DEFENSE NUCLEAR FACILITIES SAFETY BOARD

PUBLIC HEARING ON LOS ALAMOS NATIONAL LABORATORY

NATIONAL SECURITY MISSIONS AND
NUCLEAR SAFETY POSTURE

TRANSCRIPT OF PROCEEDINGS
November 16, 2022
12:00 p.m. MST
Santa Fe, New Mexico

REPORTED BY: Robin A. Brazil, RPR, NM CCR 154
Bean & Associates, Inc.
Professional Court Reporting Service
201 Third Street, Northwest, Suite 1630
Albuquerque, New Mexico 87102

(7343N) RAB

CHAIRPERSON CONNERY: We're ready to get started, so good afternoon. My name is Joyce Connery. I am the chair of the Defense Nuclear Facility Safety Board. I will preside over today's hearing.

With me today are my colleagues on the board, Vice-Chair Thomas Summers and Board Member Jessie Roberson. We constitute the board. Having established a quorum of board members, this hearing will now come to order.

Mr. Eric Fox, the board's associate general counsel, will serve as executive secretary for the hearing. Mr. Christopher Roscetti, the board's technical director, will provide us with a staff perspective later on this afternoon. Several other members of our staff are closely involved with the oversight with the Department of Energy and Los Alamos National Laboratory in particular are also here.

Today's hearing was publicly announced on August 15, 2022, on the board's public website and subsequently noticed in the Federal Register on August 18th. This hearing is currently being broadcast live over the internet, and a transcript will be available on a website in the coming days.

We thank the members of the public for joining us for today in person and virtually. We note the presence today of some VIPs, so I'd like to recognize Anna Hansen, the county commissioner from District 2. Thank you for being here. And also Brenda Hawks, who is the assistant deputy secretary for field operations and oversight and the chief nuclear safety officer for OEM.

Our first goal of today is to gather information on the status of activities performed by the Department of Energy's Office of Environment Management, or EM, at the LANL Area G transuranic waste management facility.

Our second goal is to gather information on the production activities to be conducted at the plutonium facility, the nuclear safety risks that NNSA has accepted, and the state of planned safety improvements to the safety system infrastructure and safety programs.

Following our first session today with DOE, we will invite interested members of the public to provide oral comments at approximately 2:00 p.m. this afternoon. A list of speakers who have contacted us are posted at the entrance of the room. And again, we've listed the speakers in the order

which they contacted us.

There's also a table with a sign-up sheet for members of the public who wish to provide public comment but who did not have the opportunity to notify us ahead of time.

We ask the speakers to limit their comments based on the number of speakers we have to make sure everybody has a chance to speak. Mr. Fox will call the speakers in the order listed and ask that they provide their name and the organization they represent, if applicable.

We'll have another comment period after the NNSA portion of the hearing tonight at about 8:45, so please limit your comments at 2:00 o'clock to the EM portion of the hearing.

For this session we are glad to meet today with our counterparts from the Department of Energy's Environment Management Field Office, or EM-LA for short, and its contractor known as N3B to continue the dialogue in person on some very important subjects.

Though we have exchanged quite a bit of correspondence -- you get a lot of letters from us -- it's been several years since the board's last public hearing at LANL on environmental management

topics.

The focus of our last hearing, as you'll recall, with waste management involved inappropriately remediated nitrate salt-bearing waste, commonly known as RNS waste. In 2014 one of these drums that was packaged at LANL underwent an energetic chemical reaction after it had been shipped to the Waste Isolation Pilot Plant, known as WIPP.

This event, which resulted in the release of radioactive material and paused waste disposal across the complex for several years, has had profound effect across the complex on operational posture of the entire DOE complex.

One key recent development has been a major revision to DOE Standard 5506, which governs the safety bases of transuranic waste facilities. The department has incorporated lessons learned from the WIPP event and has put those into its new standard. Its also taken advice from one of our own technical reports, the DNFSB Technical Report 43, which identified deficiencies in that standard.

For the public's benefit, the safety basis document is a documented analysis of work to be performed, the hazards associated with that work,

and the safety controls needed to adequately protect, prevent, or mitigate those hazards.

One of our objectives today will be to understand progress toward aligning the Area G safety basis with the most current standards and guidance available for transuranic waste facilities.

Additionally, the technical focus areas and even the organizational structures at LANL have changed. One of the corrective actions from the 2014 WIPP event was to split off the environmental management functions from the existing LANL Federal and contractor organizations. We now have a DOE field office and a contractor solely focused on the operations located at Area G, the location at the laboratory that deals with legacy transuranic waste with the goal of removing the waste from the hill.

I do want to underscore the fact that there has been progress made to address the hazards spotlighted by the WIPP event. As Mr. Summers plans to discuss in his statement, there have been many lessons learned, and DOE has reduced the risks associated with the legacy waste at LANL.

That said, we would not be here today holding a hearing if there were not also challenges to be addressed now and going forward.

While DOE has addressed the issues associated with the specific type of inappropriately remediated nitrate salt waste that caused the WIPP event, there are still many containers at Area G that contain potentially reactive waste. Our DNFSB Technical Report 46 on potential energetic reactions involving transuranic waste at LANL discusses this further. While N3B has identified high risk containers and taken actions to isolate them, significant work remains before those containers can be remediated and the hazard eliminated.

We are hoping to understand some of the progress made on this front and DOE's plans to accomplish future work. As we will discuss, this relatively small subset of containers represents an outsized fraction of the nuclear safety risk at Area G.

N3B faces other challenges as well. There are several thousand other containers above ground and in domes at Area G. While N3B has made progress in shipping transuranic waste off the hill and sending it to WIPP, there is still a long way to go before the risk is eliminated.

May's Cerro Pelado wildfire, the third largest wildfire in the vicinity of LANL in the last

22 years, was a stark reminder of the need to reduce the risk at Area G. We understand that N3B has taken actions to protect the Area G waste inventory from these events, and we are hoping to hear some of those actions today, though hazards will remain as long as transuranic waste remains on the hill.

And this is to say nothing of the waste that remains buried underground at Area G. While we understand most of the works related to uncovering, remediating, and shipping that waste is still in the future, we would like to hear more about the Department of Energy's plan and schedules for these activities as well.

Adding to all of those technical issues are the ever present challenges associated with maintaining human capital. Both Federal and contractor organizations will be doing more work, and more hazardous work than ever before while also needing to attract, train, and retain the talent necessary to plan, accomplish and oversee this work.

The challenge with this work was exemplified just last month, when N3B leadership implemented a stop work for all of its operations due to a series of significant issues related to worker safety and the formality of operations. As

of last week, we understand N3B has largely resumed, but continues to review a handful of operations at Area G.

To help facilitate our discussion today, our staff has prepared exhibits to be displayed on the screen for the benefit of the members of the public as well as on the video screen. These exhibits are marked Exhibits 1 through 37. All of these will be admitted into the hearing record and are available as handouts.

We've also posted a listing of acronyms and a glossary of key terms to help the public better understand our discussions this afternoon. These documents will all be on our website, dnfsb.gov, and are accessible via the posted QR code.

Before we introduce and hear from the panelists, I would like to hear from fellow board members for opening remarks. At this time I'd like to turn it over to my vice-chair, Mr. Summers.

MR. SUMMERS: Thanks, Ms. Connery. Good afternoon, everyone. My name is Tom Summers, and I am the vice-chair of the Defense Nuclear Facility Safety Board. I'm very excited to be here today, and I want to welcome and thank panelists and the

interested public for attending this hearing today.

As Ms. Connery noted, during this session, we will be covering activities performed at LANL's Area G. In my statement, I will be highlighting some of the good-news stories that I am seeing at Area G as well as the topics we, the board, have interest in but unfortunately do not have time to address today.

Regarding the good news, I am pleased to report that N3B has recently completed its 100th shipment of transuranic waste from Area G to the Waste Isolation Pilot Plant, commonly called WIPP. N3B is working with Triad to ship waste loads to WIPP that contain waste containers from across the entire laboratory in a single shipment, including those that are newly generated by the National Nuclear Security Administration. This approach improves efficiency and increases the quantity of waste in each load from Los Alamos. I believe that shipping waste from LANL to WIPP is one of the best ways of reducing the safety risk that is presented by the aboveground waste.

In September of 2020, the board issued Technical Report 46, which identified that LANL does not consistently or appropriately consider

potentially energetic chemical reactions involving transuranic waste. In response to this report, N3B and the local Environmental Management Field Office, which is known as EM-LA, acted promptly and appropriately to remedy the situation. Specifically, N3B personnel identified waste containers that may contain incompatible chemicals, improve the posture at Area G by implementing new controls for those waste containers, and improve the Area G safety basis.

I would also like to acknowledge N3B's plans for upgrading the legacy Area G safety basis to a document that complies with modern Department of Energy standards. This safety basis upgrade is scheduled to be completed in 2023 and will be one of the first that uses DOE's revised standard on transuranic waste, DOE Standard 5506-2021.

Finally, I would like to discuss the topics that the board has continued interest but unfortunately will not be able to cover today due to time.

Number one, dispositioning the remaining inappropriately remediated nitrate salt waste stored at the Waste Control Specialists in Texas, since DOE is still studying the problem.

Number two, venting of flanged tritium waste containers, also commonly referred to as FTWCs that are currently stored in a shed in Area G. Preparation for this work remains ongoing.

Number three, negotiations with the state of New Mexico on cleanup milestones. We know this is of interest to many in the audience, but we are not party to the proceedings.

And finally, number four, Waste Isolation Pilot Plant shipments in allotments for LANL transuranic waste since we do not have the proper folks present here today for DOE's Carlsbad field office.

Thank you, Ms. Connery for giving me the opportunity to speak. This concludes my statement.

CHAIRPERSON CONNERY: Thank you Mr. Summers. Mr. Roberson, do you have any opening remarks at this time you would like to share?

MS. ROBERSON: Thank you, Chair Connery, I'm going to forego an opening statement this session.

CHAIRPERSON CONNERY: Before I introduce our esteemed colleagues from the DOE and N3B, I would like to the -- actually, I am going to introduce them. Sorry. I am going to introduce our

esteemed colleagues from DOE. Joining us for our first session is Mr. Michael Mikolanis, the manager for the EM Los Alamos field office; Kim Lebak, president of N3B, Los Alamos; and Mr. Gerald O'Leary, program manager for N3B in Los Alamos.

The board has set aside a few moments for opening statements. I want to recognize Mr. Mikolanis for his opening statement before we proceed to questions.

MR. MIKOLANIS: Thank you. Good afternoon. I am Michael Mikolanis, the Department of Energy's Environmental Management Los Alamos, EM-LA field office manager. I appreciate the opportunity to provide opening remarks in today's public hearing for this session, Department of Energy -- Department of Energy's environmental management operations for LANL, transuranic waste management.

I want to thank the members of the safety board for conducting this hearing to engage in open and transparent discussions, and joining me today are two panel members from our cleanup contractor, N3B, Kim Lebak, who's the president and general manager, and Gerald, or Jerry, O'Leary, N3B's program manager for waste operations programs.

During my career at Savannah River and over the past year in my role as the new EM-LA field office manager, I've had the pleasure of meeting and engaging in dialogue with the defense board members and defense board resident inspectors, and I look forward to a continued strong relationship with the board.

The EM Los Alamos field office has been in existence for seven years. It's considered a young field office compared to other EM sites. EM-LA was established in 2015 to allow EM to focus on the cleanup mission and allow NNSA to focus on national security.

As with any transition, we work through challenges. We executed a successful bridge contract transition from Los Alamos National Security, or LANS, and our current contract, or current cleanup contractor N3B.

