally spoke with him privately in the fire station somewhere between 4:30 and 5:00, and that's when the chief set up a meeting with more consolidating meeting where the briefing could be held and Drew, Chip, and the other contractors and other NS personnel could kind of explain what we felt was going on. I was not a party to that whole meeting. I was part of the NTSB investigation, so I actually had to leave, was not able to attend that entire meeting except the start, and I provided basically the same briefing that I gave to Chief Drabick to the NTSB folks that night at Youngstown.

MR. STANCIL: And just to be clear, that was February 5th?

MR. WOOD: Yes, sir.

MR. STANCIL: Sunday, February 5th. Thank you.

Please display Exhibit D8.

And Mr. Wood, this is a graph that we constructed of the tank shell temperature measurements collected by your contractor SPSI.

The red arrow on the left is where you told us the temperature had risen to 138 Fahrenheit, and then you decided that a vent and burn was necessary, is that correct?

MR. WOOD: I would say when we became concerned about the temperature rise that we believed that our only alternative left was probably going to be a vent and burn, and those were the words that I relayed to him.

MR. STANCIL: Yes. Okay. Would you explain what was happening during the rest of this temperature trend, and this is for take car OCPX 80370. What was going on during the rest of this time period leading up to the vent and burn?

MR. WOOD: Again, all through the night on Sunday, we were taking hourly temperatures that were being recorded. Again, I ran nighttime operations there, so I was the one, either myself or Jon Simpson, were recording these temperatures and relaying them on to unified command. The temperatures basically fluctuated all night.

Then, the next morning came in place during the time where we felt like a vent and burn was going to have to take place, we had our contractors' making preparations in case that decision was made. That's basically what took place through the night.

MR. STANCIL: Okay. Would you agree that with the exception of the one spike in temperature during the middle of the night, it appears that the temperature was on a downward or a decreasing trend looking at this graph?

MR. WOOD: Looking at the graph, I would agree that that was

the data we were receiving from an external temperature of a tank that I would in no way think is an accurate temperatures of the core temperature of that car.

MR. STANCIL: Okay. And, well, that gets into the next question, then. Why was this tank car still a concern when its temperature was decreasing?

MR. WOOD: I will say the car was a concern because of our original concerns of it. It's not just polymerization that's necessarily a reason why this car was rendered, nothing else could be done with it. Mechanical damage, the sheer amount of heat damage to the valves and the tank car also have to be considered. So, just an external temperature on a tank with a slow downward trend in very cold temperatures, again, polymerization is not necessarily the only thing that would concern us about a high-pressure car that had sustained these type of damages.

MR. STANCIL: So, did it suggest to you that polymerization was continuing or are you saying that potentially it wasn't. I'm not understanding your answer.

MR. WOOD: My answer is there's no way to tell for sure based strictly on an external temperature of the tank. That doesn't discount any of the other problems that are a concern of that tank from heat damage and mechanical damage because this is a pressurized liquified flammable gas inside this car aside from the polymerization. There are circumstances where that's a hazard whether polymerization is going on or not. Just this doesn't tell

me one way or the other whether I could make a determining factor on the polymerization.

MR. STANCIL: Were there any other indications that polymerization was occurring?

MR. WOOD: Again, we believed so based on the behavior of the PRD's. The lazy flame stopping, the actions that the PRD's took over the previous 24 hours. Observations we were making in real time led us to believe that that was going on, yes.

MR. STANCIL: Okay. You can bring the exhibit down.

Mr. McCarty, you told us during your interview at some point the temperature of this west car, again, it was OCPX 80370, peaked out as 138 Fahrenheit and never got worse. So, the same question for you: Why was this tank car still a concern in your mind?

MR. MCCARTY: Thank you for the question. And I found out after our initial interview that my guys that were doing a lot of the monitoring for Mr. Wood's staff that it did go up once, but they kind of speculated it might have been because of a little festering fire flared up and they hit it with an extinguisher. But it's neither here nor there.

We had these data resources while conflicting, we had at least two data resources. Mr. Day had a reference from New Jersey Health Department that said polymerization can start at 125 Fahrenheit. Chlorine Institute has a recommended statement in its pamphlet 171, and if you do a tank shell temperature anything over an ambient can be an indicator of internal polymerization. We had

the, again, my biggest fear was when that fire was burning nicely since Friday night and it choked itself out from the fire triangle, you know, if you've got O-rings and things that are burned out compromised, the only thing that snuffs out a fire fuel feed is from something inside the car. That just process of elimination and deductive reasoning and 35 years of HAZMAT experience and firefighting.

I can't, and as I said, I didn't trust from the moment I put the back of my hand on that car, it's one sample point. I couldn't even tell you if it was liquid space or vapor space. It had been burning since Friday night. It's certainly not representative of the entire tank car. And it's even worse with the data from the other three cars, and that's why I wanted this committee to keep that all in perspective as you look at these trends and all of this data, these cars were in tremendous heat for several hours. Those cars are well insulated. That heat was trapped in those cars, and we have data that's suggesting that it could very well be polymerizing. We have 35 years of experience and multiple clients training us over the years that suggests we're in the classic fearful situation of these cars polymerizing from the inside.

And tactically speaking, there was enough people theorizing that the three that were burning well since Friday night might be empty. And that's what kind of pulled us away from hot tapping because nobody can weld anything on without a liquid space-filled

car. If this was a partially loaded tank car, we'd have to get low in the liquid space to have the absorption of that heat of welding. Otherwise, this town, we'd be talking about, as chief said it's well on this morning, had we done anything but vent and burn, it would have taken one of those cars and one misstep with welding or any other misstep or one car with a critical damage hidden that we can't see coming apart in a very, these are not wave-a-magic-wand operations.

These are very sensitive, deliberate, time-taking operations that put people at risk and put this community at risk. And all data resources and all of our combined experiences had us with a legitimate concern for polymerization and lack of tactical options except vent and burn, which is a known, proven tactical option, which it's the last-ditch tool in the toolbox, but it's a meaningful tool in the toolbox, and that's precisely why the AAR and FRA developed it years ago.

MR. STANCIL: Thank you. Thank you.

Okay. Mr. Day, I'd like you to first tell us a little bit about your expertise teaching other emergency services contractors and firefighters about responding to incidents involving polymerizing materials. I know you talked to us about that during your interview.

MR. DAY: So, I've been in this business for 41 years. I've been an emergency responder, basically, all my life from a volunteer firefighter, paid firefighter to a HAZMAT technician.

As I grew up in this business working with my dad, working with a lot of folks that I consider my mentors, I have a really good, I have a lot of base folks that I have learned from.

Over the time, I've been brought in by SERTC out of Pueblo, chemical manufacturers, to put on emergency response training for a variety of different kinds of products, whether it's vinyl chloride, chlorine, general service products, bulk solids, covers the gamut. So, I've got a lot of experience, and I've lived it, I've done it for 41 years, so I'm brought in and asked to put on certain parts of training classes.

But when you put on certain parts of training classes, you're there for a longer period of time, so I've been exposed to some of the best training folks throughout North America in all different kinds of chemicals.

MR. STANCIL: Okay. Well, thank you for that. So, how many other vent and burn actions do you have experience with personally?

MR. DAY: I've been involved in approximately 30 vent and burn operations throughout North America.

MR. STANCIL: And how many of those involved vinyl chloride?

MR. DAY: Only one other incident that I was a technician on-site.

MR. STANCIL: And which one was that? Where was it?

MR. DAY: Livingston, Louisiana in 1982.

MR. STANCIL: Okay. So, referring back to that temperature

graph we had displayed on the screen earlier, what does that temperature trend tell you about what was occurring inside of that tank car, OCPX 80370?

MR. DAY: You're asking me to speculate what's going on, and I can't, I will not speculate in front of this group. I will tell you that based on training that all of us at this table have gone to, gone through, or performed, put on, once you have a stabilized or inhibited product that has gone through a temperature, a massive temperature increase, some of the best chemists out there in the HAZMAT world teach us as responders that if the material is exposed to elevated levels of temperature, the inhibitor has the possibility and probability of going away. Nobody can tell us where it goes, but it just does not operate anymore. There's plenty of polymerizable polymers, monomers that are shipped up and down the rail, and probably the biggest takeaway from some, most of these training classes are that if your PRD's are going off and all of the sudden the PRD's stop going off, that's a telltale indicator to first responders that something bad could possibly be going on inside. And you don't have a lot of time to continue to generate data.

MR. STANCIL: I appreciate your answer, sir. Thank you.

Please display Exhibit D26, Section 10 of that document. And I'm going to come back to Mr. Wood and ask you what role does a manufacturer's safety data sheet serve during a hazardous materials emergency response?

MR. WOOD: Is it one source of data and information for, that's chemical specific that comes from the manufacturers of the product. So, they are a, they are a tool in the toolbox as a reference manual.

MR. STANCIL: And is that something that's typically referred to during every emergency response to a hazardous materials incident?

MR. WOOD: I would say as a general rule, yes. You know, first responders will start with the basics with the ERG Guidebook. Ultimately, most of them are going to ask for an SDS. We always ask for an SDS because they're going to use it at some point in time down the road outside of just the emergency response side of an incident. So, yes, they're regularly asked for.

MR. STANCIL: Okay. All right. And on the screen what we have is a section from the OxyVinyls safety data sheet for vinyl chloride, vinyl chloride monomer. And I'm going to ask you what statements in this data sheet guided your remediation decisions for these VCM tank cars?

MR. WOOD: Well, the first point we're going to go to is the last segment there, the hazardous polymerization section.

MR. STANCIL: Okay. Can we zoom in on that a little bit more so that people can see it and scroll down just a little bit. Yes, sir. Thank you.

Go ahead, Mr. Wood.

MR. WOOD: Yes. So, just reading through it, when

polymerization can occur, exposure to the following conditions are mixtures with elements and materials can cause explosive or violent polymerization of VCM: Air, sunlight, excessive heat, oxidizers, you go through the list. Avoid elevated temperatures, those kind of things we're going to, that's the part in this particular situation of the SDS that's going to jump out to us because these cars had been exposed to extreme heat for a couple of days.

MR. STANCIL: And can you characterize how this influenced this your decision making, these statements?

MR. WOOD: I would say it was part of the decision-making tool. It was one of the tools. You're going to use guidance documents, and you're going to lean heavily on the experts who deal with these type of tank cars and these materials on a regular basis. So, it's just part of the decision process.

MR. STANCIL: Okay. And Mr. Day and Mr. McCarty, I'll ask you the same question. Start with Mr. Day. Is there any specific statements on the data sheet that affected your decision making?

MR. DAY: The same one that Mr. Wood read. I won't reread it. At the very top of that document, if you'll scroll up, it says chemical stability, and the bottom line however, may violently polymerize or generate other hazardous conditions when not stabilized and/or stored correctly. And, basically, these tank cars were not stored correctly.

MR. STANCIL: And Mr. McCarty, did you also refer to this

data sheet during the response, and what would your reaction be?

MR. MCCARTY: Yes, sir, we did. We did have access to the safety data sheet as well as other resources. And as I recall, it's not just these two paragraphs. If you would look at the data sheet from top to bottom and left to right and all pages, it's at least six times that it refers to the risk of polymerization, and that's just this one document. We had other access to things in our response trailer from the handbook of compressed gases, from the railroad's Bureau of Explosives Emergency Action Guides, Chip had mentioned this New Jersey Health Department document that we also pulled up to, Vinyl Institute, Chlorine Institute, they have technical documents, and in fact, in the vinyl documents, in closing paragraph at the end of the Vinyl Institute's recommended practices, their closing paragraph reads word-for-word exactly where this community was involved in, there were no other tactical actions safe to execute without tremendous risk to this community. And the Vinyl Institute's recommendation is exactly what we did.

MR. STANCIL: Yes, sir. Thank you.

Okay. Mr. Thomas, I would like for you to describe OxyVinyls technical support role for incidents such as what occurred in East Palestine.

MR. THOMAS: Yes. So, what we do is provide technical support with our experience in making the products that are involved in an incident. And, you know, we're there to help drive the safety of those folks that are responding. We're there to

equip them with all of our experience in making the product so that they can navigate through the decisions they need to make on how to manage it with the best information on the product as we can give them. And the SDS is part of that, but certainly the STS is a broad-based documents covering manufacturing scenarios, industrial facilities, labs, storage, rail cars, and in all of the sections you see that were referenced, there's always a reference to unless it's properly stabilized. And if you look at the transportation Section 14, it talks about, you know, the rail cars being stabilized, VCM.

In our case, the VCM stabilized with low oxygen, some of the chemical inhibitors that they talked about can go away with fire. But when you stabilize it with oxygen, you don’t lose the stabilization even in a fire. If the top space vents, it just fills up with more pure VCM, and so, you don't have a potential for an initiator to get in.

So, these rail cars at 99.99 percent purity, we're giving that kind of information to folks on the ground saying, hey, here's what we think we will do, we're applying it to the specific details of their situation, and really just trying to provide safety support on our product so that they can stay safe, protect the first responders or communities. That's kind of the role that we provide.

MR. STANCIL: Okay. And when you say stabilization with oxygen, you mean low oxygen?

MR. THOMAS: Yeah. So, the process is to remove oxygen less than 200 parts per million, and at that point, if your vinyl is at that purity level and you stabilize it, either with an added inhibitor which is allowed or you remove the oxygen level below 200 parts, then there is no initiator for that material to polymerize. So, you would have to have some kind of external input into that VCM in order for there to be any potential of polymerization.

MR. STANCIL: And I think you just answered the question, but maybe let's go into it a little deeper. How does stabilization protect vinyl chloride monomer from polymerizing in a transportation scenario?

MR. THOMAS: Yes. So, in our case, you know, where we're doing the low oxygen below 200 parts, what it does is it just, it prevents you from having an initiator that can break that double bond in VCM and create an unstable monomer. So, at that purity level with no oxygen, oxygen is a potential initiator, when you're below 200 parts, that's .02 parts of the material, you just don't have anything to initiate the reaction and VCM polymerization requires an initiator to polymerize.

MR. STANCIL: Okay. And I think during your initial presentation, your opening presentation, you mentioned a technical support team that you put together at your headquarters. And so, what questions came up about the OxyVinyls safety data sheet during your discussions with Norfolk Southern and its contractors,

SPSI or SRS?

MR. THOMAS: I don't think there were any specific questions to the document itself. I think, you know, the conversations certainly were around polymerization. The concern on Saturday with the railcar of concern at that time. So we're talking about the details without specifically referencing the document, if you will.

MR. STANCIL: Was there anything in the safety data sheet that conflicted with the advice that you were providing to the folks on scene?

MR. THOMAS: Not from my perspective. Not for this incident or this scenario. I mean, that's the technical expertise. We had over 250 years of vinyl and PVC manufacturing experience on the phone, and so, we're just trying to pool all of that knowledge to help the individuals that are on the ground.

MR. STANCIL: All right. Well, please tell us some more about your communications with Norfolk Southern and its contractors. Who was your main point of contact there and what sort of technical assistance did you provide to them?

MR. THOMAS: So, Saturday and Sunday, we had conference calls, and so, there was a special situations team, as I mentioned, that we formed in Dallas, and we had several folks calling in that weren't in the room in the special situations room. But we had phone calls on Saturday, and we had a conference call Sunday morning. And then Mr. Smith arrived Sunday afternoon

with a couple of other folks to really just be a resource on the ground to help support them in whatever we way that he could.

MR. STANCIL: And so, what did you or your OxyVinyls team understand given the information provided by the organizations on scene? What did you understand about what was happening with the tank cars?

MR. THOMAS: Yeah. So, at least through the two calls, you know, what we understood is what was well described by Mr. McCarty earlier, there was a lot of concern about one of the rail cars in the pool fire that had gone off. I believe my recall was 30 seconds every two minutes for eight or 10 hours through the evening. So, it had really been working in that pool fire. And then all of the relief devices went off, and it went off again for 60 or 70 minutes, and I think he had mentioned they were getting materials together to do a hot tap, and that one went off and it gave them pause.

So, our initial guidance was, you know, we didn't think that was polymerization, but here's how you know. If you can go take a temperature on a railcar, you'll know for sure. And when you're putting people's lives at risk around the railcars, you need to know for sure. Certainly, we're all on the same mission on that front.

MR. STANCIL: So, yeah, was there a consensus amongst your team at OxyVinyls in Dallas as far as the chemical behavior of the vinyl chloride monomer, were there any differing opinions or what

was going to happen?

MR. THOMAS: Not on the phone calls we had. I mean, we were trying to communicate. We didn't believe polymerization was going on, but more importantly, I think what we told them is how they could know for sure. Don't take my opinion for it when it's your safety at risk. You go prove to yourself if it's safe to get a temperature, as they well describe, you would know for sure because these reactions are extremely exothermic. And if you're talking about rupturing a railcar, you're talking about being at 320 degrees, and you can take that temperature anywhere on the railcar skin and know you've got a problem. So, it's a long way to go, and it will be very obvious if you have that reaction going on.

MR. STANCIL: So, the temperature trend that we had on the screen earlier, what does that tell you about polymerization?

MR. THOMAS: Yeah. So, my understanding is that for that railcar on the west end, one, our view when it was described, that railcar was leaning against the PVC car that had heat, smoldering fires going on and, you know, I think I read in Chief Drabick's notes that maybe around midnight is when they had that fire, or up near it. The temperature had dropped, the fires were up kind of near it, it heated up to 139, they put the fire out and it immediately dropped to, you know, back to 129.

So, that trend of 12 degrees, you know, over 22 hours of monitoring, that also corresponds with a 20 PSI drop in pressure

in the car, it's conclusive to all of us that polymerization was not going on in that car, and the location where they were taking the temperature on the skin is valid enough to draw that conclusion.

MR. STANCIL: Is that what you told Norfolk Southern and its contractors?

MR. THOMAS: We never actually had conversations about the trends. You know, the two data points that we had Sunday night was the 135 and 138. And so, you know, what we knew with the first two data points was that at 135 or 138, you know, shooting at the spot where he had, you know, felt the railcar, we felt confident we were on the skin. At that temperature, the pressure in that railcar is 121 pounds. So, safety valve on that car is 247, design is 300, and the burst pressure is 750. The point being, it's got a long, long ways to go from 135 degrees to present any threat of over pressurization, which was certainly a concern for everybody on the scene.

MR. STANCIL: And how much of that did you tell Norfolk Southern?

MR. THOMAS: Well, we weren't on the call once we got the data. Once the communication was going at that point, Mr. Smith was talking to the folks on scene once he arrived, and then he came back and brought concerns to us about the temperatures. And so, we gave that information to Mr. Smith, and he went back and advised them again that polymerization wasn't occurring from our

perspective, that you didn't have the temperature to support it, but he would have to answer or the others in the conversation would have to answer the specifics of that. We weren't actually talking to them directly at the time.

MR. STANCIL: Okay. Thank you, Mr. Thomas.

MR. THOMAS: Certainly.

MR. STANCIL: Mr. Dougherty, please continue.

MR. DOUGHERTY: Thank you. Mr. Smith, Mr. Thomas touched on your role in East Palestine, but could you please explain what your role was on the ground?

MR. SMITH: Sure. We were there to provide technical support, to answer questions in regards to vinyl chloride monomer, and also to be a liaison between what was going on on the ground to our folks in Dallas.

MR. DOUGHERTY: And could you describe in your words what communications did you have with Norfolk Southern, SPSI and SRS about the behavior of vinyl chloride monomer in tank cars, specifically with polymerization?

MR. SMITH: So, primarily that conversation occurred Sunday evening after a call with our Dallas folks when we had communicated, we had talked about was there polymerization. And so, Sunday evening, the communication was we saw no, nothing that would cause us to believe that polymerization was occurring. There wasn't any type of temperature rise that you would anticipate seeing with polymerization.

MR. DOUGHERTY: Thank you. So, just to clarify, did you suggest at any time that polymerization could be concurring within those tank cars?

MR. SMITH: Yes, I did. So, there were two meetings that I had with SPSI, and then there was a meeting, if I kind of give you a quick timeline, we arrived on the scene roughly around SPSI's trailer shortly after 2:00. Had a meeting with them probably starting around 2:30 or so and lasted maybe less than an hour. Around an hour. And then we drove to the firehouse to meet with NTSB and to meet with Norfolk Southern.

So, there was concerns that were raised in our meeting with SPSI about polymerization about that one particular car that was at 135 degrees Fahrenheit. There were concerns about that one, as well as concerns about polymerization that were raised to us from SPSI about the tank car that had vented for 70 minutes.

And so, when we got to the firehouse and talked with NTSB and Norfolk Southern, at some point during that conversation, my partner received a text indicating that the temperature had gone up three degrees on that western-most car. And at that point I made a comment that it could be polymerization occurring.

I would like to say in the context of that discussion, I made very clear I was not a polymerization expert. There were several questions that were asked of me about temperature that could start polymerization, expansion ratio, polymerization, recommendations regarding polymerization. I made very clear that I was not an

expert on polymerization. I was going to get with the people in Dallas and discuss that with them.

And then from there, it was communicated to me by Mr. Williams with Norfolk Southern that I was to communicate with SPSI, and then they would communicate with Norfolk Southern and Norfolk Southern would communicate with NTSB.

And so, at that evening meeting after our discussion with Dallas is when I made the communication that there was no indication of polymerization occurring.

MR. DOUGHERTY: Thank you for that. So, Mr. Wood, with that, in your earlier interview with us, you told us that you had received differing opinions from OxyVinyls whereas some said they did not believe that vinyl chloride would polymerize while others said it would. And could you elaborate on which opinion you acted upon and why?

MR. WOOD: What I will say, I was not party to all conversations between Oxy and Norfolk Southern and our contractors. That was the basic message that was relayed to me through those meetings at shift change, that they had gotten some conflicting information, whether it be from the SDS or from actual communications. I can't speak to the exact wording because I was not party to those conversations.

MR. DOUGHERTY: Thank you for that.

And so, Mr. Wood, could you tell us, I guess, how you came to the understanding as you announced on February 5th that there was

a critical temperature of 185 degrees Fahrenheit, at which point there would be a runaway polymerization action that could lead to a catastrophic rupture of the tank cars.

MR. WOOD: The reference to the 185 degrees was some conversations that I had with Drew McCarty. I believe, as I understand it, that as temperature rises, if it ever got to a certain point, that that curve of reaction to temperature goes up sharply, and that if the temperature ever got anywhere approaching towards 185, that they wouldn't put any personnel around those cars for that fear.

MR. DOUGHERTY: Thank you. And back to Mr. Smith. How did the plan to conduct the vent and burn action come up and when?

MR. SMITH: You're asking me how did -- how did I learn about the vent and burn --

MR. DOUGHERTY: Correct.

MR. SMITH: -- is that what you're asking? Okay. So, I learned about it first at the first meeting with SPSI, which occurred probably started around 2:30 or so. Sometime between 2:00 and 2:30. During that meeting, there was discussion regarding vent and burning.

MR. DOUGHERTY: Was there ever any disagreement that was expressed to you over the technical advice you provided?

MR. SMITH: Over the technical advice that I provided, which would have been, really, that evening. I don't know if there was necessarily a disagreement. I would say that in that particular

instance, Drew, we communicated, this is what we believe is happening or is not happening, Polymerization is not happening, and then Drew outlined his reasons for moving to vent and burn.

MR. DOUGHERTY: All right. Thank you for that. And I'd like to turn the questioning over to Mr. Stancil.

MR. STANCIL: Okay. Dr. Carroll, I know it's been a long day so far and we haven't gotten to you yet. Please describe polymerization of vinyl chloride monomer and tell us about the conditions under which stabilized vinyl chloride will polymerize.

DR. CARROLL: The polymerization reaction is the reaction that forms a long chain of plastic, if you will, it goes from being links, individual links of vinyl chloride, and the polymerization reaction creates a chain. On the average, that chain is about 1500 links long.

The conditions under which vinyl chloride polymerizes is in the presence of what's known as a free radical initiator. And without that initiator, the polymerization cannot occur.

MR. STANCIL: Okay. And what -- what are some of those initiators? What specific conditions have to occur before polymerization can happen?

DR. CARROLL: Initiators are typically organic chemicals that are added that have a thermally labile bond. In other words, heat can activate the initiator. And when it does, free radicals are created, and the polymerization reaction starts making that chain that I referred to.

MR. STANCIL: Okay. And would you comment on the statements you've heard today regarding the tank car temperatures, the critical temperature of 185 Fahrenheit, and whether polymerization had occurred in those tank cars?

DR. CARROLL: I have no idea what a critical temperature of 185 degrees means. Vinyl chloride does not polymerize only on the action of heat. It does not spontaneously polymerize.

MR. STANCIL: Okay. And what is a runaway polymerization reaction?

DR. CARROLL: So, I think there's been some confusion of language here. And I want to be very clear. When we talk about spontaneous polymerization, we're talking about making polymer without any initiator. And there are some monomers for which that can occur. One of them doesn't happen to be vinyl chloride. When you have a runaway reaction, that's in a batch that has been initiated, but typically, in fact, in almost all cases, it happens because you've lost cooling capacity. And the way it happens, I mentioned that the initiator is sensitive to heat, so in a batch where you've lost your capability to maintain a temperature, where you've lost your cooling, as the temperature rises, more of that initiator is broken apart, which creates more free radicals, which creates more polymerization and more heat, and it becomes kind of a cycle. The key here is that, once again, a runaway reaction only occurs within an initiated batch.

MR. STANCIL: And when you have that sort of reaction

occurring, how does the temperature and pressure respond to that? What happens?

DR. CARROLL: As the temperature goes up, the pressure goes up. And this is well understood, and I think in the materials that were distributed in the docket there's a curve that shows the pressure of vinyl chloride at certain temperatures, and I think you also heard Mr. Thomas refer to various temperature and pressure changes over time.

MR. STANCIL: Okay. And how does the appearance of polymer differ from monomer?

DR. CARROLL: The monomer is a liquid. It's actually a vapor at ambient temperature. It boils at minus 13 C. So, under ambient temperature, it would be a vapor. It is a liquid as used because it's under pressure, and the polymer is a white, grainy solid that would look a little bit like salt or sugar.

MR. STANCIL: Okay. And do they both have the same flammability?

DR. CARROLL: No. The polymer is less flammable than the monomer. So, for example, and some of you may have this experience as well. The PVC pipe itself will not sustain combustion. You could put a torch to it, and the flame goes out. Obviously, and you can check this from the specs of the material, vinyl chloride has a flammable limit. There's both an upper and lower flammable liquid for vinyl chloride -- limit for vinyl chloride.

MR. STANCIL: Okay. And how do the hazard warnings and the OxyVinyls safety data sheet compared to other scientific literature and guidance contained or provided by organizations, such as the Chlorine Institute, the National Institutes of Health, or the Emergency Response Guidebook?

DR. CARROLL: One of the things that I look for as a scientist is I would like to go back and see the original references on which guidance was based. I have to say I was unfamiliar with the term explosive polymerization, because that made no sense to me in the years of experience, I've had with vinyl chloride.

I did manage to track the language down, and for that language, it goes back to something called Bretherick's Handbook of Sensitive Chemicals. It cited two articles published in the early 1970's that because of their age could no longer be obtained electronically. But what the language in that, in Bretherick's says, "vinyl chloride tends to self-polymerize explosively if peroxidation occurs." And we haven't talked much about peroxidation in this, but it's the reason why low oxygen in the presence of vinyl chloride is a stabilizer. The reaction that it prevents is a very slow reaction between vinyl chloride and oxygen. Oxygen cannot initiate high polymer. You cannot, with a trace of oxygen in that railcar, polymerize it to a solid. However, if you have excessive oxygen in the presence of vinyl chloride for a long time, you can make a short polymer that is a

co-polymer of vinyl chloride and oxygen. And that material, if you make enough of it and if you isolate it, is shock sensitive. So, what you want to do is to limit that possibility by limiting the amount of oxygen in the presence of vinyl chloride.

MR. STANCIL: Okay. Can you describe any discrepancy between your knowledge of the chemistry of vinyl chloride monomer and the statements that are listed in the safety data sheet?

DR. CARROLL: I don't know that I'm capable of judging the safety data sheet. I didn't assemble it, and I didn't participate in it. And what's more, I'm not an expert on the Hazard Communication Standard. So, in that sense, I don't know what exigencies the people who were putting the safety data sheets together are under or what requirements they have. There may be good reasons for warning about the things that they've warned about.

What I can tell you about, though, is my knowledge of the polymerization chemistry and the chemistry of vinyl chloride. And what I can tell you is that you cannot make PVC without an initiator.

MR. STANCIL: Okay. Well, how chemically reactive is vinyl chloride monomer with aluminum and other catalytic metals?

DR. CARROLL: This is another facet that I really wanted to try to run down what the origin of this advice was to understand it. And I believe I did so in two cases. One, is in the Encyclopedia of Chemical Technology, and otherwise, I also found

original references referring to this.

In fact, what both of those references are warning about is the presence of trace hydrochloric acid, that is to say hydrogen chloride, HCI, and water in vinyl chloride monomer. And that if you put impure vinyl chloride monomer that had HCIx and water in the presence of aluminum or copper or iron or steel, it would corrode the aluminum copper, iron, or steel because of the action of the hydrochloric acid. If there is an implication that somehow aluminum, copper, iron, and steel react with pure vinyl chloride, that's simply not correct. But the origin of those statements and those warnings had to do, I would say, more with the purity of the VCM and the impurities in it than it does with a native reaction of vinyl chloride and those metals.

MR. STANCIL: Okay. And would you please tell us about the combustion products from burning vinyl chloride monomer?

DR. CARROLL: There's one article in the literature that has done an extensive study of the combustion products of vinyl chloride. And those products generally are carbon monoxide, hydrogen chloride, and under certain circumstances, trace phosgene. And I know that there were news reports during this of phosgene as a potential side product of combustion. The article itself does the combustion in a laboratory in a glass combustor. So, it's a bit different laboratory setup than what we had during the vent and burn. One of the places where they got the least amount of phosgene was in the case where they were simply metering

vinyl chloride in with enough ambient air to combust it and doing so. So, the point here is the conditions under which you do the combustion matter for how much phosgene you get.

On the other hand, the author of the article notes that in all of those cases, even with the trace phosgene present, you had well over 600 times as much hydrogen chloride generated, and the author notes that because of that, the area would be untenable regardless of the phosgene.

MR. STANCIL: Okay. And what can you tell us about the risks of venting and burning vinyl chloride from a tank car?

DR. CARROLL: Well, you've seen the pictures, and there's a pretty good risk of a black plume of smoke. You will produce carbon monoxide, which is probably not a risk unless you're directly in the plume. You will produce hydrogen chloride, which, once again, would, you don't want to be in the plume. Hydrogen chloride is an irritant and would make it very uncomfortable to breathe. The phosgene, as I say, seems to be of less concern in the light of the hydrogen chloride. The action of the plume, I would imagine there would be a strong thermal drive upward at the beginning and some dissipation. On the other hand, all of those combustion products, with the exception of carbon monoxide, have a higher molecular weight than air and might be expected to drift back down toward the ground, especially hydrogen chloride, which will hydrate itself. It will draw water to itself and make very small droplets.

Is there more I've missed? What else would you like to know?

MR. STANCIL: Well, how about the effects of the combustion products on steels and the other equipment?

DR. CARROLL: Because of the hydrogen chloride, it would not surprise me if you would find corroded metal somewhere, particularly if it were in the plume, and particularly if the hydrogen chloride were moisturized.

Generally, hydrogen chloride is not as corrosive as hydrochloric acid. The water helps with the corrosion process.

MR. STANCIL: Okay. And have you had any previous experience or observations with what vinyl chloride monomer fires and combustion products do with associated equipment?

DR. CARROLL: I don't believe so. Not off the top of my head, no.

MR. STANCIL: And is it possible that the vinyl chloride monomer polymerizes as it was venting from the tank car during the vent and burn?

DR. CARROLL: No.

MR. STANCIL: Okay. All right. Mr. Lynum, if you would continue, please.

MR. LYNUM: Okay. These next few questions are going to be for Mr. Smith. Sir, could you please explain the results of your post vent and burn tank car residue sample analysis in a concise and simplified way such that lay people, such as myself, in the audience as well will be able to understand?

MR. SMITH: Sure. We took samples of each of the inside of each of the railcars under the pressure plates, as well as --

CHAIR HOMENDY: Mr. Smith, over here. Do you mind moving the microphone closer so we can hear?