One of the major accomplishments was the completed treatment of remediated and unremediated nitrate salt waste containers at Technical Area 54, Area G in 2017. We are nearly five years into the N3B cleanup contract and carrying out our mission to safely store waste at Area G and to process the certified waste so that it can be disposed of at the

Waste Isolation Pilot Plant, or WIPP. EM-LA has made significant progress in reducing the amount of transuranic waste at TA-54 in Area G.

Since transitioning to N3B as our cleanup contractor in April of 2018, the team has been busy to reduce the risk profile at TA-54 at Area G.

As the chair mentioned we have completed more than 100 shipments to WIPP since the start of the N3B contract in May of 2018. The radiological inventory or material at risk has been reduced by around 29 percent. Approximately 9,000 plutonium equivalent curies, and the transuranic inventory has been reduced by approximately 1,500 containers. Like all of the EM sites, the COVID-19 pandemic impacted cleanup operations, and the pandemic impacted WIPP's ability to receive shipments. For a period of approximately four to six months, we operated in an essential mission critical activities compliance and safety posture.

We did not complete any shipments until we understood how the COVID-19 virus worked to ensure the safety of the workforce. Post-pandemic, we have achieved several accomplishments in our transuranic waste program. We have exceeded the EM transuranic waste shipment goals for the last two fiscal years

and increased our shipment goal for 2025.

In 2022 we started new processing capabilities in Dome 231 for glove bag and drill and drain to process more waste. In September we initiated a retrieval process for the 158 corrugated metal pipes, or CMPs, buried in Area G. The CMPs are originated at Technical Area 21 radioactive liquid waste treatment building, Building 21-257, and are now part of the below-ground waste in Area G on top of Pit 29 that we are prioritizing.

Next year N3B will start the process to size reduce CMPs and ship to WIPP or, if possible, to a low-level waste repository if they don't meet TRU criteria.

As the board is aware, your staff has been following the development of EM-LA. The development of EM-LA's new documented safety analysis that will replace the interim basis for operations that we've been using.

Building the DSA is a top priority for EM-LA and DOE based on an improved analysis which will lead to safety control suite focus on preventing and mitigating real hazards to workers, the public, and the environment.

I would like to add that EM-LA has

provided its notice of intent to exercise the first option period to extend N3B's contract.

Thank you again for inviting EM-LA and N3B to the defense board's hearing. I'm looking forward to today's discussion. Thank you.

CHAIRPERSON CONNERY: Thank you, Mr. Mikolanis. We're going to add his statement to the record. You'll be able to refer to that on the website, and we also welcome if the department wants to submit any more information or testimony to the record as well, we'll have it for you.

So I want to move over to our questions. We're here to ask questions and hear the answers. That's what we're going to do. I will take the chair's prerogative to ask the first question.

So as we discussed in the opening statements the 2014 WIPP event has had far reaching effects and was caused by an energetic reaction in a drum that was packaged at LANL. You can see the effects in Exhibit 1. Clearly, some actions needed to be taken so this doesn't actually happen again.

Splitting up the operations from NNSA management and operating contractor and standing up Los Alamos legacy cleanup contract was one of the department's corrective actions that came out of

this event.

To go over a little bit of the history. In late 2015, as Mr. Mikolanis mentioned, the EM field office was separated from LANL NNSA field office. As you can see from the 2014 letter from Secretary Moniz, this set the change in motion. The EM field office set up a bridge contract with LANS also mentioned in Mr. Mikolanis' opening remarks, and the contractor managing and operating the site at the time to manage Area G while EM field office began the selection process for the new contractor.

So, Mr. Mikolanis, as you noted, N3B has been operating Area G now for about four and a half years. Acknowledging that part of this period was impacted by the pandemic, as you noted, can you discuss the benefits and challenges of having taken the actions to separate out a field office and to the contract dedicated to cleanup efforts?

MR. MIKOLANIS: Thank you, Madam Chair, for the question. The benefit is exactly what the department sought by splitting up the two offices. There was an improved focus on the EM legacy waste cleanup mission by having a field office that directly reports up to and receives direct funding from EM. So there's a better focus on the legacy

waste cleanup mission.

I think I'd like to talk a little bit about the challenges. As I mentioned in my opening remarks, COVID impacted our ability to continue with the mission for a year to year and a half, but there are a number of challenges with setting up a field office and transitioning the contract from LANS to N3B that I think would be responsive to your question.

First, the standing up of the field office. A particular challenge and a lesson learned was the need to focus on the infrastructure. Christine Gelles, who was first tasked by the assistant secretary to come out and begin setting up a field office, and she worked until Doug Hinsey was appointed as the field office manager, and we transitioned over to N3B at the end of their contract.

We relied heavily on NNSA's existing infrastructure. Christine got a very small Federal staff that reported to her, and EM relied heavily on NNSA's subject matter experts and processes during that time of 2015, when the contract was ordered and transitioned, to 2018.

For example, a good example of that would

be the fact that EM-LA relied on NNSA to review and approve the documented safety analysis revisions and with the safety basis approval authority residing within the NNSA field office manager rather than the EM-LA field office manager that was transitioned over. That gives us an example of how the department was relying on the infrastructure of the landlord, NNSA, and a lesson learned from that is for an improved and more management focus on setting up the infrastructure, setting up the processes earlier in the setting up of the field office and transition. The contractor would have been able to put the field office in a better position. That's from a Federal perspective.

And we saw that in 2020 when the Chief of Nuclear Safety came out and did a -- a review of the delegated safety authorities for nuclear safety and found a number of issues.

With respect to the contractor and N3B's transition, there were several lessons learned as well. Doug Hinsey did a self-assessment, if you will, of some of the lessons learned and things that could have been done differently. And they boiled down to a couple of things. One is the improvement of the factual accuracy of the request proposal.

There was a number of things in the request for proposal that the bidders assumed to be provided by the government during the transition. For example, IT services, many of the safety management programs, training and qualifications.

And when N3B arrived and began to do the transition, they learned that the landlord wasn't able to provide those services. N3B had to develop their own IT system out of whole cloth. Many of the business systems as well as the technical, they didn't have an accounting system. They had to develop their own HR system. The training programs and the qualification program that N3B would have depended upon had to be built from -- had to be built from scratch.

N3B was able to bring over the procedures and programs and adjust them. Some of them had to be rewritten. Those critical differences were material differences in the contract that had to be addressed and took time and resources away from immediately getting in and continuing the legacy waste cleanup.

There was a significant challenge in terms of the workforce. When the RFP was put out, the intention was to transition essentially the

workforce that was doing the legacy waste cleanup under NNSA over to N3B to provide them that opportunity.

The key element, though, that disrupted it was the questions regarding the pension. At the time the contract was awarded and the transition occurred, the lab was operating off of a single payor pension program, and it took some unexpected work to transition the pension program to a multi-participant rather than a single payor. That work -- that question caused -- caused uncertainty in the workforce, that uncertainty disincentivized some of the more experienced and seasoned workers from doing the work for NNSA, that led them to the question would they be losing something if they would transfer over to N3B. And it led many of them to take jobs over at the lab other than transitioning.

My corporate partner started off the job with only a partial workforce, less than expected. They had to recruit additional workers, which means instead of having the seasoned, highly experienced workforce, experience was a little bit lower and required some additional seasoning, which changed the technical approach the contractor would have

used.

Instead of going for the more difficult waste, like immediately early on, like the technical approach of getting into Pit 9, the Department of Energy changed the technical approach and pulled forward the corrugated metal pipes after that and put in the drill and drain with glove bag to process some of the aboveground waste, but there are additional facilities that would have started earlier which had to be deferred to later. So those challenges have really, in addressing the material differences, didn't -- the government -- EM didn't set up our corporate partners to be able to hit the ground running as expected. Those are some of the lessons.

CHAIRPERSON CONNERY: Thank you. I actually really appreciate your honesty and thoroughness to that answer, because those were exactly the points that we were hoping to bring out so that the public could see the difficulty of that transition. It's not easy being on the landlord side, as EM is in this situation, and certainly N3B was faced with a lot of challenges when you started.

So the fact that you're a tenant/landlord situation with NNSA, I wanted to just have you

comment shortly about your office's interface with NNSA side of the house and any challenges facing the two organizations. Obviously NNSA focuses on production, and that leads to more waste generation. How is that balanced with the legacy waste handling and disposal? I know you have a long relationship with Ted Wyka over at NNSA, so that probably helps from a personal capacity, as we spoke yesterday, but if you could make a few remarks. Thanks.

MR. MIKOLANIS: Thank you, Madam Chair, for the question. When the field -- I was not here when the field office was split off in 2015. As within separation of any entity into two smaller ones, there's always going to be some hurt feelings. There's always going to be some issues to work your way through. And that was the case with the splitting out of EM-LA.

I believe that many of those have been addressed. In order to strengthen that, as you mentioned I have a relationship with Ted Wyka. I would like to share that with members of the public that are here.

When I joined the Department of Energy in 1995, I went to work for the departmental representative for the Defense Nuclear Facilities

Safety Board. Ted Wyka was already at that office. So I began my career in DOE and worked for most of the first seven years with Ted Wyka as a coworker. So we built a good professional and personal working relationship. As we went our own ways after leaving Mark Whitaker's office, we kept that friendship and professional working relationship over the years.

Now, as I found myself applying for this position in the twilight of my career, and I was extremely pleased to see that Ted Wyka was being selected as manager for the NNSA field office. And that enabled me to start in this position with a level of trust and communication and ability to have difficult discussions that it could take years to develop with someone who I didn't have that personal relationship.

So given that level of trust, and we're able to model the partnering that is expected between NNSA and EM-LA and push those expectations down within our organizations as well as with our contractors who get the work done. And we've set that expectation, and we've seen some results and improvements over the year I've been here. I expect to see -- I'm excited to continue to take on that challenge as Ted and I continue working together.

CHAIRPERSON CONNERY: Thank you. I'm going to turn the microphone over to Mr. Summers, the next question.

MR. SUMMERS: Thank you, Chair Connery. This question will be for Ms. Lebak. This spring Los Alamos was threatened by the Cerro Pelado wildfire. Our staff observed, and we applaud, the improvements in how the laboratory as well as the county prepared for this fire, including creating fire breaks to limit fire spread as shown in Exhibit 2.

Ms. Lebak, given that this was the third large fire in 22 years, has this changed your outlook on necessary safety control strategies for wildfires? For example, if you identify additional specific wildfire preparation improvements that you would like to see to protect Area G.

MS. LEBAK: Good afternoon, and thank you. I'd like to start with a follow-on from our last discussion, and Madam Chair asked Michael Mikolanis about his relationship with NNSA. I'll provide a brief commentary on our relationship with Triad since we were in a tenant-type situation on the laboratory site.

I think the communications are really

strong with Triad from contractor to contractor, and we meet with the lab leadership monthly, and we have a very open dialogue with at least two of their senior leaders. We work issues, we can pick up the phone and call each other as needed, and we are performing most of our work on the laboratory, and there is daily interface at various levels of N3B with counterparts at Triad.

I would say -- I would echo Michael's comments about transition being a little rough, but since Triad has been over there for several years, and N3B has been stood up, I think we are communicating very effectively. We also have a contractual arrangement where we can provide services to each other. We can get services from them, and we can provide services as well.

So all of those communications and services have really, you know, worked -- we've kind of worked through the bugs.

To get to your explicit question on the fire, in May, you know, we found ourselves -- actually late April into early May we found ourselves in another fire situation. Fire is something we are always concerned about at Los Alamos because of the two fires you mentioned.