MR. SMITH: I'm sorry.

CHAIR HOMENDY: Thank you so much.

MR. SMITH: We took samples in the railcars of material on the inside of the rail car, we sent those to our Avon Lake Technical Center, and they analyzed, one was to analyze for elements, particular elements. Another analysis was to see how the material evaporated or decomposed as temperature was increased and compare that with a PVC sample, and another was to look at a particular bonds, chemical bonds, to see if it looked like anything that would be PVC.

In summary, none of those analyses indicated there was any PVC in the tank cars.

MR. LYNUM: Okay. So, you just touched on PVC. So, how definitive are those examinations in determining the presence of poly vinyl chloride? The polymerizes species of vinyl chloride.

MR. SMITH: I'm sorry. Did you say how legitimate? Is that what you said?

MR. LYNUM: No, sir. How definitive.

MR. SMITH: How definitive?

MR. LYNUM: Yes, sir.

MR. SMITH: So, I'm not an R&D person, so I can’t speak to,

I'll say definitiveness other than we saw no evidence of PVC as a result of that analysis.

MR. LYNUM: Okay. So, if there was any polymer there, would these tests have found it?

MR. SMITH: They were intended to find it. Again, I'm not in the R&D facility, so I can't speak to that, but those were intended to find it, so they should have found it.

MR. LYNUM: Okay. Thank you. So, these next few questions, and I know the time is ticking down, so we probably won't be able to get through all them, but they're going to be for Mr. Wood, Mr. McCarty and Mr. Day.

Can I please get Exhibit D54 and D55 shown, please? Okay. So, each of you have told NTSB investigators that you observed polymer coming out of the tank during the vent and burn. I'll start with Mr. Wood. Can you tell us what evidence you observed that the vinyl chloride had, in fact, polymerized?

MR. WOOD: I was not directly down where the closest shots you see there were at. Those were the words that were relayed to me from that location, if that's the observations that were made.

MR. LYNUM: Okay. And I'll ask the same question, Mr. McCarty, what observations, you know, that you had for the vinyl chloride had, in fact, polymerized?

MR. MCCARTY: Sure. Thank you for the question. I was with Chip and Jason Poe behind Brave Industries out of direct line of sight when explosive charges went off. We were basically in a

safe zone. I wasn't privy to this right shot photograph. I'm not sure who took that, but my comments in that first interview came from, I believe it was a video from, I think it was the county sheriff's drone video. My observation was when the western-most car, when that shot went off, and again, I've got to get back to something I testified to earlier, no audible hiss, something that had been burning well since Friday night and snuffed itself out on Sunday, that people thought, you know, might be empty, when the video evidence, and it's not shown in one of your two pictures here.

If you watch the video of the western-most car, it launches what appears to be whitish-colored stuff vertically more than what I perceive to be strictly vapor, and it had a tremendous amount of pressure in it. Probably a couple hundred feet in the air vertically is what it launched vertically. And for a car that we had speculated -- I'd say we, some people were speculating it might have been empty -- it had obviously burned for an hour-and-a-half or two hours, so it had a good bit of liquid still in it.

So, again, all of this science weeks after the facts, you know, we're learning from that data, and we were frankly shocked by that data from what we experienced from what we felt. So, the observations were from that flyover video, not a direct line of fire, when that explosive went off.

MR. LYNUM: Okay. And this will be our last due to time but,

Mr. Day, your observations, if you could describe?

MR. DAY: After the permission was granted to initiate the vent and burn operation from incident command, we hit the, excuse me, the ESI hit the button, and we ignited the flares around the site to make sure we had ignition. We hit the high shot, released the vapor pressure. Hit the low shot, and dumped the liquid out into the pits that were constructed around the site.

At the moment of the high shot and the ignition of the western-most car, I looked around the corner from the Brave Industry side of the derailment and saw sparklers coming out of the car and relayed that information to the crew that was with me. These pictures here are, there's one missing in between when we had the high shot and the pressure relieved, and then we had ignition.

MR. LYNUM: What picture and videos are you referring to, because I don't think we have that?

MR. DAY: There's no picture. I just visually saw sparklers coming out. So, if there was a picture, it would be in between those two.

MR. LYNUM: Thank you. And Chair Homendy, the tech panel does have additional questions, but I understand we are out of time at the moment.

CHAIR HOMENDY: At the moment, but we're going to allow you to ask whatever questions you need to ask.

MR. LYNUM: Thank you.

CHAIR HOMENDY: We're going to take a break because it is very hot in here, so I want to give folks a little bit of a break. Why don't we say 15 minutes, 17 minutes we'll come back at 4:30. And we'll talk about who's doing questions first. Thank you.

(Off the record at 4:10 p.m.)

(On the record at 4:30 p.m.)

CHAIR HOMENDY: We're going to get started. All right. Thank you. Welcome back. We are going to continue with our technical panel, who has additional questions.

MR. LYNUM: Okay. These next few questions are going to be for Mr. Wood.

Now, you told NTSB investigators that the video cameras of the vent and burn action captured pure polymer coming out of the tank cars. Now, what video were you referring to? And was the video recorded?

MR. WOOD: My recollection of the video came were whatever those shots were from that were viewed a while ago that supposedly one of the shots showed some white material being shot in the air on the left side of the screen. I don't know whether it came from a drone video or what. I was at the command post when it took place, so the only video feed I saw, you couldn't see down where the cars were at.

MR. LYNUM: Can we get video D54 and D55 put back up, please?

Okay. I'll go ahead and skip to these next few questions to Mr. McCarty and Mr. Day. You observed this action in person. How

were you able to identify the release material as polymer?

MR. MCCARTY: Well, as I said before the break, it was, we were behind Brave Industries in a safe zone for the initial shots. By video, I saw a video. I assumed it was the sheriff's department drone video. It may not have been if you folks don't have it. It had appeared to me as whitish material, not so much strictly vapor. It looked like whitish material that was launched vertically a couple hundred feet in the air in a surge of release of what that top charge is designed to do in relieving pressure, but it sure looked like a lot of liquid stuff came with it. And it was not a clear liquid. It was more of a whitish color. So, again, that was our speculation at the time, and that is what we felt was happening the whole weekend.

MR. LYNUM: Mr. Day, would you agree with that?

MR. DAY: What I observed at Brave Industries with the guys from ESI and our crew was once we had ignition, we had the sparklers like I talked about coming out of the car, which is something that's not common on a vent and burn operation. We don't usually have in all the 30 cars that we've done; we don't usually have sparklers coming out of the car going up and coming back down to the ground. That's the reason I surmised that that's what that was.

MR. LYNUM: Okay. Thank you. These next few questions are going to be for Mr. McCarty and Mr. Wood, and I'll start off with you, Mr. McCarty.

What other mitigation options were evaluated? And you mentioned hot tap and some other things. Could you talk about that a little bit?

MR. MCCARTY: Yes, sir. So, with any derailment, any damaged car that there's a list of options. With compressed gas cars, for example, that have been pool fires, building pressure, relieving a tactical option to relieve vapor pressure is a vapor flaring operation. But in this case, all the valves and fittings within the protective housing were thermally compromised from all the thermal heat fires they'd been experiencing since Friday night. So, we could not vapor flare anything out of the cars. There was no access to the vapor space.

From a transfer perspective, you know, there was some discussion about can we get trucks or other tank cars and build in and do transfers? To facilitate a chemical transfer, it would require hot tapping to get to the liquid product. And we were prepared to hot tap. We were looking to hot tap. We had welders in staging, a couple thousand feet of pipe to go to a liquid flare pit, which is another tactic to talk about here in a minute.

But the other challenges with transfers would have been if this stuff has now been off specification due to this accident, all these fires, and the driving off and the inhibiting of it, setting up such a transfer would have required trucks that were most likely not available anytime soon from anywhere around the country from a trucking standpoint, would have been a logistical

challenge, properly inhibiting the stuff would have been a field challenge to properly inhibit it in the field.

If it was already polymerizing, that's also, it was our concern at the time that with the heat they sustained for the time in which it was sustained, we felt that if we would have tried that, we probably would have gummed up transfer systems and it had a risk of polymerizing in mid-transfer.

And in lieu of transfers, the next option was, and we've done this with other polymerizing materials, we burned off 90,000 gallons of butadiene in another derailment because it had evidence of polymerization and tactically hot tap the low space. And the cars we knew were still loaded, so we knew we had liquid space to weld into, and took 90,000 gallons of dibutyl amine to a burn pit to safely destroy it and get the cars de-inventoried before the excessive pressure.

And I'd like to get back to damage assessment at some point, but -- I'm sorry. Your initial question, I think I might have let myself get side barred. Can you please repeat your initial question and make sure I close the answer for you?

MR. LYNUM: I think you have to a certain extent. It's about mitigation options and their evaluations?

MR. MCCARTY: Thank you. So, hot tapping was kind of an essential tactic to trigger a couple different options short of vent and burn. And back to the one car that built excessive pressure without relieving itself in a condition that didn't have

a heated pool fire under it for a couple hours on Saturday afternoon, that told us something was still going on inside that car. And we looked at all the cars as a set. Four cars for sure, the one on the west and those three in that eastern-most pool fire, they were in the very same similar conditions. One car misbehaved, the other three were tracking right with it two hours earlier, so we were looking at those as a whole, as a piece to share with everyone.

So, tactical options due to having to get people in there, spending a lot of time up close and personal with those cars that we felt were rattlesnakes and damage potential from that dynamic wreck. I'm just going to go ahead and just ask if I can get back on damage assessment.

Earlier this afternoon in one of my first responses talked about the dynamics of the mechanical activities of 47 miles-an-hour wreckage. We never, that whole weekend, we never had a fair chance because of risk of our safety to get in there and peel jackets off of cars, look for things like scores, dents, gouges, wheel burns, and just to share with you on the perspective of that, these cars were a designed burst pressure the day they were built at 750 PSI. We're trained from the folks at CERTCI, C-E-R-T-C-I, there's adjustment factors that we make for critical damage. Even an eighth-inch deep score into that base metal would have taken a 300-pound working pressure car, well even start at 750 burst pressures, even an eighth-inch deep score, you multiply

the burst pressure times .2. So, there's like a multiplier that brings it down, and I don't have my calculator to do math in public, but it's around 150 PSI, as I recall. 20 percent of 750, if anybody has got a calculator. But if it would go to a quarter-inch deep score, it goes down even more, like 110, 112 PSI.

So, I know there's been talk about these 247 PRD's, in our assessment they quit working. They had serious fire damage. We have unknown mechanical damage on all these cars that have been seriously heat stressed through the weekend. This is a serious X factor in our whole assessment.

So, back to your tactical question, sir, on the options, the moment that one car in the middle on Saturday behaved the way it did, we made an absolute safety decision for the good of this community and for our own people that we were not going to commit people welding on those cars because there was a serious concern, and at least three of them might have been empty.

MR. LYNUM: Before I turn it over to Mr. Dougherty, Mr. Wood, your thoughts on that question, mitigation options?

MR. WOOD: Yeah. Drew covered most of them quite well. I think it should be noted there was a sixth high-pressure, liquified flammable gas car also involved in this wreck that did not sustain the same damages that these vinyl chloride cars had taken. That car was protected even during the vent and burn, and we went the other options. That car, after everything, the vent

and burn was completed, that car was moved and offloaded safely into trucks. So, we absolutely followed each step of that decision tree, that when we get to vent and burn it's because we're out of options.

MR. LYNUM: Okay. Thank you. Mr. Dougherty?

MR. DOUGHERTY: Thank you. Just one last question for me for right now, if we could please display Exhibit 47. This question is for Mr. Day.

Could you tell us what the effect would be on the shell temperature if it were in contact with the adjacent hopper car of plastic that continued to burn for days as it's pictured here?

MR. DAY: This is what we consider car 5, the western-most car, up against the plastic pellet car. And just from basic firefighting 101, that car is, the hopper car is smoldering. The temperature of that car, I don't know off the top of my head what it is. There is an eighth-inch jacket between the, on the outside of car No. 5, the vinyl chloride car. That car up against, there's going to be some heat transfer. I can't tell you how much there is. I'm not a scientist. I don't think anybody could, but there will be some heat transfer, absolutely.

MR. DOUGHERTY: Thank you. That was my only question. I'm going to turn it back to Mr. Lynum.

MR. LYNUM: Okay. We want to give an opportunity to the representatives from the state of Ohio and Pennsylvania to comment. First off, I'd like to get this question to Major

General Harris.

Sir, if you could describe your role and interaction with Governor DeWine after you were notified of the events involving the derailment in East Palestine.

MAJOR GENERAL HARRIS: Yes, sir. Thank you for the question.

Well the previous night before the 5th, before most of the conversation in question, Governor DeWine convened a phone call because he had been contacted by Andy Wilson, who is the Director of Public Safety expressing concern about a number of the people in the area who had not evacuated, even after the local law enforcement had gone door-to-door and encouraged them to do that. So, his directive to us was let's figure out how we can get up there and help them to contact these people to get them evacuated from the area.

So, Director Wilson immediately went in action and ultimately dispatched about 125 state troopers over the course of the response who came here. We mobilized in the National Guard the 135th and P Company from Chagrin Falls to come here to assist local law enforcement. Initially, the intent was for them to assist with knocking on doors to do the evacuation. Additionally, we mobilized the 52nd weapons of mass destruction civil support team because we thought, of course, that their expertise with analyzing, providing analysis in situations such as this, mapping, modelling, providing decision-support tools for the incident commander would be very helpful here.

So, we got all of those entities moving around 2000, 2100 on Sunday evening the 4th, and they immediately, they commenced movement at that time upon activation. So, they began arriving at around 02, 03 on Monday morning. And again, the intent was initially to, to help local law enforcement literally going door-to-door to notify people about the concerns, about the risk, because we were told that there were over 500 people in the area, in the affected area, who had been notified who hadn't left their homes, and Governor DeWine was gravely concerned about that, so we immediately commenced movement of all those elements.

And by about 5:40 on Monday morning, civil support team arrived and immediately initiated contact with US EPA, as well as making contact with the incident commander.

MR. LYNUM: Thank you. Can you provide any insight into how long Governor DeWine and his team had to deliberate on the proposed vent and burn procedure on the vinyl chloride rail tank cars and his ability to raise questions about his concerns and subsequently receive those answers?

MAJOR GENERAL HARRIS: Not very long. Governor DeWine actually arrived here around 1100 on Monday morning the 6th. And as you heard from the timeline, the decision was required by about 12:30 because there was concern about the night fall, the temperature inversion, and the risk of doing the burn at night. So, there's a very small window in which Governor DeWine had hoped to talk to the incident commander and the members of the unified

command, but ultimately, it was that team that made the decision. Governor DeWine had a lot of questions, but most of those were in preparation for the press conference because he knew he was going to have to walk out and talk to the media and answer questions to the public about these specific issues, so he had a lot of questions. But Chief Drabick is correct, it was the local leaders on the ground, the incident commander, who maintained command of the situation the entire time.

MR. LYNUM: Thank you. So, you mentioned the National Guard deployment. Did you have any significant issues during that deployment, or?

MAJOR GENERAL HARRIS: Probably the greatest issue that the teams experienced were just communication. Things were moving rapidly. As an example, when the team arrived, and they arrived with the impression that they were, they might be supporting a vent and burn for a single car, there were a number of people around the command post who thought it was a single car. So, a lot of the modelling was based on that. We later learned that it was five cars, which made a significant change in the modelling and the advice and the tools that we were able to provide to the incident commander to support his decision making.

MR. LYNUM: Thank you. And my last question for you, sir, do you have any recommendations for improved communications and decision making between on-scene command personnel and State of Ohio decision makers?

MAJOR GENERAL HARRIS: I do. There are a couple. First of all, we can't do enough exercises in this phase, and I think the exercises have to be realistic and they have to push systems to the point of breaking. We can't assume things away during exercises that we sometimes do, particularly when it comes to command and control. We have to make it difficult. This was a difficult response in so many ways, particularly because it was also at a state line, so it required coordination across state line, across state agencies. And fortunately, the governor had Governor Shapiro on his speed dial, frankly, and that was helpful, but it certainly complicated the issues.