And we get emergency preparedness services from Triad, but we work together as a unit.

You will see that Triad and Los Alamos County and N3B and the other entities in the vicinity of Los Alamos are all trying to work together, because it's a unit up there. The schools are part of that as well, and so it behooves us to function as a unit, and Triad does an excellent job of taking command and control as the laboratory and then getting the comms out and getting the people talking and interfacing together.

So the fire, we all just kind of fell into our positions, and we were able to work through that. Fortunately the fire didn't encroach upon the laboratory boundary.

But to your point, it's a stark reminder of what can happen, and in this particular case, it was on the other side of the laboratory, so it wasn't immediately adjacent to Area G, but still, one of our primary objectives is -- is doing vegetation control around Area G, and there's certainly zones where Triad takes the lead for certain vegetation control, and then N3B has -- we have our spaces, but we are very diligent about our vegetation control, because that would obviously

fuel a fire.

Also in some of our other areas where we work on the laboratory for environmental remediation activities, vegetation control is of paramount importance.

If you don't mind, sir, I can ask Jerry to comment on some of the transuranic waste-specific activities.

MR. O'LEARY: Thank you, Kim. Yes, so at Area G we remain in a ready state for wildfire mitigation. Our safety basis documents require us on a monthly basis during the growing season to do inspections of our defensible spaces, and those defensible spaces are maintaining vegetation control around fire hydrants or where firemen have to hook up their hoses. This defensible space also includes our storage locations as well. We do that on a monthly basis or even more frequently. The minimum is monthly.

Then we have a minimum of vegetation control and vegetation cutback on a monthly basis as well. But during growing season, that's more frequent than on a monthly basis. Not only on defensible spaces, but we also do it around the perimeter of the Area G fence line, so that

vegetation is also controlled.

Other things we are starting to implement now is -- in the winter season is to start to look at getting ahead of doing vegetation and cutbacks during the winter season as we can. That way we get ahead of the springtime wildfire events that occur.

So we are always proactive for what we're doing in Area G for vegetation mitigation.

MR. SUMMERS: Thank you, Ms. Lebak and Mr. O'Leary.

Chair Connery, back to you.

CHAIRPERSON CONNERY: I think Ms. Roberson had the next question.

MS. ROBERSON: We have Exhibit 3, and Exhibit 3 shows locations at LANL where the waste containers are loaded for shipment to WIPP. On the left side is a picture of the ramp shipping facility, and the right side is the mobile unit in Area G.

As we understand it, the number of containers in a shipment to WIPP depends on many factors. For example, just considering container size, the transport truck can accommodate roughly 40 drums or just six standard waste boxes.

To Ms. Lebak, how many containers are

actually ready for shipment to WIPP, and when do you expect to ship those containers?

MS. LEBAK: Thank you for that. As was noted in the earlier introductory comments, we have made our -- a major milestone in our transuranic waste shipping, and we have shipped 100 shipments, actually more since our press release on that, but I think we've done very well.

Michael Mikolanis noted that during the beginning of our contract there were -- we did have a slightly slower pace when we were wrangling COVID, which we're still wrangling, obviously, with the masks. But we did have fewer shipments at that time. Right now we have approximately 2,200 containers aboveground at Area G, and of those ready for shipment, I will confer briefly with Jerry.

MR. O'LEARY: I can continue on that. Of the 2,200 containers, we have 250 that are in the queue. They're either in the certification process or have been certified for shipment. Of that 450, we have about 170 that are certified currently for shipment, and the balance are going through the certification process.

So that's where we stand right now, and that's about ten shipments worth of containers based

on, you know -- five to ten shipments based on how we load-manage those TRUPACTs.

MS. ROBERSON: Any idea when we might see those five shipments go?

MR. O'LEARY: We have it on the books now. I think we actually had some shipments go out. We're routinely shipping every week.

MS. LEBAK: We do talk with Michael Mikolanis each year and establish goals for shipping, and we do that every year, and we, right now, discussed 40 shipments per year for our goal setting.

MS. ROBERSON: Thank you, ma'am. So you still have quite a few drums up there that you have to deal with. Are there some things that N3B can do to help accelerate preparing those drums for shipment?

MR. O'LEARY: I'll take that question. Yeah, so, of the 2,200 drums we do have there, all are in safe compliant storage right now. Like I said, we have 450 in the queue.

We're also bringing on additional characterization capabilities, such as a realtime radiography unit. I'm sure you're familiar with that. Just like when you go to the airport, you put

your bag through the x-ray, tells you what's in it. And so we're bringing on an additional unit for that. We're also refurbishing some of our equipment. We experienced some downtime with some of our characterization equipment, such as the high energy real-time radiography unit that we currently have. So we're refurbishing that to increase the uptime throughput.

And we're also going to refurbish one of our nondestructive assay units as well. These are old pieces of equipment, so the downtime -- we're going to minimize downtime on those units. So that'll increase the availability of feedstock for shipments.

We've also, as Michael alluded to, established additional remediation lines within Area G. We're in there processing right now. We have what we call a drill-and-drain operation, and we also have what we call a glove-bag operation, and those are ongoing right now. And as those containers come out of the remediation, they'll be available to go into the certification process. We didn't have those in the past. We stood those up over the last year.

Additionally, we have some corrugated

metal pipes that we're retrieving. Now, those don't require remediation, but they do require size reduction. So we're in the process of retrieving those now and then we're in the readiness phase of the size reduction process. We look to bring that process up in the third quarter of this fiscal year, and once that process starts, and we start to shear those CMPs, that'll provide additional feed for the characterizations and subsequent shipping.

MS. ROBERSON: Thank you, sir. So, Mr. Mikolanis, as you probably know when we travel to the sites we take the opportunity to meet and hear from local community groups and members of the public, and I'd like to give you an opportunity to address one of the concerns that we heard.

As Mr. Summers stated in his opening statement, N3B and Triad are working together to maximize waste loads and shipments to WIPP. So two points if you could address, one, you know, assuring that that does not diminish the commitment and priority to removing waste in G area; and two, where can the public find information about these shipments as they occur so they can understand that that is still moving waste from the mesa?

MR. MIKOLANIS: Thank you, Ms. Roberson

for the question. I would like just to clarify for members of the public that may be observing, we're sharing some drums in approximate numbers. I know the board is very much aware of this. For the benefit of the members of the public we're addressing, the numbers we're using are approximate numbers. The numbers in characterization, ready to go, vary from day to day as we ship some, process some, move through, gets them through the certification process. So we're using approximate numbers today just because what was correct a week ago will be different this week as we continue to make progress.

Regarding your question of the -- I think you're speaking to the commingling of shipments. And rather than just appear, when WIPP sends the shipment truck up to a ramp to load the EM legacy waste, sometimes we don't fill the three TRUPACTs completely with environmental management legacy waste. There's a very good reason. If you indulge me, I'll explain that.

I'm going to use laymen's terms for the benefit of the public that might be listening. There are limits that we have to abide by in order for the shipping of the containers or to what can

actually go to WIPP itself on the truck.

Couple of examples that come to mind. As a weight limit you can't overload the TRUPACT container. It's only certified to a certain level of weight or MAR or plutonium equivalents that you can put into a shipment. When we run up that limit, if we don't completely fill up all TRUPACTs, we have to load empty drums called dunnage to fill up the rest of the TRUPACTs, because you don't want to let the soft chewy center of the Tootsie Roll roll around inside the TRUPACT.

So rather than sending an empty dunnage of drums, the department of EM will back off that limit a little bit and allow the remaining to be picked up by some newly generated waste that would completely fill the truck, completely fill the TRUPACT up.

An example I use -- this question comes up many times in other forums. It comes up just recently in the presentation I made to the New Mexico legislature. If you're trying to load a cord of wood up into your pickup truck, you're going to have a weight limit of what you can put in the bed. Let's just say it's 1,000 pounds, and you've got ten cubic feet of space in the truck. If you get that 1,000 pound limit when you're only at seven instead

of ten cubic feet, you don't want to drive home with part of your truck empty. You're going to take a little bit out and put some of the lighter wood in so you can fill up the entire truck.

So that's kind of what we're trying to do with the commingled shipments. EM will fill up a little bit and back off a little bit and let on some of the newly generated waste. So I'm not sending dunnage and empty trucks and sending air to WIPP and putting air down into the mine. And that's kind of how we do that. With regards to how the public -- where the public can go find the data and what's in -- I don't track that data. Actually, that's -- the metrics that we set for our corporate partners to meet the goals of the shipments. In this case we went from -- this year we're going from 30 to 40, and we set processing goals for how much transuranic waste and mixed load level waste we send to process and shipment to dispose of.

I have not established any parameters or metrics, rather, I should say, for tracking the amount of newly generated waste versus EM waste that goes in the truck, and so there isn't really a place the public can go to to get that information. The field office isn't focusing heavily on that either.

I hope I answered your question.

MS. ROBERSON: You did. The answer to the question they mainly had was will they learn about the shipments, and you don't track that. But is there someone else who does?

MR. MIKOLANIS: So nobody at EM-LA tracks that, to my knowledge. WIPP doesn't track that either. The data is obviously available. We have -- we know everything about everything that goes into a particular shipment or down the shaft into the -- into the mine, but we don't track that or collate that or put that anywhere for my own use, let alone the public's, at this point in time.

MS. ROBERSON: Thank you, sir.

CHAIRPERSON CONNERY: Thank you. I just want to point out, I know that recently in New Mexico, in the Santa Fe area, WIPP came up and gave presentations to the public. And I know, Mr. Mikolanis, you made it kind of a mission to be more open with the public than perhaps your predecessors were, so just based on Ms. Roberson's questions and what we heard from the public last night, it would be very welcomed if you had more of a dialogue with the interest groups that are specifically interested in this area.

So I want to change the line of questioning, and I do recognize -- I want to pull from some of what you said earlier and kind of move on to the waste handling situations at Area G.

You mentioned the fact that the difficulties, that Triad had -- or, sorry, that N3B had when they first stood up and the fact that there was a -- I don't know if you want to call it a deep dive -- we'll call it a deep dive from the chief of nuclear safety into some of the challenges that you were facing and that you actually switched up how you were going to do the work and worked on the low-hanging fruit versus to some of the specific challenges.

And we just talked about the number of aboveground waste containers that need remediation, and we recognized that, as you spoke about earlier, we've had some additional approved operations to remediate these containers, and I think we've got those up on the screen right now in Exhibit 4.

So on the left, we have that glove bag operations that you spoke of which is used to contain radioactive contamination while workers sort through drum contents to remove prohibited items. That's what you have to do before you can ship to

WIPP.

On the right you see workers perform what you heard our colleagues mention, the drill and drain operations to empty free liquids. Those are positive developments, but more capabilities will obviously be required to process the containers that require remediation.

So to my first question, and I guess it's to -- to Mr. O'Leary, is given the challenges that you've had to stop works, the difficulties with the -- with conduct of operations, can you just describe how this work is going and how the public can have confidence in it to start with?

MR. O'LEARY: Yes. Thank you. I think I'm on, right? Okay. All right. So this work is going very well. We've experienced a longer time to remediate the drill and drain work drums than we had anticipated. There's more liquid in those than we had real-time radiography would have shown, but this whole process that we've had here, the drill and drain and glove bag went through our safety basis analysts.

We went through a rigorous readiness process both from a management self-assessment, contractor-readiness assessment, and

Federal-readiness assessment for those activities. And we go through those to make sure we have all the controls in place to operate safely. So now that we're getting some operational history, we've also made some additional changes to these processes to make sure that we stay within our safety envelope. So we'll continue on with these operations as well.