The other thing is it's important to have a common operating picture in the command post. It was very difficult to find information, especially for the team that was doing the modelling, those tools, whether that's on-air monitoring and painting that dashboard for whether it's car temperature or what's in the actual affected cars, we struggled with that. Not only were we late learning that it was five cars, but we had challenges with what was in the cars and how much had actually burned off. So, the modelling was constantly changing, and if we had a common operating pictures told that we could roll in and look at and we could share through some automated means with the entire team, I think it would have expedited some of that generation of tools and given the decision makers more decision space.

MR. LYNUM: Okay. Thank you, sir. These last few questions,

which will round out our questions from the Tech panel ever for Mr. Padfield. Sir, could you please describe your role and interaction with Governor Shapiro after you were notified of the events regarding the events in East Palestine?

MR. PADFIELD: Sure. Thank you for that question. We were notified, as stated, at about 9:34 p.m. on December -- or I'm sorry, on February 3rd regarding the situation. Our Watch and Warning Center picked up a notification from Beaver County Emergency Management that they were sending a large amount of mutual aid support into Ohio. So, we began tracking it at that point in time.

In around 2:45 in the morning on February 4th, Saturday morning, I had communication from our Department of Environmental Protection Emergency Response director who had personnel on the scene at the command post and had an assessment of the situation. At that point in time, we had reason to suspect that, obviously, this was a large, complex incident, and there may be, you know, significant concerns for the residents of the commonwealth of Pennsylvania. At that point in time, Governor Shapiro and his staff were notified of the situation by the DEP acting secretary at the time, and through we kept communications up through, actually, the Governor's senior staff at that point in time.

At that point in time, I actually reached out to my colleague in Ohio to get an assessment, and we started at about 4:00 in the morning to get some modelling that we started to look at

concerning maybe potentially for Pennsylvania. So, we continued to model that, we continued to take a look at the models with the wind changes and everything else and update the Governor's office on a regular basis. So, the Governor was involved in the situation, he was very proactive in making sure that we were engaged in getting the right information and making the right decisions to protect the residents in the commonwealth.

That continued until about that Sunday evening. That Sunday evening there was information that we received regarding the one car that was significantly involved in fire that was vinyl chloride, and that we received a briefing from the emergency response personnel that were on the scene that they were provided regarding that one car.

At about 9:00 that evening, 9:00 p.m., our Watch and Warning Center picked up a social media post that came out from East Palestine that really reinforced the one-mile evacuation, and it was concerning from our perspective because we weren't exactly sure why this came out at that point in time. So, we reached back out to our personnel. They tried to gain clarification, and eventually they were able to gain clarification that they believed that one car of vinyl chloride, it wasn't going to be if but when it failed. And if it did not fail overnight, the plan was to vent and burn that car at noon the following day. Which we understood was, you know, the concern going in.

The Governor was briefed on that, the senior staff was

briefed on that, they were engaged in that. We talked through the process that what that means, and, you know, essentially, what the evacuation area looks like. We confirmed with Beaver County that they had made notification, that they were comfortable with the evacuation area at that point in time.

Fast forward to that Monday morning, and I received a notification from first the Beaver County Emergency Management director shortly followed by my colleague in Ohio that Governor DeWine was calling Governor Shapiro over concerns with the train derailment. And at that point in time is when we realized that we were talking about the course of action had changed to vent and burn five cars, and we were trying to gain an understanding at that point in time of why we were talking about one car that Sunday night, and we went to five cars that Monday morning in a very short period of time.

MR. LYNUM: And just as I asked General Harris, about how much time did Governor Shapiro have from the moment you notified him of the proposed vent and burn, I mean, how much time did you guys have to deliberate?

MR. PADFIELD: My appreciation of that conversation is the decision was already made. I personally on that phone call asked specifics regarding other courses of action. We know that from preliminary information the night before that they were investigating other courses of action. At that point in time, we were told that this is, quote/unquote, 200 years of combined

experience making these decisions, and that was the only decision that was viable at that point in time.

So, at that point in time it was not necessarily about making the decision. It was more Governor DeWine calling Governor Shapiro to let him know what that decision was and to be able to work from there on what we needed to do on our side to protect the residents.

MR. LYNUM: And my last question, similar to what I asked General Harris, do you have any recommendations for improved communications and decision making between on scene incident command personnel and state of Pennsylvania decision makers?

MR. PADFIELD: There are a lot of recommendations, and I appreciate the opportunity to come here because I think this is very crucial to be able to understand from these large complex incidents. You know, a couple of recommendations. No. 1, everybody needs information and the best information to be able to inform their decisions. Any impediment of getting that information is going to affect the decisions that any one entity at any level of government makes, and that's the concern. Having that free flow of information and having that understanding and shared understanding of what the tactics are that are being discussed, if we would have known that a vent and burn operation of five vinyl chloride cars was a potential three days before, two days before, 24 hours before, we can plan against that operation.

However, being thrown into these situations at the last

minute creates challenges. We know that personnel that, you know, much to the credit of our Department of Environmental Protection, they had an emergency response professional respond to the scene spontaneously and was responsible independent action on his behalf to go to the command post because he saw it on the news to be able to, essentially, gain situational awareness of what was happening and what the impacts were to Pennsylvania.

We know that people were not necessarily included in some of the meetings and decision making that was occurring at the command post, some of the planning that was occurring at the command post, and that is challenging. We understand they're complex situations, we understand they're dynamic and they change on a regular basis. But if one person misses a meeting or is not included, they do not have the most up-to-date information on which to be able to make informed decisions.

And I think, you know, going back to my colleague here to the left, you know, training in a real-life environment with those decisions, the hardest decision an emergency manager will ever have to make is evacuation decision and protective action decision. And understanding everything that comes into play with that is critical, and exercising that in real time is really something that in these types of complex situation that we need to spend more time and emphasis on.

MR. LYNUM: All right. I'll turn it back over to General Harris. Do you have anything else you'd like to add, sir, before

we conclude?

MAJOR GENERAL HARRIS: No, but thank you for the opportunity to contribute.

MR. LYNUM: Thank you. That concludes our questions. Mr. Stancil.

MR. STANCIL: Thank you. Chair Homendy, that's all the questions we have for this panel.

CHAIR HOMENDY: Okay. Great. Thank you. We're now going to turn to party questions. As before, each party spokesperson will have five minutes to question the witnesses. We'll begin with the parties from the government agencies, followed by the industry parties, and then the labor table. So, we'll start with PHMSA or FRA, however you want to divvy it up.

MR. SCHOONOVER: Thank you. Chief Drabick, were you ever informed that resources from OxyVinyls were on site and available for discussion or for consultation?

MR. DRABICK: No. Somebody from OxyVinyls did come into the command post at the fire station on Main Street and asked where representatives from Norfolk were, and we sent them in their direction where they were gathering, but that was the only interaction we had with those individuals.

MR. SCHOONOVER: Thank you, sir. Chief, while I'm asking, who advised you that you had, in your testimony you mentioned that you were told you had 15 minutes to make a decision. Did they tell you who set that 15-minute time limit?

MR. DRABICK: That was relayed to us in the room that Governor DeWine and I went to meet with the contractors, Norfolk Southern, and their contractors. And that time limit was given to us, we were told, based upon the conditions at hand and dealing with the weather at hand and the convergence, in order to do it that day we had 13 minutes.

MR. SCHOONOVER: Thank you, Chief.

Dr. Carroll, I have a question for you. What was the, what is the byproduct of a polymeric reaction or the reaction as the vinyl chloride polymerizes within a railcar? What would the byproducts be?

DR. CARROLL: There are no byproducts. Vinyl chloride is polymerized to PVC, and that's it.

MR. SCHOONOVER: Okay. So, there would be no formation of gas or any other material other than the heat that would be --

DR. CARROLL: No, sir.

MR. SCHOONOVER: Thank you, sir.

Mr. Day, you mentioned that you are aware or your training previously that inhibitor goes away. What discussions did you have with any vinyl chloride producers or other product experts regarding the inhibitor or other mechanisms to prevent polymerization?

MR. DAY: Can you repeat that question?

MR. SCHOONOVER: Yes, sir. What discussions or consultation did you have with any vinyl chloride producers or other product

experts regarding the inhibitor or other mechanisms that were used to prevent polymerization of the material inside the tank?

MR. DAY: One of our options, because of our involvement with the chlorine institute, they're mission chemicals, we have a plethora of manufacturers that we can bounce ideas off of. We spoke with Oxy. We spoke with a couple other vinyl producers. Giving them what we were looking at, what we were seeing, they, the other two producers did say that polymerization was a high potential based off of fuel load and heat applied to the tank cars.

Once we were able to gather all that information, we were basically formed into a technical committee. We discussed it, and that was just one of the many things that the technical group discussed when we came up with the vent and burn operation.

MR. SCHOONOVER: Thank you, sir.

Mr. Smith, question for you. OxyVinyls expressed concern that polymerization is not occurring. When you were told the decision to vent and burn had been made regardless, did you consider raising the issue with the incident command?

MR. SMITH: I was not part of the unified incident command, so it really wasn't my role to do that, so, no. My role was to communicate with SPSI, and then they would communicate to Norfolk Southern, who would then communicate from there.

MR. SCHOONOVER: Okay. Thank you, sir. That concludes my questions. Thank you.

MR. ALEXY: All right. Thank you. Okay. This is a question for Mr. Day. We'll start with you.

I think a lot of the talk about the vent and burn has been taken for granted like everybody understands what it is. You have a charge at the top of the tank, and then a charge at the bottom, and then it vents out. Does that charge at the bottom of the tank ignite the fluid leaving the tank, or is there another step to that to ignite that fluid?

MR. DAY: So, the vent and burn operation, the way it's taught, the way it's done, there is multiple ignition sources placed around the site once the charges are applied. When permission is granted to initiate the vent and burn operation, the first operation is to ignite the ignition sources, both high and low, because of the flammable gases and the flammable limits of the material that we're dealing with.

The next permission is given for the release of the vapor from the top of the car, the highest point of the car, to prevent liquid from blowing out. So, it hit the ignition sources, you unload the pressure. Most of the time that pressure coming out will ignite, and within seconds, the bottom shot is initiated, and you have more ignition sources and everything goes to fire.

MR. ALEXY: Okay. That's helpful. So there's no scenario, because Dr. Carroll talked about an upper flammable liquid and a lower -- an upper flammable level and a lower flammable level. There's no scenario where you would create those two holes in the

tank, and it wouldn't ignite and you would just end up with product on the ground?

MR. DAY: That's correct.

MR. ALEXY: Okay. Thank you. Well, let me ask a follow up to that. That wouldn't be possible or that, I mean, would that be an option to do that, or is that just not a possibility that that happens?

MR. DAY: That's calling for speculation, and I'm not going to speculate what could possibly happen.

MR. ALEXY: Okay. All right. Thank you.

Can you talk, let's see. Let's see. Mr. McCarty, I'll start with you here. Can you talk a little bit about some of the modelling that was used to help inform the decision about, I don't know if you were involved, but I'm going to ask you, with any of the modelling as far as the impact of this, of this vent and burn? Yeah, I'll stop there.

MR. MCCARTY: So, on Monday morning, we had just finished, Chip and I had Jason Poe and his team in a recon to orient him a day late talking through the high charges, the low charges, and we had just started exiting the hot zone and I got a call from Mr. Deutsch saying, hey, the governor of Ohio is up here at the school. He would like to talk to you, Chip and Jason. He's got some questions for you how we came up with the vent and burn, right?

So, we went up to the school, and we just kind of walked into

a bit of a hornet's nest, quite frankly. Didn't know that was the case when we walked in, but it is what it is. We certainly respect I'm hearing a lot of one car to four cars, and I'm clearly equal as concerned where any breaks in communications were.

So, the Governor when he approached us had a concern that he had this model that was, we just know from all the training, we know our Chlorine Institute and our member companies and other case studies where they've had vinyl fires, they've had vinyl explosions, and what they experienced in their modelling we were much better off doing this operation in the daytime than at night.

So, the information that they shared, I did not even need to look at the piece of paper to know that something was very awry. I've been doing this 35 years, and while I don't plug in air modelling. I'm not a computer dude. I'm a HAZMAT guy. What I do know with absolute certainty, it's the old adage garbage in, garbage out, so there was just some missed data that got inputted, and I felt it, I knew it, and sure enough, work cooperatively with the folks that were modelling down the hall. This was one example the Oxy teamwork was phenomenal because they had armed me with this information about the trace phosgene, less than one percent phosgene, 50 percent HCL and such.

So, my involvement in that was simply this: I was presented with something that had two governors, Ohio and Pennsylvania, pretty spun up over some intel that I knew was in error, and I was able to help the air modelling people with some fact-based data

input, and I'm happy to say that that worked. I mean, it was a much more accurate model. And the essence of that input had to do with this: They were presuming five tank cars 90 percent full. We had two tank cars that still hadn't leaked since Friday night, the eastern-most one and the second one in from the east, and we had weigh bill information on them, so I respectfully suggested that the modeler use that as fact-based poundage. It's on the weigh bills, and we had three cars burning since Friday night.

We had a few people speculating they might be empty, and we had somebody said that 200 years combined experience. I think that came out of my mouth, and then when I looked around, we did. The people that were in that circle that were in my line of sight, we had a tremendous amount of experience and we all felt pretty good that at least three of those cars were most likely at least half empty. So, we respectfully suggested that they model that volume.

The next parameter, I just inquired with the operator at the computer terminal what was your parameters, and he said phosgene. And I said, well, what do you put in for that? And he said, 70 percent. And I said, well, I think we've just identified a pretty big problem because it's less than one percent trace, and then he made some phone calls, looked at some data, verified, and he changed that.

The next model he had 33 percent HCL, and this is where we actually suggested that he bumps it up to 50 because, again, the

Oxy had said you're going to have this, this, and this, and it was spot on. So, we bumped that up to 50 percent. And beyond that, whatever their computer modelling does, it did it and it had a much more realistic model to track with our 35 years of experience that made a lot more sense and the DOT guidebook. It tracked with the DOT guidebook recommendations.

MR. ALEXY: Okay. Thank you, and Madam Chair, if the opportunity presents itself, I have additional questions.

CHAIR HOMENDY: Does the Village of East Palestine have questions? Go ahead.

MR. RUTLEDGE: So, my question is for Chief Drabick. Chief, in your previous testimony or answering in the room, large room discussing the vent and burn that Governor DeWine was in, can you elaborate a little bit more on who all was in that room and that discussion involved in whether it was one car, four cars, and the vent and burn discussion?

MR. DRABICK: Sure. Thank you. Throughout the entire process of the unified command, there were members from both federal and state EPA, Pennsylvania DEP, both EMA's from Columbiana County and Beaver County, Norfolk Southern and their contractors. And we had meetings, several, once every several hours where everybody was asked to give a report or a status so that everybody knew what was going on.

When we went into the big meeting after Governor DeWine got there, all of those players were there, along with General Harris,

his people, and several representatives, senators, congressmen, representatives from both Pennsylvania and Ohio. So, all parties were involved in that big discussion, which transferred to a smaller discussion in a private room between Governor DeWine, Governor Shapiro, the Ohio Department of Health, Pennsylvania Department of Health, some toxicologists to discuss the whole process, the plume modelling, the vent and burn, the evacuation, and that was all explained in depth to both the governors and agreed upon by all entities involved after the initial meeting as well.

CHAIR HOMENDY: Do you have more questions, Carl? Do you, Bill? All right. Go ahead one more time.

MR. ALEXY: Mr. McCarty, from your experience, typically how long does it take from the decision to do a vent and burn until the actual evolution occurs?

MR. MCCARTY: Before I answer that, can I ask you in the perspective of your question, is it relying to the 13-minute comment I've heard a couple times today?

MR. ALEXY: No, sir. I'm trying to understand what other opportunities for modelling and awareness and decision making on protecting the communities can occur. So, you know, is it, do you have two hours to notify the community, do you have eight hours, et cetera.

MR. MCCARTY: Okay. Thank you. So, in the day before in the meeting that was referred to earlier with the chief and his staff

and the city hall building, whatever you call that building. I'm sorry, I don't remember the name of the building. But in that meeting, I can recall the conversation about just this afternoon off the back of my hand, on that one western car, but here's where I think a little disconnect has obviously occurred. We clearly presented four cars for sure at that meeting, maybe five. We still on Sunday evening, we had hopes that maybe we could move that east car, maybe re-rail it or get it in the clear. That was the status. When we left that meeting, I thought we were all on the same page. After that meeting, we authorized, we meaning Norfolk Southern, told Chip and I to get Jason Poe up here, meaning from the Louisiana. That was his green light to mobilize the explosives team and their charges and their resources.

So, we pretty much started working on things Sunday after that meeting. And in our minds going into Sunday night Monday morning, it was at least four maybe five depending on what we could do with the fifth car to the east. And, you know, I think you asked how long does it take. We had talked with that group -- I'm sorry, I don't remember the timeline whether it was either Sunday evening or through the night or Monday morning early, but we told them we needed three hours from the time the final go was given, we needed time. Jason Poe and his team needed time to do everything that needed to be done in the hot zone, and that was even a minimum. A minimum of three hours.

So, I'm just going to go ahead. I made a note here hopefully

somebody opened the door for me to get back to the 16 minutes, because I'm the one that said, we have minutes, governor. Because we had frankly lost time in this window of daylight with this situational reboot of air modelling. But in our mind for everybody's awareness, we believed Sunday evening after the meeting in the city hall that we were pretty much authorized to get the explosives guy coming. I mean, I had night shift trench and berms for containment, we were progressively getting ready for the operation through the night Sunday night into Monday morning, and we were momenting towards the noon. I heard the gentleman from PEMA say noon. That was our marching orders as contractors that we were setting up to be mid-day so that we could burn this off before dark.

So, I just, I wanted to get it on the record, because I've heard it say twice now somebody told the governor and only gave the poor chief here 15 minutes. That was certainly never our intention, Chief. It was in the perspective of getting the burn done to the maximum extent possible in the daylight hours in support of the air quality and such. So, I hope that answered your question.

MR. ALEXY: Okay. My last question is we've heard today that OxyVinyls has a safety data sheet that says something. We heard Dr. Carroll say that there may be some discrepancies, or I don't know if discrepancies is the right word, but inconsistencies, whatever. Given that, and this, the reference to this procedure

that exists, this sort of checklist or the way we go through the decision-making process, so Mr. Wood, I'll ask you. Would you say given what you've heard about this, do you think that there's an additional step that needs to be put into this decision-making process or additional consideration just give what we've heard today from Dr. Carroll and from OxyVinyls?

MR. WOOD: What I will say, we learn from every incident. This incident is no exception. I don't know that anything about this changes the decision tree. Again, when you get to the choice of vent and burn, you're out of alternatives. I don't know that an extra step in there, but to kind of clarify even from a timing basis, when those discussions were had, I brought our concerns to the chief. Those meetings were set up. Anything done along the lines of, you know, there's hours of prep work before you even get to a vent and burn. There's trenches that have to be done, burn pits have to be done, all of that infrastructure has to be put in place. In this case, there was a car that needed to be protected, you know, get dirt shoved up against it.

Even if you, even though we mobilized ESI, there was no firm go ahead to do that job at that point. But it's our responsibility that, listen, we're going to go ahead and make those preparations and we're going to be prepared to do it in a timely basis because otherwise in my mind I'm tying that incident commander's hand because I'd tell him, you've got to make this decision because I've got 12 hours of work to do before we can do

it.

So, this incident will be no different than any other. Communications is always going to be the weak link, and I think we can always do better than that. And again, when we're through with work from the site out here, we'll do a formal hot wash and go through, and if there's more lessons to be learned, we'll certainly take that into account.

MR. ALEXY: Thank you.

CHAIR HOMENDY: Does the Village of East Palestine -- all right. We will move on to the industry table.

MS. STEGMANN: Yes. Could you please call up Exhibit 8. And while we're doing that, Mr. Thomas, I have some questions for you.

How many times did OxyVinyls tell Norfolk Southern or its contractors that polymerization was not occurring?

MR. THOMAS: Three different occasions we expressed our belief that it wasn't occurring, but I think the more important thing is we told them how they could know for sure. We're participating in that event because we care, we got the highest levels of our company there because we care. We sent folks on the ground because we care, so you can't be absolute in those. We're there to provide input and they factored into the decisions, and we certainly respect their expertise in that.

But on three different occasions we expressed we didn't believe it was, but I think more importantly we said, here's how you can know so that you can protect your folks. If you can get a

temperature, it will tell you whether polymerization is occurring or not.

MS. SHAW: Ms. Stegmann, we need a group number or a group letter, I'm sorry.

MS. STEGMANN: I'm sorry, Exhibit D8.

Did you explain that the reaction was highly exothermic that it had a distinct temperature signature?

MR. THOMAS: Yes, we did talk about that.

MS. STEGMANN: And now that the exhibit is up, does the temperature trend on Exhibit D8 show an exothermic reaction?

MR. THOMAS: No.

MS. STEGMANN: Does it show polymerization?

MR. THOMAS: No.

MS. STEGMANN: Thank you for those responses, Mr. Thomas.

Mr. Carroll, I have the same two questions for you. Does the temperature trend on this Exhibit D8 show an exothermic reaction?

DR. CARROLL: It does not. You would expect if there were an ongoing exothermic reaction, you would expect more heat to be generated and you would expect the temperature to rise.

MS. STEGMANN: Does it show polymerization?

DR. CARROLL: Certainly, the temperature profile would not be consistent with polymerization, but it would be difficult to tell whether you have polymerization or not just from the temperature profile.

MS. STEGMANN: Thank you for those responses.

My next question is for you, Mr. Wood. We have heard that one of the justifications for the vent and burn was an extreme temperature change. What was the amount of this extreme temperature change?

MR. WOOD: I don't believe we ever expressed an extreme temperature change. We said we were alarmed by a rise in temperature, and these cars had been exposed to extreme temperatures for multiple days. I don't know of any reference to an extreme temperature change.

MS. STEGMANN: Thank you for that clarification. Could you quantify what the temperature increase was to justify the vent and burn?

MR. WOOD: Again, the temperature rising question was a three or four-degree temperature rise over about an hour with the cars hadn't been in a pool fire for several hours. But keep in mind polymerization was not the only issue we were concerned about. These were high pressure, liquified flammable gas cars that had sustained mechanical damage from a 40-plus mile-an-hour derailment, they had sustained heat damage by laying in pool fires for multiple days. So, polymerization was not the single factor that led us to believe that a vent and burn was the safest and best option.

MS. STEGMANN: Thank you. And I was going to ask if we could put the Exhibit D8 back up, and my last question for you, Mr. Wood, is, were you shown the trend, were you shown the data

trend reflected on this Exhibit D8 before the vent and burn was conducted?

MR. WOOD: Yes, I was the person logging this data.

MS. STEGMANN: Thank you.

Back to you, Mr. Thomas. You heard Mr. McCarty talk about the pressure differential on the cars when the vent and burn occurred. Do you have a response to his testimony?

MR. THOMAS: No. I believe what he saw, I think the, he was talking in regards to the west end car, 80370, and at the time of the detonation, you know, that that car had more pressure in it, that there was an obvious difference, and that was maybe something that made him think there was polymerization.

My understanding of that car was the last time that it vented was on Saturday afternoon before, like, 3:00. And so, you know, assuming that it had made it to where it was supposed to be at 185, 190 degrees, what happens after that is that that railcar continues to cool down, which we see with the temperature data that they collected, you know, that evening at 135. But even after monitoring the temperature from 135 to 126, you know, it was a 12-degree drop from 138 to 126. At 126 degrees at 2:30, I think that was the number, you know, in the factual summary, that's about, you know, a hundred pounds of pressure compared to the pressure on the other rail cars where the temperature is 65 degrees, they were around 30 pounds.

They had one railcar, TILX, that they had actually measured

pressure on, you know, that one was I think 60 pounds, in that range, for a couple days. So, I think he was very accurate in his description of what he saw. I think the explanation, at least from my perspective, is not polymerization. It's just simply the difference in the pressure of the vapor space of those two cars that, you know, cause the relief difference.

And you know, that car is different from the others ones at least from our understanding, the one in the pool fires, you know, their heat source went out and it stayed out. You know, from what I read and, again, from the folks that were on the ground, this slow decline in temperature from when it relieved on Saturday to Sunday night, I think was being impacted by the car that it was leaning against, you know, that had smoldering fire, it had radiant heat. Radiant heat is, you know, something else that's called out in all the guidance documents that you're talking about that those cars can be affected by cars burning near them.

So, I think it was just slow getting back to the other ones because it had a heat source the other ones didn't that was providing a radiant warm up, much like your pot on the stove, you know, would do.

MS. STEGMANN: Thank you. That concludes our questioning.

MR. GOODEN: All right. Dave Gooden with Norfolk Southern.

Mr. Smith from OxyVinyls, were you the on-site representative for OxyVinyls there at the derailment site.

MR. SMITH: I was the on-site representative with the other

two gentlemen.

MR. GOODEN: Okay. All right. Just a few follow-up questions, and just forgive me, just reading from my notes here. Referring to the SDS, hazardous polymerization section of the SDS, it says the polymerization can occur due solely to excessive heat, is that correct?

MR. SMITH: I would have to defer to somebody who has more expertise in relationship to PVC. However, we did, in our particular instance, you know, there was from a thermal initiation of polymerization that would not occur because we have low 0_2 in our shipment of VCM.

MR. GOODEN: So, what was displayed earlier on the big board here saying that it, you know, polymerization could occur due to heat or exposed to heat, is that accurate?

MR. SMITH: I'm sorry, repeat that.

MR. GOODEN: I'm just trying to clarify. So, what the SDS said earlier about the railcars being exposed or the chemicals being exposed to excessive heat, is that accurate? Polymerization can occur.

MR. SMITH: So, in our particular instance with stabilized vinyl, because you have no, you have oxygen less than 200 parts per million, that you would not have a thermal initiation of polymerization reaction.

MR. GOODEN: Okay. And so, that leads me to my next question. Hazardous polymerization section of the SDS does not

mention anything about stabilize, is that correct?

MR. SMITH: The SDS does talk about stabilization. Did I miss your question somehow?

MR. GOODEN: I'm sorry?

MR. SMITH: The SDS does mention stabilized vinyl.

MR. GOODEN: I'm referring to the section what refers to, is not when it refers to the hazardous polymerization section?

MR. SMITH: I believe there is a section in that general section that talks about reaction that talks about stabilized vinyl there. It needs to be stabilized.

MR. GOODEN: And the last question for you, was the SDS provided there for the team at the site?

MR. SMITH: What was that again?

MR. GOODEN: The SDS, was that provided to the unified command or the team on site?

MR. SMITH: I do not know. I was not part of unified command.

MR. GOODEN: Okay. All right. No further questions for Mr. Smith.

Mr. McCarty, if you would, did Oxy's representatives provide clear and unequivocal advice on polymerization?

MR. MCCARTY: So, we definitely value the teamwork with Oxy, and I think Chip will agree we value all chemist input, and that's no different here in this case.

I just jotted down some scribble notes here. I've heard

unlikely, didn't believe, can't, cannot be absolute, and I can tell you a vivid memory from one of the calls that was kind of that, I guess the last conference call we had we just don't think it's polymerizing. And all these non-absolute assurances are, quite frankly, why we had to listen to that and, yes, we listened. I just want everybody to know, especially from Oxy. We didn't ignore your input. That's my heartfelt honesty. We never ignored your input. But we never heard the absolutes, and everything that we've experienced in our careers and everything we've been taught and every indication from mechanical car damage that we just, I mean, if it was one of those four cars that had even an eighth-inch deep scour, gouge, some kind of metallurgy damage that we just never got a fair chance to look at, heaven forbid worse damage, this community was in serious risk. So, as Mr. Wood put it, you know, polymerization, folks, was just one of the complex elements in this damage assessment recipe. It was just one element. Thank you.

MR. GOODEN: All right. Just one final question. Referring to the ERG, did Mr. Smith refer to the P, as in polymerization, in the ERG during conversations?

MR. MCCARTY: No, sir, but I do recall after the last conference call in which someone on the speakerphone from Texas just said they just don't think it's polymerizing, Chip and I and a couple of his colleagues that were with us on that particular call went back into my ops, or SPSI ops trailer where the other

fellow Steve and the other two fellows were. And quite frankly, they did seem surprised by that statement, and one of their fellows said something to the effect of, well, when I get back to Texas, I have to remind people what the P means in polymerize means and in DOT guidebook.

So, again, it's not that we don't value Oxy's opinion. We absolutely value everybody's input when it comes to this stuff. But we have to go on multiple data resources, a whole lot of other variables in damage assessment, and when there's a little bit of conflict in the air, we have to go with what we've all been taught in our experience.

MR. GOODEN: All right. Mr. McCarty, thank you. No further questions.

CHAIR HOMENDY: All right. We'll turn it over to the labor table.

MR. CASSITY: Thank you. Jared Cassity, one of the union conductors and engineers. First of all, I want to thank you for teaching me so many new words I can go home and whisper in my wife's ear and she'll think I'm a lot smart for having been here.

I've been trying to keep up with this, and I am just a conductor and engineer by trade.

So, I have a question for the whole panel because I really don't know who to ask this to. When we're talking about the product in this tank car with the vinyl chloride, who is actually the ultimate authority or expert on that chemical and the

possibilities of what could happen in a situation like this. I mean, it seems to me like someone should be the go-to person. Is there that person?

(No response).

All right. I guess not.

MR. MCCARTY: No, I will jump in and say if you were just dealing with the product and the product alone, that manufacturer of that product or the people who use that product are the absolute experts.

That's not the case here. We had the product inside a vessel that was compromised, so there are two pieces to the equation and not just one. It's not just the chemical, it's also the package, and we have to consider both in the field in assessing a real-time emergency in real time. And absolutely, the data from a shipper is absolutely an important part of that, but it's not the only piece of that. I hope that helps.

MR. CASSITY: Well, it does. Mr. McCarty, I apologize. Just a second ago you were talking about the polymerization as being just one element into this scenario, which I completely understand. You had also said on numerous occasions that you couldn't do an actual damage assessment to the cars because of the condition of the fires being present. What other elements were there if you weren't able to do an assessment were you considering to base the decision to do the vent and burn on?

MR. MCCARTY: That's a great question. Thank you. One clear

element that we could see from drone footage was all valves and fittings on four of the five VC cars were absolutely not operable, not serviceable, fire damaged, and that takes a lot of tactic options right off the table immediately.

The other two tactics that could have been considered and were considered would require hot tapping, and there was legitimate concern by a lot of experienced people that three of those cars may have burned empty, and you just can't risk welding in the vapor space of flammable compressed gas car or risk of detonation is very real, and that could have been catastrophic.

MR. CASSITY: Okay. Mr. Wood, on the exhibit that was shown a minute ago with the temperature trend, it looked like about 22 hours, if I could read it right, that was showing a cooling of that car. Once the charges had been placed, and I'm not sure how it is. Let me say it this way: Once the decision had been made, as that slide indicated, for the vent and burn, was there ever the possibility to reverse that decision seeing that the temperature was actually dropping, or once you've made the decision to vent and burn is that kind of it and we've got to go with it?

MR. WOOD: Well, keep in mind on those temperatures we were keeping those all through the night, and absolutely incident commander could at any time stop this operation. That doesn't mean we can't plan and continue to make that prep work. We have to be looking forward down the road. We can't be reactive. We have to be proactive. So, in this case, if the incident commander

decided that the vent and burn was off, then we've just dug a big hole.

MR. CASSITY: Okay. And you had also spoken about the infrastructure that was needed for the vent and burn process earlier, the ditches and all that nature. What preventative measures are there in that process to protect the product from penetrating the soil, if you will? Is there protective measures taken in that process?

MR. WOOD: I'm sorry, I didn't hear the last part. Was it protective for the what?

MR. CASSITY: The ditches on the vent and burn, you know, you put the actual liquid or commodity is. I understand that the charge is meant to burn it off, but it sounds like if you're building trenches, you're also expecting some run off to escape from those cars where that bottom breach has been made. What protective measures were put in place in those ditches to prevent soil contamination?

MR. WOOD: I know you asked me the question. Drew has stepped in, and he's probably better suited as it was his folks that built the trenches.

MR. CASSITY: That's fine.

MR. MCCARTY: Our guys prepped those ditches, that's why I could kind of speak to that. So, as part of the vent and burn operation, our challenge is to contain exactly what you're concerned about. It's a legitimate concern. So, we did. And the

containments held, held nicely, and you know, pleased to report it never, neither fire in the two got anywhere near the loaded isobutylene car. That was by design. There is a loaded isobutylene car still in the wreck, and we made sure that none of that VCM burn off got anywhere near it, and I'm happy to report that.