We haven't started the glove bag operations of yet, so as soon as we're done with the drill and drain, we'll go into the glove bag operations. Before we do that, we'll do another mock-up to make sure we're ready to perform those operations.

MR. MIKOLANIS: If I may, Madam Chair, your question is focused on how can the public have confidence that the processes work. The glove bag operation, that's a -- I want to elaborate on that a little bit. That gets to the heart of why the public can have confidence in the process and the rigor we're applying.

My corporate partners at DOE did all those things, got the safety analysis and safety basis for it, did the readiness. We were working up to it. But as we were approaching the point of starting up the operations, I give credit to resident

inspectors. They shared some information and some questions they had.

When the Department of Energy and the N3B looked at the questions of concern, it dealt with the ambiguity of the procedures. Sometimes the Department of Energy relies on skill and the craft. You hear that many times in doing the work, and rather than shutting everything off, they'll stop it if we have to change a happy to glad.

The resident inspectors raise some questions on the level of ambiguity, and the DOE and N3B took another look at that and decided we need to do something about that ambiguity. We delayed the startup of the drill and drain for about a month and glove bag operations even longer.

Again, the process works. We have rigorous processes, and when information comes up, even if it's right at the eleventh hour of getting ready to start up we will pause, look at it, and deliberately decide how we're going to move forward. In this case, we delayed the actions in order to clarify some things so we didn't have a problem six months after starting up.

CHAIRPERSON CONNERY: I appreciate that. We understand stopping work when you have a

challenge is important.

I want to point out to the public, the resident inspectors are actually DNFSB employees, who we actually have assigned to the laboratory. They're not Federal oversight employees or N3B employees. So they are our employees. We are a small organization. We have two resident inspectors at this point.

So we're glad that you were able to get that information from them. It's a little bit concerning that it took the resident inspectors raising the issues to get you to that point.

Ms. Lebak?

MS. LEBAK: Yes. Madam Chair, I might add we did initiate a stop work in the October timeframe. We were seeing some issues in our field operations. One example is a heat stress illness that was realized when we were commencing our corrugated metal pipe operations, and we had some other examples of safety issues which were hand related, head bumps, and other activities, and then a couple of examples in our environmental remediation activities.

So as a company, we said, let's take a stop here, go back, and relook at our processes and

procedures and release these field activities on a case-by-case basis once we -- we go in and basically approach it like an integrated project team approach and relook at those activities.

So I -- I feel like that is the only thing to do in that situation. We're looking at our data, we're looking at our metrics, and we weren't satisfied with what we were seeing, so we called a stop work, and we have -- we have released our field activities. We do have some follow-up actions that we'll be working probably for the next six or eight weeks as we proceed, but we have to exhibit that stop -- you know, a trite expression is go slow to go fast. When we look at our data, and it's not to our liking, we will stop and then reapproach.

CHAIRPERSON CONNERY: I appreciate that. The last question on this line -- so we talked about the glove bag operations, which haven't started yet, and the drill and drain. Clearly there can be containers this will not be sufficient for remediation, and also you're going to have to look at new capabilities and potentially new facilities to remediate some more difficult waste.

So I was wondering, again this is to Mr. O'Leary, what is the current plan for that, and

what do you project you'll need to do in the future to address some of the more challenging aboveground containers to be certified?

MR. O'LEARY: Thank you. Once again, these numbers are approximate. I forgot to mention that. Of the 2,200 containers, we have about 1,550 that require remediation, and about 450 of those we can do on our current processes we have, and the remaining 1,100 will require additional capabilities that we currently don't have.

We are currently in the planning process to do those in our option period of this work. That includes the glovebox, and the compaction capabilities. Of that 1,100 containers, more than half of them just require compaction. So we're already in the planning process to put that together now. We haven't identified all that we need to do, but we're in that process.

CHAIRPERSON CONNERY: Just a follow-up. Are you talking to Idaho, their facilities out there that have similar challenges?

MR. O'LEARY: Yes, we do. We're also talking to the Oak Ridge folks. We're sending people out there in December to look at the glovebox that they have out there at the TWPC, the TRU Waste

Processing Facility there.

CHAIRPERSON CONNERY: Thank you for acronym policing. I'm going to turn the questioning over to Mr. Summers.

MR. SUMMERS: Thank you, Chair Connery. I have two questions that I'll direct to Mr. O'Leary.

The first, Mr. O'Leary, as I know in my opening statement, the board's Technical Report Number 46 identified that LANL's currently Area G safety bases does not appropriately consider potential energetic chemical reaction involving transuranic waste.

In response to technical Report Number 46 EM-LA, N3B took action to ensure that Area G was in a safe condition. As a part of this effort, N3B identified roughly 30 containers in their aboveground waste inventory that may contain incompatible chemicals.

The first question, Mr. O'Leary, is Exhibit 5 shows some of these containers. Would you discuss the actions that N3B took in response to Technical Report Number 46?

MR. O'LEARY: Yes. Thank you. We provided barriers around some of the TECH-46 containers. These are physical barriers to protect

them. We also double-packed these containers as well. We put prohibitions on how we would move them.

When we move these containers, we have a designated route that we move them through. We also, when we double-pack them, they're fitted with a lid-restraining device that stays on. When we move them again, once again we move them on a metal pallet. They're strapped to those metal pallets. There's an independent verification that those containers are strapped to that pallet. We also only move them with propane fork trucks. We do not allow them to be moved with diesel or gasoline fueled. We have a designated route, once again, when we move them.

We have spotters that have a stand-off distance, and we limit any other activities that are occurring in the areas that they're stored or when we're moving the containers. Once they're at the final place we're going to store them at, they're on our single planar array.

So those are the actions that we've currently taken to move these. And once again, when we do them, that's done on a critical lift plan right now so we know everything that we're doing

when we move those containers.

MR. SUMMERS: Thank you, Mr. O'Leary. The second question is what is the plan to remediate these transuranic waste containers and to prepare them for eventual shipment to WIPP?

MR. O'LEARY: I'll start this question, and Mike will probably weigh in on this.

Our plan right now is we plan on using the shielded glovebox that we're currently in the planning process. So that's in our option period. We're going to identify the risks and hazards. But right now we have to develop the design basis for that glovebox.

Like I previously stated, we're sending folks out to Oak Ridge to look at their glovebox, so we could perhaps use their design and bring that to N3B and to Area G.

MR. MIKOLANIS: I don't have anything else to add to that. I think you got it, Jerry. It's in your proposal for the option period, which the Department of Energy is currently evaluating, and we'll be in negotiations with them after we've had a chance to fully understand the proposal and different things that it's proposing to do under the option.

MR. SUMMERS: Thank you for your answer.

Chair Connery.

CHAIRPERSON CONNERY: Thank you, sir.

Ms. Roberson, the next is over to you.

MS. ROBERSON: Thank you, Chair Connery. Splitting off the emission, as Mr. Mikolanis referenced in his opening, to that new field office and contractor resulted in an overall increase in the workforce at LANL that is devoted to the cleanup emission. This occurs during a period when Triad National Security is pursuing record hiring.

Exhibit 6 shows some nuclear operations occurring in Area G. We all know these operations require a qualified contractor and Federal workforce to execute safely and provide oversight.

Ms. Lebak, would you briefly discuss N3B's hiring situation and any actions you are taking to hire and retain during the same time period that Triad's is also pursuing record hiring activities from a limited resource pool.

MS. LEBAK: I'm going to tell you that recruit and retain and safety are two of the top items on our N3B risk register, and Triad is in a -- in an enhanced hiring posture, but so is the rest of the country.

I mean, I will tell you from my discussions with the other contractors at the various DOE sites, it's a hot job market out there, and we continue to lose folks to places all across the country. It's not just DOE work. It's also oil and gas and other industries. So it is a very hot job market, and we've really had to amp up our recruiting, and basically we are conducting job fairs very frequently.

Those are being conducted right now in the local area. We've had job fairs at Northern New Mexico College in Espanola and also Cities of Gold, and we have open dialogue with the pueblos and trying to make sure they're aware of our hiring opportunities at N3B.

Our company is approximately 650 people, and that includes our critical subcontractors, but we also can get parent company reach-back through Huntington Ingalls Industries and BWX Technologies, and so we're employing this multifaceted approach to recruiting, and we are working it very hard.

We probably have 40 open requisitions right now, but that's -- I mean, our attrition is nearing 25 percent for the calendar year, and it will require very aggressive attacking throughout

the rest of the year, and getting them on board is the first step. Then we have to, you know, make sure the people are trained. We typically give them a hearty training register to get them through all of their courses, and then depending on what their background is, they have additional OJT, what have you.

We've also worked with the local colleges, Northern New Mexico College and University of New Mexico Los Alamos, on a nuclear apprentice program and rad control technician-type boot camps, where we can bring in junior employees and get them -- kind of grow our own. And many of the contractors across the complex are employing similar techniques with the local universities in their area, so we've been able to get many people through the boot camps.

We also have support service-type contractors that we have access to. We've set up arrangements through our contracting mechanisms to work with our support service contractors, and we -- we are -- we're trying to cover all the bases there, and it will continue to be a challenge for the foreseeable future.

And for the option period we will continue to work with our DOE client and talk about maybe

things that we can -- we can obtain like maybe, you know, look at our pay banding and other things that we can work together to help us be more competitive.

So we are experiencing, I would say, a fairly high attrition, and I'm sure DOE and Federal employees have their own trials and tribulations as well, but we are definitely attacking it with reckless abandon and will continue to do so and get the people in the training and try to get the junior people paired up with more experienced personnel as they transition into their work and what have you.

So briefly, those are some of the things that we are currently executing.

MS. ROBERSON: Thank you, ma'am. I see it's high on your list.

Mr. Mikolanis, I'm going to assume you have some similar challenges, but we do understand you've been more successful at attracting and training personnel as technical assistance contractors to perform duties similar to facility representatives rather than attracting folks to actually fill the Federal positions. Would you discuss your thoughts on the root of that situation, and tell us how that is progressing.

MR. MIKOLANIS: Thank you, Ms. Roberson

for the question. I do have some challenges. As I mentioned, Christine Ellis started the office with just a handful of people. Our currently approved staffing plan includes 41 Federal positions. I currently have 30 of those filled, and I am actively recruiting to fill the remaining 11.

In the meantime, the field office -- we are a small field office. We rely heavily on corporate reach-back. I depend upon Brenda Hawks and her staff and reach out to some of my fellow coworkers that used to be in Savannah River and other offices for resources.

I have a significant level of support from my technical support contractor. That's about 31 employees in total that augment both my business functions as well as my technical oversight functions. While some of the technical support does do operations oversight, I do not hire them rather than focusing on the recruiting of Federal facility reps or equivalently nuclear safety specialists. Those two resources that are particularly hard to find, because you can't go to a college and just hire a graduate who's been trained on nuclear safety or one that has operations oversight.

But we are looking at some innovative

things. I've asked my office of business operations director to figure out how do I go to shipyards, how do I go to some of the large Naval bases and find the senior chief petty officers and outgoing Naval officers who may not be interested in serving a full career in the Navy but have an incredible wealth of operations experience that depending on their background of nuclear safety if they have a college degree and done that kind of work related to the concepts or operations oversight, the chief petty officer senior or warrant officer would be perfect.

I'm working on trying to fill the positions. They're difficult to find and reluctant. A lot of people like to live in sunny South Carolina, Tennessee, which actually has four seasons. We are working very hard to try to fill the vacant positions. I make sure I've got adequate corporate reach-back and support from my technical support group.

MS. ROBERSON: So while you're working on both arms, trying to fill with Federal employees, do you foresee the need to increase the number of technical contractors you're utilizing?