With respect to your question about runoff, so, VCM is a flammable compressed gas. It boils from when, the boiling point just for general, it boils off from liquid to gas. It's somewhere between 7.9- and 10-degrees Fahrenheit. There's different data resources that have a little skew in their reporting. But let's say round number 8 degrees Fahrenheit. It was warmer than 8 degrees Fahrenheit on the Monday of the vent and burn. So, what happens when it comes out of the car, it is 344 to 1 expansion ratio where for every liquid gallon, it expands to 344 equivalent vapor by volume.

So, it flashes off instantly. Pretty quick. There would be a little bit of auto refrigeration when it first happens, but the heat of the fire cooks it off. So, it was trapped in our burn areas and effectively burned off.

MR. CASSITY: Thank you, Madam Chair. If I could respectfully ask for another round whenever you deem appropriate.

MR. FANNON: Randy Fannon, BLE. I just have one question. Mr. McCarty, after the vent and burn had completed, the fires are out, everything is completed, did you have an opportunity with

your team with Mr. Day to inspect the cars to see if there was other opportunities?

MR. MCCARTY: So, I think it was one of my guys who worked with you, and another one of your guys with the NTSB folks. The NTSB instructed Norfolk Southern to put those cars on NTSB hold, which means we couldn't touch them, and we did not. Once those cars were in the clear, they were somewhat quarantined for this investigation purpose, and then a small team of guys led by Chip, well, led by the NTSB, Chip led the operations there to support that investigation effort. So not until whatever day that would have been. To answer your question, it was days, weeks later.

CHAIR HOMENDY: Others?

MR. CAREY: Dr. Carroll, we heard Mr. Thomas explain that polymerization is essentially impossible without oxygen. Do you agree with that? Even if it's exposed to high heat?

DR. CARROLL: You need to have an initiator to start that polymerization. The polymerization will not start only on temperature. And the low oxygen, oxygen will not initiate that polymerization. As I mentioned, the low oxygen stabilization is to prevent the production of vinyl chloride peroxide, which would be a dangerous material in itself, and that's what the low oxygen is about. But no, there's no initiator there to start the reaction.

MR. CAREY: Which is why they used the nitrogen injection as a blanket to inert the atmosphere, right?

DR. CARROLL: So, this is not something that I do. This is something that's done in manufacturing. It's the result that's important, and the result is that you had less than 200 parts per million oxygen there, and therefore, you have very low probability of peroxidation.

MR. CAREY: Okay. So, we also heard some people testify that they thought they visually saw some material when the vent and burn was done being expelled from the railcar. How likely do you think that is that it was polymerized material, like PVC?

DR. CARROLL: Since I didn't see it and all I have is their description, it would be very difficult for me to characterize whatever it was that they saw. I would find it unlikely.

MR. CAREY: You would what?

DR. CARROLL: I would find it highly unlikely.

MR. CAREY: Highly unlikely.

DR. CARROLL: I didn't see it, and that's their surmise.

MR. CAREY: Okay. So good. So, it might have been part of the explosives that we've used. Something else, right?

DR. CARROLL: Yes. See, I'm a chemist, and I kind of need some data.

MR. CAREY: Okay. Great. Thank you, Doc.

Chief Drabick, we've heard a lot of testimony today about communications, and somebody said communications is always a problem. It sounds like it was a major problem, because we've heard the experts were talking to the contractors, and we heard

one of the experts say they never were plugged into our unified command, and it sounds like you were left out of the conversation. You were the incident commander. How did that happen? Any idea?

MR. DRABICK: That's a great question that I don't have an answer to, Chief.

MR. CAREY: I mean, I'm a fire chief, and I feel as though, you know, people don't understand the chief is in charge. There may be all these experts running around and giving advice and making decisions, and I know the contractors they do a great job, but it sounds like Norfolk Southern was talking to the contractors, and maybe they were talking to OxyVinyls and stuff, where is the fire chief in this whole process?

MR. DRABICK: I don't have an answer for that. What I can tell you is every decision we made was based on information we obtained from the subject matter experts that were available to us at that time.

MR. CAREY: Good. I'm glad to hear that. And finally, and I didn't mean to beat up on you. I'm not attacking anybody. It's just an observation.

Finally, when they did the vent and burn, who was doing the air monitoring down range to ensure that the population was not at risk from hydrogen chloride gas, CO, maybe a little phosgene, whatever. Who was doing that?

MR. DRABICK: I'll start, and I'll probably have Robert jump in and help me. To the best of my knowledge, that was a combined

effort between the United States EPA, C-Tech. Was there anybody else involved with that, Robert? I think it was just those two at that point. It was a combined effort. And the National Guard was doing some air monitoring, but I think that was more situated for around our area inside of the Village. But as far as outside and down, that was the US EPA the contractors.

MR. CAREY: EPA.

MR. DRABICK: Yes, sir.

MR. CAREY: Okay. Good. And I assume the CST was probably helping with that, knowing how they operate.

Also, what PPE was used, Mr. McCarty or Chip Day, during the vent and burn by the crews? What kind of PPE was deployed?

MR. DAY: The PPE that was used during the setup for the vent and burn operation was FRC on the ground. When they went up on cars two or three, excuse me, three or four, because of the smoke, they were in SCBA, they set charges, came down, came out of SCBA, and continued on.

MR. CAREY: 10-4. Sounds good. I don't have anything further. Thank you, Madam Chair.

CHAIR HOMENDY: Thank you, Chief. Do others at the labor table have questions? All right.

Jared, do you have additional questions? Go ahead.

MR. CASSITY: I do. Thank you.

Sorry, I just lost my place. Mr. Thomas, you had, did I hear you correctly in that OxyVinyls did try to join unified command?

MR. THOMAS: No, I did not state that.

MR. CASSITY: Okay.

MR. THOMAS: Did we try to join?

MR. CASSITY: Yeah.

MR. THOMAS: No, I didn't state that. Maybe Mr. Smith had indicated earlier that when he showed up and the NTSB was asking some questions from him about polymerization, Mr. Smith indicated that, I think Mr. Williams from Norfolk Southern said his communication was to go through SPSI, and then SPSI would talk to Norfolk Southern, and that was the communication flow that was set up from the beginning.

MR. CASSITY: Okay. Chief Drabick, can I ask what the process is actually like in establishing the members of the unified command, how that decision is made on who's privy to that committee?

MR. DRABICK: All stakeholders involved in the incident are part of and invited to be part of the unified command. If OxyVinyls would have made their presence known and requested to, they absolutely would have been part of that as well.

MR. CASSITY: Okay. I'm going to jump back and forth here, and I apologize. I just remembered what I was going to ask.

Mr. McCarty and Mr. Day, just as a matter of fact, I don't need a breakdown because time is tight, what is the time difference in performing a hot tap versus a vent and burn? You know, does a hot tap take longer or less time than a vent and

burn? What's that scenario or that comparison look like?

MR. McCARTY: Great question. Thank you. So, step one you have to remove the outer jacket. You've got to peel back the jacket in the low spots, remove the thermal blanket, the insulation. You have to weld on the car nipple. Then, depending on the tactical set up after that, you're only drilling an inch-and-a-quarter hole. One inch-and-a-quarter hole. So, extraction, assuming it was still liquid and not polymerizing, it would have taken a long time to de-inventory five cars. Like, days.

MR. CASSITY: For the hot tap you're saying it would have taken a very long time, correct?

MR. MCCARTY: Correct.

MR. CASSITY: Okay. So, in comparison to the vent and burn, the vent and burn, is it fair to say, is the much quicker process?

MR. DAY: So, the vent and burn operation, it takes about three to three-and-a-half hours to set up once the crew is on scene. And the burn down, depending on how much product is left in the cars before the initiation, should be anywhere from four to six hours, approximately.

MR. CASSITY: Okay. Thank you. Dr. Carroll or maybe Mr. Thomas, I think it was Mr. McCarty and maybe Mr. Day, too, had mentioned that one of the cars had been burning and had snuffed out I think was the term they used. Is there an explanation in your all's opinion that would justify that that does not include

polymerization?

MR. THOMAS: Yeah. One potential alternative solution is the railcar had vented for the last time, again, as we understand it on Saturday afternoon. It would have been at an elevated temperature to make the relief device go off somewhere around 185 to 190. And so, over that next time period, you know, it's trying to cool down, and it takes a while, right?

Well, I think what I read in there is there wasn't audible hisses from the leak, so it makes me believe it could have been a small leak. And what will happen is pressure in the railcar drops with the temperature, it's affecting the amount of flammable material that's coming out of the railcar. So, it's possible that you just got to a point on that railcar where you were at the boundaries of the flammability limit, and as that pressure dropped, you just weren't pushing enough vinyl out to sustain the fire. I do think that's a plausible explanation, at least from my perspective.

MR. CASSITY: All right. I appreciate it. And I'm running out of time again, so I'm going to take my Michael Jordan's last shot here.

Dr. Carroll, with everything that you have heard or seen today, and you were asked would you do a vent and burn, would you have made the decision to vent and burn knowing what you've seen here today?

DR. CARROLL: I appreciate the question, but an incident like

this is not my expertise. And I think what you can hear from all of the testimony is that there's a lot that goes into this. I'm just a chemist, and I'm here to provide you with some thoughts on the chemistry. But I thank you for asking.

MR. CASSITY: And Mr. Thomas, from OxyVinyls perspective I'm kind of curious because you all did say some counter things to what we had heard a little bit earlier in the testimonies, would you have supported the vent and burn, placing that decision on what you know now?

MR. THOMAS: Yeah. So, our role isn't to make a judgment on the vent-and-burn decision. That's their expertise. We're simply there to try to help equip them with information on our product that they can factor in into that, right? So, we've never passed judgment on it as a good or bad. What we've simply done is said, you know, this is what we saw in the data. But look, we communicated how you can know, because it is their folks, it is their presence, it is the risk to their lives. So, we said, look, if you can get temperature data, you will know for sure. You don't have to take my opinion for it. It's that clear. The science is that clear, right? So, I think that's what we provided to them, but we don't sit in judgment on their decision. They have great expertise, we value that, and we were just trying to help.

MR. CASSITY: Thank you, Chair.

CHAIR HOMENDY: All right. Well, thank you very much. We're

going to move on to questions by the Board of Inquiry, so I'm going to start.

Chief Drabick, I read in your testimony, I did read your statement about the 13 minutes, and it being related to wanting, them wanting to conduct the vent and burn in daylight. At what point did you become aware that OxyVinyls existed?

MR. DRABICK: The only knowledge I have of OxyVinyls and any interaction with them whatsoever was early on when we were still at the Main Street command post. Somebody from there came in, announced themselves as members of OxyVinyls looking for Norfolk Southern.

CHAIR HOMENDY: That's it?

MR. DRABICK: That is the only interaction, conversation, anything that I had to do with OxyVinyls, whether it be them or through anybody else.

CHAIR HOMENDY: Thank you. Did Norfolk Southern inform you at any point that they had spoken to OxyVinyls and that OxyVinyls did not believe polymerization was occurring?

MR. DRABICK: No, ma'am.

CHAIR HOMENDY: Do you believe you should have been provided that information, certainly with 13 minutes to make a decision?

MR. DRABICK: I believe any information you have is power, and the more information you have the better you are prepared to make decisions.

I think that the polymerization, as it's been said many

times, is just one aspect into this whole process that we had to go through. Again, I revert back to we took all the information we had from the subject-matter experts. And not just me, the entire unified command staff. We took all of that information and listened to the options we had.

CHAIR HOMENDY: There's decision making, and then there's informed decision making?

MR. DRABICK: Correct. Having that information would have been good to have. It's another piece of information. I can't say whether it would have changed the outcome on the vent and burn at all. But, yeah, that information would have been good to have.

CHAIR HOMENDY: Mr. Padfield, do you think Governor Shapiro deserved to have that information?

MR. PADFIELD: Ma'am, I do believe that that information would have been nice to have to be able to help inform the decision.

CHAIR HOMENDY: And Major General Harris, do you think Governor DeWine should have had that information to consider?

MAJOR GENERAL HARRIS: Madam chair, it would have been helpful.

CHAIR HOMENDY: All right. Thank you very much. I do, with my time -- well, let me ask. Mr. Wood, if you could go back, knowing what you do now, would you provide that information so that you can, you could provide a complete picture for everyone to consider?

MR. WOOD: Like I've said before, you learn something from every incident. We absolutely, we take a hot wash at this, we'll take a look at everything and anything that we feel like we can correct or improve on, especially from a safety standpoint and for first responders to speed an incident along, we'll always take that into account.

CHAIR HOMENDY: Thank you. But do you believe that the Chief should have had information on any concerns from OxyVinyls, as incident commander?

MR. WOOD: What I can say is if the man says that was information that he would like to have, we probably should do a better job of getting that information to him.

CHAIR HOMENDY: And for the governors as well?

MR. WOOD: When we're dealing with a real-time emergency basis, we're funneling information up through unified command. How information disburses out of unified command is not a sole Norfolk Southern process. That's a unified command process.

CHAIR HOMENDY: Right. But Norfolk Southern had the conversations with OxyVinyls. And if nobody knows the conversations were had, that information needs to be provided.

MR. WOOD: I understand what you're saying, but that's not the question I was asked.

CHAIR HOMENDY: I asked if you thought that Governor Shapiro and Governor DeWine should have had that information, if you should have provided that information?

MR. WOOD: Yes. So, I guess what my answer is if Chief Drabick says that that's information that he wished he would have had, should have had, we're going to have to do a better job providing that to unified command. But ultimately, it going to any governor or party that's not there, that's a unified command decision how that information is treated.

CHAIR HOMENDY: Okay. Thank you very much for clarifying that. Appreciate it.

With 14 seconds, I will turn over to Vice Chairman Landsberg.

VICE CHAIR LANDSBERG: Thank you, Chair.

Rick, in the heat of the moment, no pun intended, a lot of decisions have to be made with imperfect information. I hope these questions are not too ignorant.

Chief Drabick, blue sky, I guess the source of much of the problem was the pool fire, that it was heating up the tank cars. You probably did not have any means of suppressing that pool fire, is that correct?

MR. DRABICK: No, sir.

VICE CHAIR LANDSBERG: What would it have taken in terms of equipment to be able to do that?

MR. DRABICK: I honestly don't have an answer for you. I couldn't begin to imagine what all we would have needed to contain such a large pool fire, not only extinguish but contain it.

VICE CHAIR LANDSBERG: Yeah, I'm just kind of thinking about as we look forward to prevention strategies if there is a way,

particularly if it's an ongoing kind of situation, if there was centrally located, heavy-duty pool fire suppression equipment if it could be made available. I'm not saying this is based on any --

MR. DRABICK: Yeah, I mean, that would probably be helpful. Again, you run into financing that.

VICE CHAIR LANDSBERG: Understand. There's always money involved.

MR. DRABICK: Yeah, it's always money. Staffing that, and --

VICE CHAIR LANDSBERG: Of course, and training.

MR. DRABICK: Training. And, you know, when you get into equipment like that, although the necessary equipment of it and how often it would actually be used, you stand a chance of replacing that equipment before you even use it.

VICE CHAIR LANDSBERG: Understand. Thank you.

Mr. Wood, you had mentioned that there were other problems involved besides just polymerization. Can you elaborate on what they were and what the consequences of them might have been?

MR. WOOD: Again, we were dealing with a liquified, flammable gas. While one of its also abilities was as a, it was a monomer. But first and foremost, it was a liquified flammable gas under pressure in a damaged vessel. That, at the heart of it, is the highest danger. That, if that car fails, that is a large cloud of liquified flammable gas that's going to light off and has devastating consequences.

And again, as Drew had mentioned, inability to do a comprehensive damage assessment, the ability to offload the car, and other means of handling, a vent and burn is conducted. And I don't have the numbers at all, but guess is most vent and burns are done on just a liquified flammable gas that's not necessarily a monomer.

VICE CHAIR LANDSBERG: Understand. Thank you.

Mr. McCarty, I know you had a lot of decisions to make in a very short period of time. Could you describe, we've had some things described about what goes on in the ground works. Could you describe what's involved in preparing the car itself for the vent and burn and what your technicians and perhaps Mr. Day as well about what they have to do on the top of the car and on the bottom of the car besides just setting flares? That makes it sound very simple. I think it's more complex than that.