MR. MIKOLANIS: Thank you for the question. I did increase it a little bit when I

first came to the field office. I don't remember how many I had. I've selectively, as the pace of operations changes if I need additional resources, I've gone out and sought those. I have the budget to do that. I'm not at the ceiling of the support contract. I can get additional resources if the situation warrants it.

MS. ROBERSON: Is that working well for you right now while you try to hire a team and retain?

MR. MIKOLANIS: Yes, ma'am, it is. I certainly like to hire and fill out my Federal positions. That's much more preferable. When I fully -- when I do reach full -- fully fill all my vacant positions, I'll be looking again at my tech support to see what kind of adjustments I need from there. Right now they're filling in that gap. I would expect the level of support and how I would be using it to be changed once I reach that fully staffed position.

MS. ROBERSON: Thank you, sir.

CHAIRPERSON CONNERY: Not going to make a comment about that four seasons remark you just made. I don't know if you've made a lot of friends in Santa Fe for saying that.

So we talked earlier about the fact of conducting a review of EM-LA in 2020 that identified concerns with the field office's ability to perform the nuclear safety regulatory functions. Some of these concerns had rather fundamental problems paraphrased here in Exhibit 7. There weren't adequate processes or procedures in place to facilitate nuclear facility safety oversight, nor were there adequate ownership of documentation of field office products.

We talked a little bit earlier about safety bases and obviously new operations that have FRAs and other reviews by the Feds. So I know that a lot of those challenges predated your tenure, but you're in charge now, so after implementing some of the corrective actions from that single assessment, what credible measures are you monitoring to ensure EM-LA is on the right the path to perform these functions again?

MR. MIKOLANIS: Thank you, Madam Chair, for that question. I actually had the dubious pleasure while I was acting deputy assistant secretary in 2021 of commissioning that chief of nuclear safety review, and one of my first actions reporting to Los Alamos in August and September, I

signed the corrective action plan to go address those issues. So I think Brenda Hawks and her team did an excellent job of digging in and identifying issues.

I mentioned earlier we -- one of the lessons learned in standing at the field office and transition is we need to focus on the infrastructure, and part of that infrastructure is establishing the policies and institutionalizing the procedures and policies for how we do our business, particularly the nuclear safety and technical functions that support the safe operations of the facilities.

So the chief of nuclear safety found, I think it was, ten findings -- excuse me, five findings and five management concerns that drove the corrective action plan of about 53 items. Most of those corrective actions have been done. The staff is starting to review the status of closure packages. A couple of them we've identified need additional work.

Once I've finished with the closure of all the actions, we will be doing a further follow-on review of those to ensure that the closure and action taken are effective in addressing the issues

and the causes.

We're -- in response to the -- to their assessment, we're establishing institutionalizing those procedures. I'm showing them we've got a formal process for trending and managing their records that we're adhering to the timelines for developing nuclear safety analysis, reviewing issues, processing, discovery, USQ PISAs, things like that.

And another important thing is ensuring it creates a sensitivity, partly why we're using so much tax support of ensuring that we have compensatory measures in place when staffing levels are not what they should be. Those are some of the lessons learned and some of the actions I'm taking.

I hope that answered your question. If not -- the four seasons was actually not to offend any residents of New Mexico. I was thinking of South Carolina where it's really -- it's either summer or kind of spring. There's not much of a winter. I might have a -- I might have a little explaining to do when I come off the stage tonight when someone comes at me.

CHAIRPERSON CONNERY: It's the land of enchantment. I'll just remind you of that. So I

didn't have any specific questions here. I think -- I mean, I think you touched on them. Some of it was the timeliness for doing safety basis approval of PISAs, which, for the audience, are potential --

MR. MIKOLANIS: Potential Inadequacy of the Safety Analysis. Yes, ma'am. Thank you for catching my acronym.

CHAIRPERSON CONNERY: Those are the types of questions I had. Sounds like you're reviewing those. Are you going to invite back or do you expect Ms. Hawks -- I know she's here now. But is she going to come back to do another review to see that you're making progress in those areas?

MR. MIKOLANIS: So Ms. Hawks and some of her staff were actually involved in the review of the closure package with me. So I asked them to be involved in the closure package as well.

Although as the field office manager, I have the capacity to close the gap in the corrective action plan and the actions that come from it. I know Ms. Hawks is going to be coming out and doing other reviews. The next review is focusing on other safety authorities. There are other delegated safety authorities from EM 3.1 and the orders give them a responsibility to go out and check and make

sure that the field has maintained the capabilities to execute those authorities responsibly.

CHAIRPERSON CONNERY: Thank you. I know that you understand we are keenly interested in the safety basis, and so I'm going to turn it over to Ms. Roberson to pursue that line of questioning.

MS. ROBERSON: Thank you, Chair Connery.

Yes, I think you know we are always very interested, especially safety basis, for Area G. Since January 2020 N3B has uncovered many issues with the Area G safety basis. One such issue was regarding the spatula-like tube that blocks drum vents during headspace gas sampling. And we can see a picture of this, too, on the drum on Exhibit 8.

This condition was not analyzed for a safety basis, so gas sampling operations were paused. Despite this being a relatively simple operation, challenges for getting the safety basis paperwork squared away properly was not resumed until August of 2021, almost two years later.

By contrast, Triad completed a safety basis change for the same issue in about two months. This is just one example of N3B and EM-LA having difficulties with the timeliness of the safety basis review and approval process.

On August 17, 2022, the board issued a letter to DOE encouraging it to expeditiously complete and implement a modern Area G safety basis. It appears that all stakeholders have recognized the new safety basis where Area G continues to be a top priority. This has been a long journey given that EM-LA determined a new safety basis was needed back in 2015.

So, Ms. Lebak, last we understood, it was N3B's goal to submit a new safety basis, submit the new safety basis documents in January of 2022. Is that still the case, and what is your confidence in heeding that?

MS. LEBAK: Yes, ma'am, that's still the case third quarter fiscal year '23, and I'm highly confident that we will meet that.

I would like to comment on some of the question parts there. We have been using an older safety basis document, and the Department of Energy requirements and regulations change over time, and we've had a lot of these requirements for essentially 30 years in some way, shape, or form. They vary whether they're in a DOE order requirement or if the department goes in for rulemaking, but we have always been -- as long as I've been affiliated

with the DOE complex, we've always been tasked with analyzing the hazards and looking at the activities and making sure we're within a proper safety envelope which the DOE approves.

So because our document is older doesn't mean the controls in that document are bad, but we do look forward to bringing our document into compliance with the new standards and looking at the control set that will be yielded after we go through the analysis.

We do have very -- we have many effective controls in place right now in Area G for our drums that are stored there and some of our upcoming activities like the corrugated metal pipe activities and what have you.

But I am glad we have reached agreement with the Department of Energy to get the modern document in place and get through all the analysis that it takes and get the really, really good control set in place so we can look forward to hopefully the next five years of operations at N3B.

Now, you referenced some difficulties that we had on headspace gas sampling, and what have you. We did encounter what we call potential inadequacies in the safety analysis of the older document, and we

had several inadequacies that we identified. It was a pretty large number, but again, we are dealing with an older document. So the process allows for those PISAs, as the board well know, and so we can -- we can address those issues one by one and put controls in place through a justification of continued operation, which we were able to do in several of those cases that you mentioned.

And so those controls were implemented, and we look forward to delivering that document to DOE in the third-quarter timeframe and continuing to work on our analysis and get continued safe storage and processing capabilities at Area G.

MR. MIKOLANIS: I'd just like to revise and extend my corporate partner's remarks in one aspect. You asked January, that second quarter, so again the transparency for the board and members of the public listening. January was the date at one point. That has slipped a little bit as of the third quarter. I anticipate being able to still hold the implementation date.

There were some questions and things we needed to spend time on. The air dispersion modeling, for example, there were some things that shifted the submittal date from the second quarter

to the third quarter. I have a high confidence in the third-quarter delivery. I have a high confidence in the department getting it and approving it, which is the first quarter 2024, which would be the second quarter FY24. I have a high confidence we're going to beat that or better.

MS. ROBERSON: Thank you. I appreciate you clarifying that. I was going to follow up as well too, and I appreciate you addressing, because that was going to be my next question. Has your office prepared to do its review so that implementation can be timely as well too? So I still want to know if you have the resources and support you need to complete the Federal review in a timely manner.

MR. MIKOLANIS: Thank you for the question. I do have the resources. I'll briefly identify them. We have a team consisting of N3B to and my staff to do the day-to-day oversight and the development of the safety analysis. We established an independent safety basis review team, led by Bob Nelson, who is the coauthor of the new 5506 standard. So he's highly knowledgeable of what's in the new standard, how it's changed, and that gives me more assurance that what we're developing will be

compliant not just with the 2014 version of the 3009 standard but also the updated expectations of the 5506.

The safety basis review team is engaged with the integrated project team on a routine basis, so they're aware and have a chance to provide feedback but also step away for the independence. I've relied on the safety basis review team an awful lot for corporate reach back to headquarters and other resources we have across the complex. I'm using the current staff so my team can focus on the development of DSA, focus and get timely feedback from the safety basis approval authority, and maintaining the safety basis and stay active in the safety basis team.

MS. ROBERSON: Thank you, sir. My last question goes to you, Mr. O'Leary, we've seen some beautiful safety bases develop and take a long time to implement. And so we're interested in -- you guys are developing it. Do you have a sense of what implementation will look like when you talk to -- generally speaking what implementation will take.

MR. O'LEARY: Thank you, Ms. Roberson. We, from an operational standpoint, and I'm going to speak from an operational standpoint, we have all

been involved in every step of the way of the new DSA development through the hazard analysis tables of the controls that are being put in place.

So we wanted to make sure that whatever we have we can actually implement, so we're looking -- we're very confident we can implement what we've seen so far in this new DSA development. Kim said that we were going to have that done in the third quarter. I believe we're going to have the implementation done in early '24, and we'll be able to step forward and go forward working under that new DSA.

But once again, we've been involved in every step of the way, because once again, from an operations standpoint, we've got to be able to operate to it. So I hope that answers your question.

MS. ROBERSON: Oh, it does. Look forward to it. We're excited. We love -- we think a holistic new DSA is so important. Thank you.

CHAIRPERSON CONNERY: Thanks, Ms. Roberson.

Next question goes to Mr. Summers.

MR. SUMMERS: Thanks, Chair Connery. Mr. O'Leary, the next three questions are directed

towards you, sir. There's still a great deal of underground waste at Area G. In Exhibit 9 on the left, you can see a photo highlighting locations that hold buried waste that promises to be a tricky retrieval operation. The right side of the exhibit shows some historical photos of work in trenches A through D on the top and in Pit 9 on the bottom.

As I understand, the new safety basis, when complete, will still not allow for belowground waste retrieval, but there will be a future mission needed to perform this belowground waste retrieval work.

So the first question, Mr. O'Leary, what would be the safety basis approach that you intend to pursue as you begin belowground waste retrieval activities?

MR. O'LEARY: We will have to -- thank you for the question. As you had stated, the current safety basis that we're developing now only addresses the operations we're doing above grade. So we will either have to revise the safety basis or do an addendum to that safety basis to address the below grade treatments.

The first retrieval we're going to do below grade is Pit 9. So that'll be in our option,

period, and we're in the planning process for that right now. So we're developing the technical approach. We're going to identify the hazards, and we'll go through the process so that we develop a safety basis that, once again, that we can operationally implement.

MR. SUMMERS: Thank you. The second question is what will be the safety approach to minimizing or better protecting aboveground material at risk once it is retrieved?

MR. O'LEARY: We'll do a systematic approach when we retrieve these containers from belowground. We're not going to bring them all up at one time unless we have the processing capability at the surface. So it's going to be a balancing act. We want to stay within our MAR limits at the surface, our material-at-risk limits at the surface. We don't want to bring things up if we're not ready to bring them up. So that's going to be our approach. We're going to optimize our facilities at the surface, and we're going to balance that against our retrieval operations.

MR. SUMMERS: Thank you. Finally the third question is, you have some previous experience at Idaho National Laboratory, which has faced

similar situations. To what extent is N3B able to work with its counterparts at INL in order to understand lessons learned from INL's operations?

MR. O'LEARY: I can address that. I was at Idaho for a short period of time. I also worked with the individual at other places that currently runs the operations for transuranic up there. So I can reach out to him to get lessons learned from their experience in the new ARP facility as well as what they're doing currently. We'll take advantage of that. We'll be talking to them all along as well.

MR. SUMMERS: Very good. Thank you, Mr. O'Leary.

Madam Chair.

CHAIRPERSON CONNERY: Unlike the safety basis, we're running ahead of schedule. Little levity.

I want to ask my fellow board members if they have any additional questions for the panel at this time. Ms. Roberson?

MS. ROBERSON: No, I don't have any. I appreciate the information. Thank you, Chair.

CHAIRPERSON CONNERY: Mr. Summers?

MR. SUMMERS: No, ma'am, I do not have any

further questions. Thank you.

CHAIRPERSON CONNERY: Here's what we're going to do. We're running ahead of time. We're going to take a 15-minute break. At a quarter to 2:00, we'll come back here. That will be public comment time. If any of you wish to speak, address the panel, obviously you're going to make remarks. We aren't going to engage in discussion with you. This is your chance to say what you'd like to say about what you just heard and any thoughts you have regarding the EM mission.

After we conclude the public comment period, then the board will provide closing remarks, then I encourage our friends from EM and from N3B to stick around for public comments.

But at this point in time, as I'm sure you need a break, I know I do, we'll take a 15-minute break and resume at 1:45. Thank you.

(Recess was taken from 1:32 to 1:49.)

CHAIRPERSON CONNERY: We're going to resume the session. It's now time for your public comment period. We've set aside about a half an hour this afternoon, but we'll have more time this evening following the NSA session.

So I'm going to hand things over to our

general counsel, Eric Fox, who will be handling the public comment period.

MR. FOX: Thank you. At this time the board would like to provide an opportunity for comments from members of the public. A list of those speakers who have contacted the board is posted at the entrance of this room. We have generally listed the speakers in the order in which they contacted us. I will call the speakers in this order and ask that the speakers state their name and their affiliation.

There's also table at the entrance to this room, and at the entrance to the room there's a sign-up sheet for members of the public who wish to make comments but did not have the opportunity to notify us ahead of time. We will follow those who have already registered in the order in which they have signed up.

To give everyone wishing to make a comment an equal opportunity, we ask that speakers limit their original comments to five minutes. I will provide a warning when you have one minute left and again at 30 seconds. The chair will give consideration for additional time if the schedule allows.

Remarks should be limited to comments, technical information, or data concerning the subject of today's hearing.

The first speaker we have is Scott Kovac from Nuclear Watch New Mexico.

MR. KOVAC: Thank you, Chair Connery and members of the board staff. My name is Scott Kovac. I'm with Nuclear Watch here in Santa Fe. I would just like to make a couple of quick comments.

The -- it was mentioned earlier today that there's about approximately 170 certified drums or containers for shipment to WIPP ready to go, with another 450 or so in the queue. So that's five or -- and last year we -- LANL shipped about 100 to WIPP.

So this is -- we're looking at five or six years' worth of shipments already lined up here, not counting the other 1,100 or so. I just wonder if there's some way we can, you know, get those shipments -- you know, we need to increase those -- the frequency of those shipments, because 100 a year, you know, is not enough to keep up with what's being -- with what's being certified to ship. Thank you.

Also, I want to thank you for focusing on

cleanup at Area G. But my question is how many similar drums are still buried under Area G? I'm not talking about the retrievable transuranic. I'm talking about waste that's planned to be left behind under a cap-and-cover scenario forever. We ask the board to look at the hundreds of thousands of cubic meters that are still buried at Area G.

There are estimates that -- estimates are of 46,000 cubic meters of TRU buried at Area G planned to be left behind. And as we all know, LANL is in a seismic zone between a rift valley and a dormant super volcano. This is not where we should be keeping transuranic waste with a half-life of 2,000 years.

As we know, WIPP is -- WIPP is 2,100 feet deep, approximately, and Area G is 65 feet deep. So, you know, how can Area G be the ending resting place for so much transuranic waste when we're working so hard to get the rest of the transuranic waste into WIPP, and we're going to leave this -- the vast quantities of it buried forever above our aquifer?

Speaking of our aquifer, the -- the -- you know, how can we be assured -- how can the public be assured that the seismic activity won't somehow

loosen up or dump or open up a crack or dump the contents of MDAG into the aquifer?

You know, we ask the -- we ask the safety board to please consider looking at some of our -- our cleanup issues. For instance, material disposal Area C is in front of the -- our hardworking environment department right now, and if the board could help -- could back us up or look at or just take a look at some of the performance assessments that are given on these areas that, you know, it's hard for the public to -- to do -- to look at itself -- by itself. It's very technical. And anyway, we -- we need your help looking at the other buried scenarios at Los Alamos.

Thank you very much.

MR. FOX: Thank you. If you have a written statement, would you please give it to Ms. Tara Tadlock. We'd like to submit it to the hearing record.

So next up we have Kathy Sanchez from the Sayain Circle of Grandmothers.

MS. SANCHEZ: I'll speak first. (Speaking in foreign language.)

So I have Kathy Wan Povi Sanchez from San Ildefonso Pueblo, adjacent to sharing the waters

from LANL, and I belong to Tewa United, and the Circle of Grandmothers are the wisdom keepers. We have been having dialogues with our youth over the past couple of months. And we have a project called P'in Haa. P'in Haa means the breath of our heart, the breath within us.

When we're talking about nuclear issues, we're also sharing the breath with all of the multiverse and all of the nations, so everybody is affected by nuclear business.

And I was born in 1950 at a time when the -- there was a time being the emphasis on being the first to have the nuclear bomb as a deterrent to ending war, which we know didn't happen, because we're still here now. At that time a lot of our community members were hired to work over there, and now we have third generations of them coming down, and we're losing a lot of our populations because of the deaths due to cancer or to illnesses or to having our children have leukemia. And there's a lot of health impacts, and we're still in trauma from the longing that when we were young hearing the detonations. We were hearing duck and cover issues at school. And still at it now. We're still at it now. Nothing has really moved the barometer or

meter towards safety, towards actually doing away with a very toxic business.

And so the children were also asking if there is a massive increase with their money that has come into there, and they're going to increase productions, and they're going to bring all these workers. They've been working on the issue of indigenous women missing and murdered. And what safety precautions have been given to these workers coming in of pre-business hiring, or once they're hired the paperwork that says they will abide by some standard of not engaging in sexual harassment, sexual business, and enticing our young people?

It's going to be massive movement hiring a lot of people coming in, and so safety also is on both sides.

And doing the work and being in the area with the nuclear industry, I have also been nationally involved and internationally involved with nuclear safety organizations, and we are -- should be considered partners, collaborators with the nuclear industry in promoting an ending to a toxic business. How do we transition in our goals and time on both sides that we are working together for the safety of our people?

If it's safety security, safety resources, we need to work together. We're not the enemy. We're friendly. We're coming from the heart for all people to be well, and that is the emphasis we should be having. But looking at the lab's mission 2030, it says all things nuclear they're going to really ramp up that because.

MR. FOX: One minute.

MS. SANCHEZ: -- they've been given candy, they've been given the money, and they're going to fight tooth and nail to save that.

The sharing should be different, not just economically giving our taxpayer money to the labs and then to give it to us. I think it should be a dual partnership in that they give our taxpayer money back to us so that we can --

MR. FOX: Time's up.

MS. SANCHEZ: I'd like to present the safety board with the blessings that you are doing great work and a great job and partnering with hearing the concerns that we have as citizens, so thank you so very much.

MR. FOX: Thank you for your statement. Next we have Anna Hansen from the Santa Fe County commission.

MS. HANSEN: Good afternoon. Thank you very much for the Defense Nuclear Facility Safety Board for being here. I personally consider you one of the most important boards in the United States. You are here to protect the public, which is paramount in many of my constituents' concerns.

Cleanup is a primary concern of ours at LANL, and safe transportation across the state of New Mexico is an incredibly important issue to my constituents and to me, of course.

So I -- I echo the comments that the more waste off the hill the better, and we want more waste sooner rather than later.

But I had a few questions on the presentation. First of all, next time you come, because my constituents care about this, is the venting of tritium. That is a big concern. I know it wasn't a topic for today. And also the consent decree is another big topic here, because we believe the 2016 consent decree does not really address cleanup to the issues we'd like, and then I know you are also not speaking about WIPP and DOE, but one of my questions in the presentation is what happens to the water that you drain. I was really curious. Like, you have this drill and drain. Well, where

does the water go?

I'm grateful for your inspectors. I also want to recognize that I do believe DOE did listen to me, EM, in March of 2020 right before the pandemic started when I requested a manager who I could work with, and I'm grateful to have Michael Mikolanis who, not that I will always agree with him, but that I have a working relationship with him.

And in order for things to get done, it is important for myself, as an elected official, and for the people in this community who care that they have someone who will actually return their phone calls and talk to them about the issues. So that is a step forward that we have not had in the past. So I want to recognize DOE for at least hopefully listening to me.

I have been coming to these meetings for at least, it seems, the last 15 or 20 years. We have missed you during the pandemic, and we are happy to have you back, so we hope that you will come back again soon, so that some of the other issues can be addressed, especially the tritium release. I'm not going to make any comments about NSA now. I will make it later.

One of the other things that is concerning to all of my constituents also, because some of them are workers at LANL and at N3B and DOE, is worker safety, and so the more that we can improve worker safety, that is a huge concern, and so I want to support more worker safety as much as possible because that is really important.

So I want to thank you once again for being here and thank you for your time.

MR. FOX: Thank you for your statement. Next we have Barney Magrath from nuclear safety advocates.

MR. MAGRATH: Thank you for coming. I understand this is a public hearing, so even though I might ask some questions, I don't expect answers. And the last time you guys were here in Albuquerque, I was able to talk, and we were able to ask questions, and so that's the first question. Why can't I ask questions? So I don't expect answers.

My name is Barney Magrath. I'm a member of a small nuclear safety group, Nuclear Safety Advocates Group, NSAG. Basically we are concerned citizens who care about the safety -- about our safety while we live next to a nuclear weapons factory.

Our group has had several meetings with the DNFSB that is before you, and I've had quite a challenge pronouncing that acronym for a long time, right, so I had to break it up into different words. First was DN, as in da nukes, and the second is FSB, as in funny silly bombs. So now I can say that ten times in a row, DNFSB, DNFSB, ten times.

You guys are the good guys. We are glad you are here, and we wish you could come here more often.

The way I learned about nuclear safety at LANL is I read the newspaper. Our group reads the newspaper. And when one of the members of our group notices an article in the New Mexican about nuclear safety, it alerts the rest of us, and we printed out the article. After this article is printed out and we study it, what we do is we go to the DNFSB website, and we look at safety reports. And once we find the safety report that is referenced in the newspaper article, then we get more complete picture of the incident.