MR. MCCARTY: Thanks for the question. So, years ago in the early development that AAR did out at CERTCI and TTCI in Pueblo, they used to teach us to take the outer jacket off, to go up there and peel jacket, remove the insulation, remove the thermal blanket and just get the explosive shape charge right on the tank. Jason Poe's father, Billy Poe, was the pioneer in all this, and Jason's second generation in his family business, so to speak. And Chip helped them a lot with this development. And basically, they've perfected their craft where we no longer have to put people in those exposure risks to do that excessive prep work. He has the

ability to get in there and go through the jacket and the tank in a shape charge effect.

And then as far as the prep work, you know, he needs three hours for five cars. You know, keep in mind, folks, we dug ditches and berms throughout the night and in the morning and throughout the day up to that charge, so I'm not sure if it answered your question.

VICE CHAIR LANDSBERG: It does. Thank you.

Chair, I'll defer the rest of my time. Thank you.

CHAIR HOMENDY: Great. Member Graham.

MEMBER GRAHAM: Thank you, Chair.

Can we pull up group D, Exhibit 1, please, on Page 3. And this will be for you, Mr. Wood, as it comes up. It's the incident briefing on Saturday morning, the 4th at 11:13. I'll wait for it to come up. There we go.

And on the, I think it's the third line down there it says, "monitor active vent from vinyl chloride car to establish exhaustion of product." So, generally, how does one calculate or estimate the exhaustion of a product?

MR. WOOD: I'm not sure where you're looking at on.

MEMBER GRAHAM: Okay. From the top of the page there it says "objectives, this operational period, established air monitoring," and then the next line down it says, "monitor active vent from VC car to establish exhaustion of product."

MR. WOOD: Yes. That's what we had been doing the entire

time. I didn't create this actual document. But we had, there was a camera set up visually observing these cars all through the night and in, through the day and into the next day. And that's what we were observing, the burn rates of the cars looking for PRD's going off, but physically monitoring the burn or the active burns coming from the cars.

MEMBER GRAHAM: Okay. So, how does one generally calculate how much is burned? How much product has been expended? Or do you have a -- does your contractor do that for you?

MR. WOOD: There are folks who can do burn consumption rates. I'm not one of those. Whether that, that amount of data, how accurate that could be, I honestly couldn't say. I know I was not party of any calculation on the burn rate.

MEMBER GRAHAM: Okay. So, then from the time of the derailment up to the vent and burn on the 6th, I assume you don't know how much product has been expended from one any one of the four vinyl chloride cars, is that correct?

MR. WOOD: That would be correct.

MEMBER GRAHAM: Okay. How about Mr. McCarty or Mr. Day?

MR. MCCARTY: Thanks for the question. So, the three cars in particular that have been burning and exhausting their product and fire since Friday night, it was not just the pressure relief device. Both liquid lines had been adding liquid, you know, at the top of the pipe underneath where those valves and gaskets bolt down to the pressure plate, so there was liquid also being fed

into those particular fires on those particular three cars.

So, that's where the uncertain calculation, it would be too hard to quantify. But like I say, the experienced folks in the team felt at least half empty was a reasonable estimate. There was some people thought empty, some of us felt maybe not empty, but, you know, we see how you could think that with the liquid lines burning. But as Mr. Wood just said, it's nothing you can quantify very easily without some more, you know, not knowing what those flow rates were, and it's hard to guess.

MEMBER GRAHAM: Thank you for that.

MR. MCCARTY: And we don't guess.

MEMBER GRAHAM: Yeah. Understood. Not an exact science at that point, is it?

Mr. Thomas, if you would, do you know what the rated capacity flow for the pressure relief devices for each of the five vinyl chloride cars are?

MR. THOMAS: I have seen the information, the Midland information on what those flows are. I don't remember them off the top of my head, but I have seen the charts on them.

MEMBER GRAHAM: Sure. Were you ever asked by Norfolk Southern or its contractors to determine how much product had been exhausted?

MR. THOMAS: No.

MEMBER GRAHAM: On February 5th, the PRD of the tank car, OCPX 80179 actuated and emitted a violent release for 70 minutes.

What effect did that violent release have on exhaustion of the product?

MR. THOMAS: Yeah, I think that was on the Saturday the 4th, I believe, is when that was. But, you know, you can't really quantify that unless you know the flow rate through it. Some valves, you know, modulate, some are wide open or closed. So, without really knowing, but 70 minutes at a very high level is a lot of material coming through the valve. You just don't know the pressure which it's leaving at.

MEMBER GRAHAM: I know during an internal meeting among your folks in Dallas on the team there on February 5th, it was stated that three tank cars and the pool fire were nearly empty. How did the team come up with that conclusion, and do you stand by that conclusion?

MR. THOMAS: Yeah. What I would say is I would. I think the evidence, at least from the observations, they described the 80179 car, the one that had the 70-minute episode, it was described as going off 30 seconds for every two minutes. And I've seen different numbers, I've seen 15 hours, what I remember was eight to 10 hours. So, if you just do the math on that, you know, it's going to say you've got two or three hours of cumulative venting.

Now, there's some pretty big assumption with the 30 seconds every two minutes. We didn't think they were stop watching it. But just generally speaking when we heard those numbers followed by a 60 or 70-minute single release, that's a lot of release time

through the, through the railcar. And, you know, the commentary was that railcar has got to be at or near empty based on those broad assumptions, but you can't do finite calculations unless you know some of the other details.

MEMBER GRAHAM: Understood. Thank you. And did the team ever estimate how much, try to estimate how much was left in any of the cars before the vent and burn?

MR. THOMAS: No.

MEMBER GRAHAM: No. Okay. Thank you for that. Chair?

CHAIR HOMENDY: Member Chapman?

MEMBER CHAPMAN: Thank you, Chair. Mr. McCarty, just to clarify for those that aren't familiar with the process, myself included, would you describe hot tapping and how that process works?

MR. MCCARTY: Sure. It's essentially establishing a valved port for liquid product extraction in a critically damaged car when all valves and fittings are not usable and not accessible. In prep work, it's removal of the outer jacket, removal of the thermal protection, removal of the insulation, using an ultrasonic thickness tester to verify the tank wall thickness for that welder and that whole burn through planning. Essentially, weld a threaded nipple, whether it's a shorter nipple, you weld a nipple on there, leak test it after the weld to make sure the weld is good. You install full port, in other words, not a gate valve or a restricted ball valve, but a full-port ball valve onto that

nipple. And again, it's all leak tested. Then there's a special device called a hot tapping machine. It's essentially a high-tech drill with a lot of packing around its shaft.

So, it's a high torque, slow-speed drilling process that you will drill through an open valve, the hot tap machine is mounted to the valve, your valve is in the open position. You run your bit down through to touch the top of the tank. You drill through the tank shell, and when you break through, product is coming but the hot top packing and everything has it trapped. You extract your bit and your shavings out through the ball valve, and you close the ball valve and you've essentially tapped into the tank with an inch-and-a-quarter drill hole.

MEMBER CHAPMAN: And you're drilling into, if this is done correctly, you're drilling into liquid product, not into the vapor?

MR. MCCARTY: That is correct. It's incredibly dangerous to consider welding in the vapor space of any flammable container, whether it be something benign as a diesel fuel tank or in this case a flammable compressed gas tank car is a welding safety 101, you never, never, never weld in a vapor space of a flammable container.

And that was the uncertainty from, you know, all the good teamwork people were talking that they might have a theory that they could be empty based on the liquid lines burning and that PRD going as the gentleman from Oxy just talked about. With all that

uncertainty, you know, one of my mentors in my life was the late Bob Full, and he always said hope is not a plan. So, we don't rely on hope for things to go well. And I mean, we don't guess. We know that vent and burn is a proven tactic, and that's the last-ditch tactic in the toolbox that was safest thing for this community.

MEMBER CHAPMAN: So, at that, at these later stages, it was, there were too many uncertainties to be able to deploy that sort of attack without very high risk, is that your assessment?

MR. MCCARTY: I'm sorry, can you rephrase that last statement?

MEMBER CHAPMAN: At the point where decisions were being made about whether or not to vent and burn, the idea of using hot tapping, I mean, assuming you had, you could have been convinced that polymerization was not occurring, which I understand is not where you were at the time, but hot tapping at that point in the process would have been highly risky because of the other variables involved, not knowing how much product was in the tank, where you were drilling, that sort of thing?

MR. MCCARTY: Thank you very much for the question and that clarification to the question, and make sure I get my frame of mind, and I'm sorry. I just, I'm just getting my -- I hate to ask you this. Can you ask that last part one more time, because I've got the right answer that you're looking for, and I just want to make sure that I don't botch it.

MEMBER CHAPMAN: Yeah. Well, we've heard, obviously, different points of view today in terms of whether or not polymerization was occurring. I know you and most of the team, the Norfolk Southern team, were convinced it was occurring. If you could have been convinced that it wasn't occurring, hot tapping would still have been a very risky option at that relatively late stage of the event because there was uncertainty about how much product was in the tanks and at what levels and where within the tanks, is that correct?

MR. MCCARTY: Yes, sir, that is a hundred percent accurate. And that was, it's a hundred percent accurate.

MEMBER CHAPMAN: Thank you, Chair. I do have some other questions.

CHAIR HOMENDY: Thank you very much. It's only fair that I ask OxyVinyls the same question that I asked Mr. Wood.

Looking back now, do you think you should have raised your concerns with others? I understand you weren't in incident command, but you were on scene?

MR. THOMAS: Yeah. No, thanks for the question. I think the whole time we were communicating with SPSI and SRS and others, you know, we had confidence that the things that we were sharing with them would make their way through the incident command. That was our mindset at the time. Certainly, now the evidence is not all of the information that we were sharing made it into the incident command, and so, I definitely think that's an opportunity worth

looking at, you know, in the future.

CHAIR HOMENDY: I have some questions about the environmental emergency response agreement. This is an agreement for work between Norfolk Southern and Specialized Professional Services.

The agreement references, "contractor shall keep full and detailed records as necessary to reflect the work performed at the project site, including where applicable all testing, sampling, monitoring, and investigatory services performed by the contractor. Upon completion of the work, all original reports prepared pursuant to above shall be furnished to the railway." We see there are other references to daily reports. Is that something you can provide the NTSB, those reports?

MR. MCCARTY: Yes, ma'am.

CHAIR HOMENDY: Okay. Thank you very much.

MR. MCCARTY: I mean, I assume that would be subpoenaed. I can do that, right?

MR. WOOD: Yeah, and I think there might be probably a slight misunderstanding. While part of what their daily reports they do or their equipment on-site, their personnel and everything, but they are required at the end of a job to provide a comprehensive spill response report which covers everything they did, if they handled waste manifest, copies of manifests and all of that. We generally don't get those completed forms until a minimum of 30 days after a job site is complete. I would suspect that may be quite a bit longer on this one since we're still on the site

working. So, there are two different kind of reports, so I'm not exactly sure which one you're looking for.

CHAIR HOMENDY: Probably both. We have a reference to the daily reports, and we have a reference to the other reports that you mentioned.

MR. WOOD: Yeah. And again, part of that comprehensive written report has a daily breakdown. So, on this day, we did X, Y, and Z. But their other dailies are strictly about their equipment and personnel, rates, and that kind of stuff, and their invoice. That's a daily breakdown of those as well as.

CHAIR HOMENDY: No, I appreciate that. I think it would be helpful to our investigative staff if they had that information, so they can follow up with you.

MR. WOOD: Yes. We can get you what we have now. What I will tell you, the comprehensive report, we still don't, we don't have that, and we won't have that. We will gladly share anything once we have the, have the report in our hand, and we will gladly do that.

CHAIR HOMENDY: I understand. The Article 4 of the agreement states that the contractor will furnish information as necessary to meet the time schedule for completion of the work. And then later it talks about a schedule, dates, deadlines and time limits that must be strictly followed and met. When did you arrive on scene, Mr. McCarty?

MR. MCCARTY: I'm not sure exactly what time I arrived. It

would have been approximately 30 minutes after one of my senior supervisors or senior project managers, Mr. Tokarski was also interviewed by Mr. Stancil. And he arrived, I think, 30 minutes or so after Mr. Deutsch. So, I'd have to put that together in your records. I don't remember what time I got on scene. It was somewhere --

CHAIR HOMENDY: 8.

MR. MCCARTY: Friday night. Friday night. I was here fairly quick, but it was, I'd say before midnight for sure.

CHAIR HOMENDY: And I know you can change the schedule. It says that in the contract. You can change the schedule with conversation with the railway, but did you have an estimated time frame for the work that you had an agreement for?

MR. MCCARTY: No, ma'am. The work on derailments just is an unfolding dynamic thing. It's not anything that the railroad says, you've got to be done by Tuesday. We don't get that kind of pressure from the railroads.

CHAIR HOMENDY: Okay. So, no deadlines, nothing?

MR. MCCARTY: No, ma'am.

CHAIR HOMENDY: Okay. Great. Thank you so much. Vice Chairman Landsberg?

VICE CHAIR LANDSBERG: Thank you, Chair.

Mr. McCarty, is there any way to determine the amount of liquid inside of a damaged tank car, sort of like you do with a propane gas tank for a home grill situation, so you might have

some certainty? I realize you've got jackets and things in the way, but?

MR. MCCARTY: So, the answer is sometimes yes and sometimes in this case, no, there wasn't a safe way to get it. Some of these cars, as I recall, did have gauging devices on them, but they were fire damaged and inoperable.

For us to get that information you're looking for, we'd have to physically get people in there with either cold-cutting equipment or torch equipment to peel off jackets. And once again, you're into kind of an extended operation and unknown mechanical damage. In cold cutting, it would have been a series of vibrations with a cold cutting cold work machine that just, we didn't want to add vibrations to cars that we were concerned about that could have had cracks or things we didn't understand yet or that we didn't know about yet with hidden damage.

And in hot work, there were so many flammables that were kind of igniting, going out, reigniting, going out, we didn't want to get a torch person or flash fire trying to remove a jacket.

So, sometimes in certain wrecks we can remove jackets and do some thermal imaging. In this case, we just didn't feel comfortable putting people --

VICE CHAIR LANDSBERG: I understand. It's a dynamic situation. The last question on hot tapping, so I'm quite intrigued about the drill. Does the drill operator have to stand right there, or can it be done remotely?

MR. MCCARTY: No, it's another spot-on great question. You, essentially, have to dig somewhat of a work pit. And inherently, that was another factor in the thought process with all the burning and residual flammables and chemicals in the spillage. That was another factor in the thought process because you would have had, inherently had to have your welder and support people in a trench with burning and oozing stuff coming into the trench and the lowest parts around those cars. So that was certainly another factor in the consideration as to the safety of considering hot tapping.

VICE CHAIR LANDSBERG: Okay. Thank you.

This would be for Dr. Carroll or possibly Mr. Thomas. From the vent and burn, we know that there was a significant amount of cloud that was formed, and so, could you tell us a little bit about the fallout from the cloud in terms of toxic chemicals and things of that nature?

DR. CARROLL: Once again, it would be good to have data because there are samples that can be had of those kind of plumes. But we've talked about the chemical products of combustion, the carbon monoxide and HCI and possibly phosgene. The black cloud is, essentially, polycyclic aromatic hydrocarbons and carbon. I mean, it's carbon black. It's soot. It's difficult to speculate about other materials. When I say polycyclic aromatic hydrocarbons, I mean a plethora of individual chemicals that we just sort of generally refer to as soot. So, that's what mainly

comes to mind for me. Are there other things that you were thinking of?

VICE CHAIR LANDSBERG: Well, I'm just curious in terms of was there any, obviously, I would hope there would have been sampling done downwind of what actually fell out of the cloud in terms of the chemical composition. And so, as we're trying to learn as much as we can from this tragedy. And so, what did you discover, if anything?

DR. CARROLL: My recollection of the bits that I saw was that they did try to sample for phosgene and didn't find any. But other than that, I don't have any specifics of air monitoring that was done.

VICE CHAIR LANDSBERG: Or ground monitoring? Or ground?