So on November 7th, the New Mexican, for instance, published an article on the Area G safety incident. It was a heat-related incident. So then we can go to the safety report and read about that,

and it tells us, lo and behold, corrugated metal pipes, which are basically culverts, are being dug up and disassembled and put back in barrels again. This is a long process over the last, I don't know, 75 years, where these culverts were -- nuclear waste was put in them, filled with cement, buried. Now they're unburying them, cutting them apart, putting them in barrels, putting them -- burying them again. And so that's what I understand from the articles that we read.

The other thing in this same safety report was an issue related to the plutonium facility, and turns out this glove and bag operation with gloveboxes is they are -- I'm not sure what's going on, but sounds like they're reinventing the glovebox by designing a new door, taking off the old doors, bagging them up, and then getting rid of those.

On the very first day of the CMP, the corrugated metal pipe in this Area G, this plutonium facility, glovebox work is stopping. Work is stopping right away, and it doesn't seem like there's any progress being made. So that's how we get our information when we think of it.

Lastly, I would like to mention that according to Tara, no congressional representation

is signed up for public comments on either of the sessions, so that tells you that our congressional representation --

MR. FOX: 30 seconds.

MR. MAGRATH: -- is giving us the cold shoulder and not participating at all, and I just wanted to point that out. I could be wrong. In the session later today they could show up and -- but they haven't signed up. They're giving us the cold shoulder, and they always have, and that's why we need you guys. Thank you.

MR. FOX: Thank you for your statement. Next we have John E. Wilks III from Veterans for Peace.

MR. WILKES: Thank you. I'm John Edward Wilks III, vice president for Veterans for Peace, Albuquerque.

Now that I have five minutes, I'll use a minute for a preface. I have a statement I'm going to read. I have also filed with the board a longer statement which is more in depth and more useful to your work.

Veterans for Peace is 55 -- 35 years old. It's in every state of the union. We have 120 chapters, and there's six chapters overseas. The

Albuquerque chapter's primary focus is on waste, nuclear waste, the handling, transportation, storage, disposition. That's what I do for the chapter.

The Santa Fe chapter works on other nuclear issues, like presidential -- sole presidential use, authority, launch and warning, which aircraft are configured to use the weapons, modernization of the nuclear arsenal, those kinds of things. I only work on storage and waste of nuclear issues.

I want to reemphasize and repeat something that was said. The new field office, or EM at LANL, the manager, is an all-star. We're thrilled to have him. The presentation he gave yesterday to the legislature committee was effective, articulate, useful, and very welcomed, so I want to thank him for being here with us. He is on a very short honeymoon. His agency has no honeymoon. It has no credibility, and it has no merit as far as we're concerned.

The three people at that table, the panel, they are doing a job that they have inherited, very difficult. They're trying to innovate. They're trying to hire, train, deploy, and clean up a mess

that has gone on since 1943.

Now I will read my statement. My remarks solely address the imminent and severe threat to public health and safety of the environment posed by the very radioactive and mixed solid liquid waste of Area G and Technical Area 54.

We are urging the board to strongly recommend to the DOE secretary and the NNSA administrator to immediately exhume, characterize, and remove all subterranean waste and the associated contaminated soil and water in Area G, along with the migration pathways from Area G.

Further, we request that the board recommend against the current proposal by the agency to do cap and cover, which of course we call hide and hope, any waste from the Pajarito Plateau.

Commissioner Summers brought up a great question. He asked about the buried waste in Pit 9. We have got to reverse the priority. It's buried waste because it's a threat to the community. Then it's aboveground TRU waste. Then we go with the current generated waste, much less the pit waste that's in route from the weapons plant.

Since 1943, Federal agencies have entombed in unlined pits, dumps, shafts, and sumps

radioactive waste for all characters. Because Area G is located at a high elevation, the waste residue has migrated down the gradiant as well as escaped --

MR. FOX: One minute.

MR. MAGRATH: -- the air. The agricultural hills downhill to the east of the site, the regional drinking water, aquifer, public water supply wells, and the groundwater in the immediate vicinity are at imminent risk of contamination from the waste.

In 2002 a test well located 500 feet east of Area G showed contamination of the regional aquifer with low levels of tritium, stronium 90, and technetium-99.

MR. FOX: 30 seconds.

MR. MAGRATH: Area G encompasses 32 pits, 194 shafts, and four trenches at depths ranging from ten to 65 feet below the mesa top. The waste has little or no primary containment. Beneath the surface plumes of toxic gases, radioactive tritium cover most of the waste. Low-level transuranic mixed toxic nonradioactive material compromise the aggregate. In 1994, DOE estimated the waste at the Los Alamos contained 610 kilograms of plutonium, most of which is under Area G.

Thank you.

MR. FOX: Thank you for your statement.

Next we have Cindy Wheeler from 285 Alliance.

MS. WHEELER: Thank you for existing. So I'm Cindy Wheeler. I'm cochair of 285 Alliance, and I'm commenting and asking questions for many of the people that live in New Mexican communities and are worried.

I have a comment. You know, the images showing the clear spaces to protect LANL from being broached by fire, those spaces are actually very small if you understand how strong the spring winds are in New Mexico. Fire jumps whole canyons here in seconds, and this small removal of brush and trees, at least what's demonstrated in the image, seems inadequate, and I want you to be aware that during these fires the people of New Mexico are terrified that plutonium will be released and vaporized by wildfire and destroy their land forever.

The other thing is a question which I realize won't be answered now, but I hope you will think about it. I'd like to know what studies have been done and what the results are on whether TRU packs would contain an explosion from within the TRU

packet.

So, for instance, they are very sturdy little things as I understand them, but if that -- that drum had exploded before it got to WIPP and been placed in the underground? What would have happened if it had exploded inside the TRUPACT? How safe would that have been? Thank you.

MR. FOX: Thank you for your statement. Next we have Joni Arends from CCNS.

MS. ARENDS: Good afternoon members of the board. Thank you so much for being here. We are so grateful that you are here. And thank you to the DOE, the alphabet of people of LANL who were here this morning -- or this afternoon.

So I have five different comments, and I'll go through them quickly. We're behind. We're -- as a public, we're behind. The LANL SWEIS is behind schedule. So the 1979 SWEIS was the first SWEIS sitewide environmental impact statement. It's been -- it was 20 years before we got our second SWEIS, then the third SWEIS was done in 2008, nine years later. But now we've been waiting since 2018. We're almost five years behind schedule, and as you know these are ten-year review periods. Right now we're saying that the current SWEIS -- or the SWEIS

that they're working on right now will cover 15 years, but there's no justification for expanding that time.

At the same time, the hazardous waste permit renewals are behind schedule as well for WIPP and for LANL. They both expired in 2020. They're already almost three years behind schedule. And so we need your help as a board, an oversight board, to -- to have more information, to have more conversations to be able to have more public hearings like this to talk about the concerns of the people.

And I -- I do want to address the fact that we really need transparency on these newly generated shipments as well as the legacy shipment, because it doesn't make sense that the information isn't readily available to the public under the hazardous waste permit. There's a waste -- the WIS, the waste something. Ms. Roberson may know what it is. And we should be able to have access to that. It has the volumes, it has the sources, and it should be readily available, and it needs to be readily available as soon as possible because of ongoing concerns about NNSA taking over shipments to WIPP as opposed to getting the legacy waste exhumed

and moved from Area G.

I also have a question. I appreciate the comments by Mr. O'Leary that I wanted to know about the maintenance of the tents, because sometimes we see at Area G that -- we see ripped tents, and the manufacturers of those tents have regular schedules for maintenance. And when we asked about that in 2010 when the hazardous waste permit was up for renewal, there was -- nobody had any good answers for when the maintenance was done on the tents to protect them with the fire retardant on the outside and also for wind and sun damage.

So then I really have a question about the transition plan. When the treaty for the prohibition of nuclear weapons went into effect almost two years ago, there's really a question about a transition for LANL to come into compliance, for the US to come into compliance and the jobs that could be created as a result of the coming into compliance with the treaty to keeping track of all the radio, the weapons --

MR. FOX: One minute.

MS. WHEELER: Yes, sir. -- the weapons materials around the country.

And so one more question just with the --

all of the questions with the hiring process right now. Why are we expanding pit production when we can't even clean up the mess that's already been taking place? And also that there's jobs in the United States for coming into compliance with the treaty, and we need to move into that direction.

I want to thank you again very much.

MR. FOX: Thank you for your statement. Next we have Arla S. Ertz from the Women's International League for Peace and Freedom.

MS. ERTZ: Thank you so much. As I said, my name's Arla Ertz. I'm from Chapter 53 Albuquerque and Chapter 59 San Francisco, and the International League for Peace and Freedom, the San Francisco branch.

And unlike Mr. Magrath who spoke earlier, I'm sorry, I didn't understand the protocol here either. I didn't know questions wouldn't be answered. I have what should be an easy question for Mr. O'Leary, but I see that the Los Alamos and N3B, whatever that is, folks are no longer on the panel.

Here's the question. Mr. O'Leary, you mentioned earlier when asked about what you plan to bring to your work from your past experience at the

Idaho National Lab that you will be in consultation with your contact there about lessons learned that you can apply and also that you've already been in ongoing contact.

That's very good but on the vague side. Could you give us some specifics of substance about what you have been consulting about so far and what you hope to get enlightened about in the future? Thank you.

MR. FOX: Thank you for your statement. That's everyone who signed up. I think we have time for one more. Is there anybody else who would like to provide a statement?

So if anyone has written comments, please hand them to Tara Tadlock over at the table. She's in the back there. You can also email them to us at hearing@DNFSB.gov.

With that I'll turn it back over to the chair. Thank you.

CHAIRPERSON CONNERY: Thank you, Eric. Eric has one of the toughest jobs in the room. He has to be the one who keeps track of time. As you noticed, we weren't doing that to ourselves. I apologize to the public for having to keep track of time. I understand there's confusion about

answering your questions.

Again, please feel free to -- if you have statements that you want to make for the record, you can send those to us, get in contact with Tara. She's over at the table now if there's more information you'd like to share.

I believe our colleagues from EM, they are in the audience, so they might be able to entertain your questions as well after we conclude this part of the hearing.

With that, I actually want to turn to my fellow board members to make closing remarks. I'll start with Vice-Chair Summers.

MR. SUMMERS: Thank you, Chair Connery. I would just like to offer that LANL, N3B, Department of Energy, elected officials here today, and the concerned citizens of New Mexico as well as the public have made progress in addressing some of these transuranic waste issues at LANL.

Together I'm very hopeful, again hopeful, that we can make even more progress that will be made on behalf of our American citizens as well as our great nation. Thank you.

Thank you, Chair Connery.

CHAIRPERSON CONNERY: Thank you,

Mr. Summers.

Ms. Roberson?

MS. ROBERSON: Thank you, Chair Connery.

I want to thank you, the members of the public, that attended this hearing in person and virtually, and I want to thank those members that spoke today.

I'd like to thank you, Mr. Mikolanis, Ms. Lebak, and Mr. O'Leary, for your participation and contribution to this hearing session. Achieving risk reduction, implementing a comprehensive modern safety basis, and achieving fully qualified staff, Federal and contractor, are the keys to reliable high confidence, safe operations, and worker protection. I look forward to our next opportunity to discuss the department and N3B's progress towards those goals.

Thank you, Chair Connery.

CHAIRPERSON CONNERY: Thank you. I'd like to add my thanks to Mr. Mikolanis. Sounds like you have a fan club here. There's a short window. Take advantage of it.

I would like to thank Ms. Lebak and Mr. O'Leary for your contributions. I appreciate the open and honest dialogue they were able to have

today.