DR. CARROLL: Or ground. And in this case, as was testified to, this would probably not be an issue for soil because the vinyl chloride would evaporate. It's a vapor at ambient temperature. So, it's not going to run into the ground and get into the ground water. And I do think there was some ground sampling that was done and didn't find any.

VICE CHAIR LANDSBERG: Okay. Thank you very much. No further questions, Chair.

CHAIR HOMENDY: Member Graham.

MEMBER GRAHAM: Thank you, Chair.

Dr. Carroll, on that, when vinyl chloride monomer is venting out the pressure release device it's burning off, what is the

byproduct of that again?

DR. CARROLL: There are three. You have carbon monoxide and possibly some carbon dioxide. I mean, just like normal combustion. Hydrogen chloride, and initially it will be hydrogen chloride as a gas, but because it's very hygroscopic, it will tend to draw moisture to itself and will probably form very, very small droplets of material.

And as I said, the one lab report that did this, reported a side product of phosgene at levels far less than either of those other two products of combustion.

MEMBER GRAHAM: Okay. Thank you for that.

Mr. Wood, I think you had a contractor come in to monitor the air. Were they the first ones on site monitoring the air --

MR. WOOD: I think the first personnel from CTEH arrived on-site about 1:00 a.m. on Saturday morning following the derailment, and there has been non-stop, community air monitoring, worksite air monitoring by both CTEH, and I believe EPA had already started by as early as that Saturday morning. And it's still ongoing today.

MEMBER GRAHAM: Absolutely. Do you know when they started monitoring for hydrogen chloride?

MR. WOOD: That I cannot answer. I would have to ask about that. I knew it wouldn't have been early on because that would not even have been an issue until the vinyl chloride cars actually started venting out the PRD's because there was no release of

vinyl chloride as part of the original derailment.

MEMBER GRAHAM: Okay. Thank you for that.

Move over to Mr. McCarty here real quick, and I'm just going to paraphrase a few things here. After the one vinyl chloride car released for 70 minutes, I think that was Saturday the 4th at about 1731. I'm looking in the transcript of your interview, and I won't go over all of that what's in there, but it sounds like you were somewhat convinced that the product was polymerizing after that event and things were getting gummed up under the pressure plate, I think, you had quoted as saying.

Following that conclusion on Page 18 of your transcript, you said, "and we were already there at vent and burn in our minds." Is it correct to say the first time you felt the vent and burn was the right option was at that time right after that vent? I guess that would be Saturday evening?

MR. MCCARTY: Yes, sir. That was my feeling when that car did that. The entry that our teams were doing when that happened, one of their assignments during that entry was to be reconning this discussion of where to dig pits for welders and can we get in there and can we pipe it out to a burn pit. That was part of their task assignments for that particular entry when that car did that.

So, we were, as I mentioned before, yes, you ask what we do for railroads. We try to be a step ahead of the next tactic. When it's safe to do so, we want to be ready to take a tactic to

command and propose it and be ready to execute if they approve it. So that's kind of what we do.

And you're precisely right. When that car behaved that way, we looked at that one, the one beside it to the east that was in the same pool fire but never vented, never leaked, and never released its PRD. The one to the west of that in that same pool fire and the one to the west in a very similar thermal dynamic pool fire for quite a while, we now looked at them as a set of very concerning cars.

And again, back to my trainings from Chlorine Institute to member companies, when the PRD's had calmed down, they calmed down and they took away the pool fires dwindled to nothing, calm for a couple hours, and then suddenly and violently not only released but released with exponentially more pressure and violence to it and sustained, that had me in my experienced mind saying something is going on inside that car. And multiple data resources all led to polymerization in my hypotheses.

Now, as we've also reminded, the mechanical damage of the wreck dynamics, it also eliminated us peeling jackets, looking for scores and gouges and things. We just never had that comfort level opportunity to put people in that zone to do those kinds of things for fear of if we had one of those five cars with one-quarter inch score, we're talking about an adjusted working pressure down as low as 112 PSI. In our minds, one of those cars could have come apart at any moment. Everyone’s hung up on one

car to the west or this one or that one, it was a set of four cars that were in serious heat conditions for a very long time.

All the PRD's had been working, they calmed down, then that one did what it did, the liquid lines, the vapor lines on the one on the west, they were fueling a fire nicely until they weren't. Something choked off that gas to feed those fires, and it had nothing to do with the PRD spraying and what pressure it was going on, and it had nothing to do with the potential of auto refrigeration cooling down the interior of the car and lowering the pressures. We had hot metal, so the product inside wasn't auto refrigerated.

We just felt with all of our combined experiences and every symptom we were faced with and every piece of data that we could have to back us up, we just did not feel good about offensive tactics other than the last-ditch tactic that has been taught to us for years and developed by the AAR and proven to be effective.

MEMBER GRAHAM: Thank you, Mr. McCarty. My time is up?

CHAIR HOMENDY: No, you can have a few more.

MEMBER GRAHAM: If you don't mind, yeah, thank you, Chair.

Yeah, when you were saying we were already at that, we were already there at the vent and burn, who did you mean by "we."

MR. MCCARTY: I'm going to say we as my SPSI team, myself, one of my seasoned project managers that has been with my company a very long time. We had shared this concern with Norfolk Southern and that's when they called Mr. Day, a friend of mine, a

colleague. We're competitors but we're friendly competitors, and he has a lot more vent and burn experience than I do. His career path has had him all over North America and Canada, and he's done a lot more vent and burns than I have. It was the right call, bringing as much expertise as possible.

So, I appreciate Norfolk Southern, not going to command with just my opinion. It was great to bring Chip and his colleagues in. When you added the people that he brought, the people that I had, we had that over 200 years combined experience.

MEMBER GRAHAM: Great. And was it Saturday night you approached Norfolk Southern with that concern?

MR. MCCARTY: Within getting my guys clear of the hot zone, as soon as we rallied up back at our trailer on Saturday, so it would have been whatever time, that's 5:35, 6:00-ish, whatever time in that era, that would have been the era that, yes, we were like, man, I think we just lost hot tapping. I'm not sure if we feel good about this. And we soul searched and thought through it and back to that, do you really, you know, the answer is we didn't make a hasty decision, but we absolutely felt at that moment in time that this was likely going to have to go to vent and burn. And like I say, that's when --

MEMBER GRAHAM: And who with Norfolk Southern did you let them know with that concern on Saturday? I don't think it was Mr. Wood, right?

MR. MCCARTY: No, it would have been either Mr. Deutsch or

Mr. Gould, one of the two Scotts I worked with in that era. I just don't remember which one was right with me there.

MEMBER GRAHAM: Or Mr. Schoendorfer?

MR. MCCARTY: No, that would have been Mr. Woods' supervisor.

MEMBER GRAHAM: Okay. And when did you guys start preparing for the vent and burn?

MR. MCCARTY: So, planning-wise, sometime Sunday after Chip, basically, Norfolk Southern afforded Chip and his colleagues to get there and do an independent assessment, which I appreciated. And so, it was really, like I say, after the meeting at the, I'm sorry I keep forgetting the name of the building, the town hall building, the administrative building, it was after that meeting where the planning really kicked in.

MEMBER GRAHAM: Okay. And was that on Sunday?

MR. MCCARTY: That would have been Sunday, yes, sir.

MEMBER GRAHAM: Okay. All right. Thank you. I want to thank all the witnesses. I really appreciate this in this heat and the lights, and that's all I have, Chair. Thank you.

CHAIR HOMENDY: Member Chapman?

MEMBER CHAPMAN: Thank you, Chair.

Mr. Wood, I have a question for you, but before I get to that, I want to get it off my chest. I was a music major in college, so all of this discussion of polymerization is a struggle for me. But I'm learning, and I appreciate all the witnesses today and presenting your information.

Certainly, in preparing and up until fairly late in the day here, it was my impression, perhaps oversimplified, that the decision to vent and burn was based on a belief, a good-faith belief, that polymerization was, in fact, occurring. However, Mr. Wood, you indicated, and I think you've also explained it in response to Chair Homendy, but you indicated fairly late in the day here that there were, that it wasn't the only factor, that the belief the polymerization wasn't the only factor that led to the decision to vent and burn.

By that, do you mean that it was not possible to do a full risk assessment, a full damage assessment of the tanks, and that other options, such as hot tapping, which Mr. McCarty just described for us in detail were too risky? Were there any other factors involved in the decision other than a belief that polymerization was occurring? For Mr. Wood.

MR. WOOD: No. I think Drew covered it quite well. Aside from the polymerization, this is a liquified, flammable gas. These cars were heavily damaged by fire, there was mechanical damage. That exists outside of any polymerization, so the damaged unusable valves, the unsafe conditions to perform hot taps, are not dependent upon whether the car was polymerizing or not. The polymerization possibility is just an added component. But the hazards that existed with the cars would have existed with those cars whether they were vinyl chloride cars or they were propane cars. The same hazards existed with them.

MEMBER CHAPMAN: Thank you. And I assume that that was being communicated fully to the incident commander, the Chief, and that, then, was, that information was available to be factored in in the discussions with Governor Shapiro, Governor DeWine, that sort of thing? Chief, I see you nodding your head, and I appreciate that.

Were we down to, basically, a situation to where because of the risks involved, there were few options, maybe no options, in terms of practically or safely offloading or disposing of the vinyl chloride?

I'll direct that to you, but others are certainly welcome to weigh in. Mr. Wood?

MR. WOOD: The damage to the cars rendered the normal decision trees unable to move, unable to offload using offloading valves. The not being able to safely put people in an area to do a hot tap to remove the car, the contents of the car that way, we are down to the end of the decision tree, the vent and burn, as the only safe means to render it. Because when you add the possible, in our mind, the possible polymerization that was going on, we still have to consider if we don't do something, there could be a violent, catastrophic event of that car coming apart due to over pressurization due to the polymerization. So, we have to factor all these things in. So, it's not just one thing. It's that whole puzzle.

MEMBER CHAPMAN: If the information from OxyVinyls had been more clearly communicated through whatever channel, would that

have impacted the decision, the final decision to conduct the vent and burn? Their views with respect to whether or not polymerization was occurring? And Chief, maybe it's best to address that to you.

MR. DRABICK: Yeah. Again, as I stated earlier, we follow the recommendation as does every other organization in my situation of the subject matter experts. Although that would have been good information to have, you know, more stuff to process, however, being explained as it has been that the damage and the safety factor, it probably would not have changed the outcome.

MEMBER CHAPMAN: So, good information to have had at the time, but probably not, not a game changer in terms of decision-making process, is that your view?

MR. DRABICK: Correct. Yeah, as I said, these guys have all the expertise in this, as they were saying, 200 years of experience. You know, you trust what they tell you based on their knowledge, skills, and ability and training. And presented to us in that fashion, I think we still would have had the same outcome, sir.

MEMBER CHAPMAN: Thank you. Thanks to all the witnesses. Chair, thank you. That's my last question.

CHAIR HOMENDY: Thank you. I just want to ask one more time. Would it have been helpful to have the information?

MR. DRABICK: Yes, ma'am, it would have.

CHAIR HOMENDY: Mr. Padfield?

MR. PADFIELD: Yes, ma'am.

CHAIR HOMENDY: Major General?

MAJOR GENERAL HARRIS: Yes, ma'am.

CHAIR HOMENDY: One thing I do want to ask about is the safety data sheet. Is that something, I know it's one tool of everything else that you're looking at. Is that something you all looked at?

MR. DRABICK: From the fire department standpoints, that's --

CHAIR HOMENDY: Oh, I meant contractors and Norfolk Southern. I'm sorry, I didn't. Yeah.

MR. MCCARTY: Yes, ma'am, we definitely did.

CHAIR HOMENDY: Yeah. And I just want to, I looked at everything there was, you know, the tox plan, hazardous substances data bank, the NIOSH pocket guide, the Chlorine Institute's pamphlet, you name it, and it all says containers may rupture violently in fire. Vinyl chloride will remain stable under normal conditions. Chemicals may generate quantities of flammable and toxic vapors upon release. Explosion may result when subjected to heat. So, obviously, you're taking that information in as you're considering options.

MR. DRABICK: Yes.

CHAIR HOMENDY: Thank you very much. I have no further questions. Do you? Does the technical panel have additional questions?

MR. STANCIL: Yes.

CHAIR HOMENDY: Perfect.

MR. STANCIL: Just one last question, Chairman.

Mr. Wood, Mr. McCarty, Mr. Day, now that we're hearing that the vent and burn decision was not necessarily driven 100 percent by the possibility of polymerization, can you explain what the urgency to do it then? Or were there other options besides doing the vent and burn?

MR. WOOD: I will speak from Norfolk Southern standpoint that we were dealing with observations real time of an emergency situation, that we could not rule polymerization out or tank car failure. That's the only information and the best information we had at the time, that that could never be taken out of the equation. It just wasn't the only factor in the equation.

MR. STANCIL: Understood. Mr. McCarty, Mr. Day, anything to add to that?

MR. MCCARTY: Same. I mean, we've already, there's just all the other tactical options just weren't possible.

MR. DAY: Okay. The technical data was conflicting exponentially. The decisions needed to be made fairly quickly. We studied it the best we could. The problem you have with major incidents like this, and you get a lot of people evacuated from their residences, the longer it goes, the more people start coming back finding their way back home, and had something occurred, we would have a totally different discussion going on right now. So, we had to make a decision, what we thought was the best decision

for preservation of life and safety.

MR. STANCIL: Thank you, Mr. Day. We appreciate that. And thank you very much, witnesses. Thank you for your time.

CHAIR HOMENDY: Thank you. That concludes Panel 2.

I know it's very hot. I know. I really appreciate your time. We all do, and certainly the parties as well. On behalf of my fellow board members and the NTSB staff, we do really appreciate everything you're doing here.

And certainly, I want to give my thanks to the NTSB investigators for doing an excellent job and the rest of the staff as well. We look forward to completing our investigation and sharing our final report.

But first, let me ask Mr. Allen to please review the exhibit items or any other items that have been requested during this hearing.

MR. ALLEN: All right. Thank you, Madam Chair.

I don't believe we have any new exhibits, but we will review that for sure. There were two information requests during Panel 1, Vice Chair Landsberg requested that Mr. Deutsch with Norfolk Southern provide the NTSB with information on the percentage of first responders in the communities where Norfolk Southern operates that have benefitted from the training programs that we're discussing. Need that information into the NTSB by August 21st, please.

During this panel, Panel 2, Chair Homendy requested that

Mr. Wood with Norfolk Southern and Mr. Day with SRS provide copies of the daily and comprehensive reports that were called for.

CHAIR HOMENDY: It was Mr. McCarty.

MR. ALLEN: Oh, I'm sorry. Mr. McCarty. My apologies. If you could please provide the copies of the comprehensive and daily reports. I understand, Mr. Wood, the comprehensive are not available yet but the dailies are?

MR. WOOD: And those will more than likely be months. What dailies we have, will be happy to provide them. I'll have to get those accumulated.

MR. ALLEN: Excellent. Thank you.

CHAIR HOMENDY: Okay. Ms. Shaw, I'm a terrible lip reader. Just say it.

MS. SHAW: Yeah. No, for the document that you referenced, the emergency, the plan, it is not an exhibit yet. Would you like that full document to be added as an exhibit?

CHAIR HOMENDY: Yes.

MS. SHAW: Okay. So, we currently do have that document, so we will add that to the hearing docket as Exhibit M10.

CHAIR HOMENDY: All right. Great. Thank you. And thank you, Mr. Allen.

The transcript will be made available to the parties and witnesses electronically within seven days of completion of the hearing. Any corrections to the transcript must be sent to the hearing officer within 30 calendar days following the close of the

hearing, in this case by Monday, July 24th, 2023.

As we have no other witnesses to testify today, this concludes Day 1 of the NTSB Investigative Hearing. We stand adjourned until 9:00 tomorrow.

(Whereupon, at 6:45 p.m., the hearing in the above-entitled matter was recessed, to reconvene on Friday, June 23, 2023.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

INVESTIGATION OF:	NORFOLK SOUTHERN TRAIN DERAILMENT IN EAST PALESTINE, OHIO ON FEBRUARY 3, 2023
ACCIDENT NO.:	DCA23HR001
PLACE:	East Palestine, Ohio
DATE:	June 22, 2023

was held according to the record, and that this is the original, complete, true and accurate transcript which has been compared to the recording accomplished at the hearing.

/Richard Gilmore/

Richard Gilmore
Official Reporter