I think our colleagues show the challenges that they face, and they didn't make excuses for -- for work that's been delayed.

I just want to make a comment about stop work. Stop work is a good thing. We're from safety organizations. When we see something that may go awry, we run into the unexpected, unknowns crop up, the real thing you do is stop work, and then you consider what the implications are moving forward. I just want to commend both N3B and EM-LA for taking that step. We don't want work to continue and safety be compromised. I understand that's a difficult concept. We never want production to be put over safety, even if that production means removing waste from the hill.

I also want to recognize the challenges of the workforce, keeping the workforce. We have some of the challenges of keeping a trained workforce. It's very important. It's difficult to train folks, particularly in the oversight field and safety field, and making sure they're trained is important. That goes to the conduct of operations and making sure there's safety.

I was encouraged. I know we had comments

about the underground waste versus the aboveground waste. If your workforce is untrained or untested, you want to do the easy stuff first, and then you want to make sure you do that well before you get to the harder stuff. I do understand why that decision was taken.

With regard to the safety basis documents, again, I -- that may seem to the public as something not as important as the actual work being done. As I have emphasized in my opening remarks, a safety basis document is the analysis of the work to be performed, the hazards associated with that work, and the safety controls to protect and mitigate the hazards. I recognize that you are working under an old safety basis, Ms. Lebak. I understand that doesn't necessarily mean you're not taking precautions, and you're looking at the activities that you're going to do, such as a glove bagging and drill and drain and you're making sure those are safe before you do them; however, we've been waiting since 2015 to see a safety basis, and between January 2020 and August 2022 you had 24 potential inadequacies of the situation, and you ended up with three -- sorry, six justification of operations. Well, that doesn't mean that you weren't working

safely. That is not ideal for the type of work being done. There is more work to be done.

We appreciate you're reaching back to people that have experience whether they're in Idaho or whether in Oak Ridge, whether headquarters. We hope that you'll continue to do so.

And we want to again thank everybody for being here, the citizens here today, those watching, and those who came to the microphone. At the end of the day, you're the taxpayers. You're the people that live here. The grandmothers and grandchildren are here. We respect you have an important voice in what happens in your communities.

At this point in time, we are going to finish session one, and I move to adjourn the hearing until four o'clock, where we will come and resume and have a conversation about NNSA. Thank you all.

(Recess was taken from 2:30 to 4:00.)

CHAIRPERSON CONNERY: First of all, I'd like to welcome everybody who is back in this afternoon's session earlier with our colleagues from EM-LA and N3B and for those of you who are watching by video, I know when we came to public time, our colleagues were here. They just chose to sit in the

audience during that time period. They did stay and actually had some good dialogue with some of our citizens after that session. So I wanted to make sure everybody was aware of that.

Also for housekeeping, since our NNSA and colleagues from LANL weren't here earlier, we have exhibits that we'll be showing on the screen that we've entered into the record. There's 37 of them. And we also have posted an acronym listing and glossary key terms to help the public understand our -- the conversations this afternoon.

Those documents, as well as all of the exhibits, are available on our website and are accessible through the QR code. If you folks at home want to follow along, that's how you do that.

Again, I just want to thank everybody for coming back. I don't recognize any other public officials, except thank you Councilman Hansen, Patricia Hansen, for returning. Appreciate that. And Anna Hansen is the county commissioner for District 2. She was with us this afternoon as well.

If there are any other elected officials that I should be recognizing -- seeing none, I'm going to call us to order for session two. Those of you who missed our introduction, my name's Joyce

Connery. I'm the chair of the DNFSB board. With me are Vice-Chair Tom Summers and Board Member Jessie Roberson. We also have Chris Roscetti, our technical director, and Eric Fox, our associate general counsel. Our goals for this evening's sessions are to gather information on the production activities to be conducted at the plutonium facility, the nuclear safety risks that the National Nuclear Security Administration, or NNSA, has accepted and the state of planned safety improvements to the safety system infrastructure and safety programs.

Once we finish our questions session from NNSA, we'll hear from any interested members of the public at approximately 8:45 this evening. If you'd like to speak during the public comment section and did not contact us, sign up at the sheet by the door. We encourage you to do so.

If you have any comments or anything that you would like to submit for the record, you can do that as well. I believe the record will be open until December 16th, so there will be time to do that if you want to share.

For these next two sessions, we're thrilled to be joined tonight by our counterparts

from the NNSA who have supported us and our staff throughout the lead-up to this hearing. We appreciate this cooperation from NNSA, as it's a reflection of the healthy working relationship that currently exists between our agency and NNSA. I would say the relations were adversarial a few years back, but we mutually recognized the need for more constructive relationship and worked together to implement a memorandum of understanding earlier this year, which has helped to improve our relationship.

We look forward to continuing this dynamic as we work to solve some of the defense nuclear complex's most intractable challenges, including those here from the Los Alamos National Laboratory.

Like I said during the session, we're looking to understand the safety posture of LANL's plutonium facility, called PF-4. As we will discuss, PF-4 is vital to our national security, and it is imperative that nuclear work in this facility be accomplished safely and securely.

This will present NNSA with challenges, first and foremost, because PF-4 was neither designed nor historically operated as a large-scale production facility. PF-4 is now over 40 years old, and it is showing its age in many ways, like many of

us. This is likely not news to anyone in this room. We have explored these topics in the public forum many times over, including a public hearing in 2017.

Despite this age, NNSA is relying on PF-4 to continue its mission work and even take on significant additional scope for the next several decades.

A great deal of work is needed both in terms of physical upgrades and culture shifts to change the paradigm from laboratory-scale research and development to full-scale pit production. Tonight we're hoping to hear about the progress NNSA has made on the fronts.

First is physical upgrades. The system we will spend the most time discussing tonight is the active confinement ventilation system. There's been a long history of communications back and forth between the board and NNSA on the subject. For more than a decade NNSA had planned to make upgrades to the components such that the system as a whole could be credited as a safety class control, which means it can be counted upon to reliably protect members of the public in the even of a bounding earthquake.

In March of this year, NNSA informed the board that it no longer seeks these upgrades to

achieve a safety class system. One of our objectives tonight is to understand why.

This hearing is not just about the ventilation system. Many other aspects of safety related infrastructure, such as aging and other deficiencies, are also in need of attention.

We've been talking about the fire suppression system as well as the gloveboxes in which workers perform operations with nuclear materials for as long as we've been talking about ventilation.

Apart from the physical changes to the facility, PF-4 will also experience a step change in the operational scope. PF-4 will be required to process more nuclear material, with more workers, than ever before. NNSA and its contractor, Triad National Security, will have their hands full in attracting, training, and retaining that workforce necessary to accomplish the mission safely.

And this mission is drastically increasing in both the near-term and the long-term. In August of this year, we sent NNSA a letter detailing our concerns with the expansion of operations with heat-source plutonium. In addition, we are looking to understand NNSA's perspective as to how it will

expand pit production operations in light of the fact that the facility still relies heavily on a passive confinement strategy for nuclear materials, a topic from another letter of ours that our staff will speak to separately.

So as you can see, we have a lot of ground to cover and many complex topics to discuss. To help facilitate this discussion today, we've prepared exhibits to be displayed on the screen for the benefit of the members of the public. Again, we have also posted a listing of acronyms and a glossary of key terms to help the public better understand our discussions this evening. These materials are available on our website, and you can use the QR code to provide that.

So at this time I want to turn to my fellow board members for their opening remarks. I will start with Vice-Chair Summers.

MR. SUMMERS: Thank you, Chair Connery. Hello and good evening. For those of you who missed the first session, let me reintroduce myself. My name is Tom Summers. I am the vice-chair of the Defense Nuclear Facilities Safety Board. I'm excited to be here today and want to welcome and thank the panelists and the interested public for

attending this hearing today.

Similar to the first session, in my statement, I will cover the positive developments that we are seeing at PF-4 and the topics that we have interest in but do not have the time to address tonight.

So regarding the good news, I'm happy to note that the amount of transuranic waste staged outside of PF-4 has been significantly reduced over the last few years. This is important, because unlike other storage options available at the laboratory, outdoor storage locations do not provide any additional protection in the event of release of radioactive material from a waste container. Structures such as PF-4, or the transuranic waste facility, include fire suppression and confinement systems to help confine or mitigate potential radiological release events like the accidents experienced at WIPP in 2014 and Idaho National Laboratory in 2018.

The laboratory has also completed several structural upgrades and earthquake studies for the plutonium facility. This increases confidence in the ability of the building to survive a major earthquake.

Speaking of upgrades, NNSA's contractor, Triad National Security, is in the process of upgrading the plutonium facility safety bases to meet modern DOE requirements. This upgrade is scheduled to be submitted to NNSA for approval next year. This upgrade is important because the modern safety standards have improved clarity with respect to safety expectations and requirements such that following them provides added insurance that the facility can be safely operated.

I also want to highlight the strides that Triad and NNSA field office have made in hiring new personnel; however, we also know that they have a long ways to go to meeting their staffing goals, both for operational staff and for safety personnel.

Finally, I would like to mention the topics that the board had continued interest in but will not be able to cover tonight during this session.

Number one, on-site transportation, which was the subject of a recent board letter. We had received the Department of Energy's response, and we are currently evaluating it.

Number two, other NNSA facilities at Los Alamos including PF-400, also known as a

radiological laboratory utility office building, or ROO-lob, and the transuranic waste facility.

Number three, emergency drills and exercises.

And finally, number four, the LANL environmental impact statement. We know that many of you are interested in the LANL environmental impact statement, but the board is not participating in this process.

Thank you, Ms. Connery, for giving me the opportunity to speak. This concludes my statement.

CHAIRPERSON CONNERY: Thank you, Mr. Summers.

Ms. Roberson, would you like to make remarks?

MS. ROBERSON: Thank you, Chair Connery, I will bypass opening comments at this time.

CHAIRPERSON CONNERY: Before we hear from NNSA, I'm going to ask our technical director, Chris Roscetti, to give us a statement describing the views of our staff and concepts that we will be talking about this evening. Turn at this time over to Mr. Roscetti.

MR. ROSCETTI: Thank you. I appreciate the opportunity to discuss PF-4 and Los Alamos

National Laboratory.

I want to provide background information to assist the public in understanding today's hearing. PF-4 is the nation's primary plutonium processing facility, meaning that it is responsible for producing plutonium components, called pits or nuclear weapons, disposing of excess plutonium, and fabricating components for other entities such as NASA.

To understand how to safely operate the facility while completing this mission, NNSA's contractor, Triad National Security, prepares documents called a safety basis. In the safety basis, Triad identifies potential accidents and evaluates the consequences of those accidents. For higher consequence accidents, Triad will then identify safety controls to prevent or mitigate the consequences of those accidents.

At PF-4, the most challenging accident is a severe earthquake that also causes a fire. The calculated dose consequences from this bounding accident scenario would exceed the Department of Energy's evaluation guideline of 25 rem total effective dose to the offsite public.

By the department's own requirements,

exceeding the evaluation guideline means that safety class controls or controls relied upon to protect the public must be put in place. These controls must be constructed to rigorous criteria to ensure they will perform their safety functions when necessary. The primary control that NNSA relies upon to lower the calculated dose consequence of PF-4 is acid confinement, which uses the building structure to reduce the amount of radioactive material released in the environment.

This concept is illustrated in Exhibit 10. Any doors, cracks, or other openings in the facility are pathways for radioactive material to escape. The fraction of airborne radioactive material that escapes through these pathways is referred to as the lead path factor.

For the bounding earthquake and fire event, NNSA determined that passive confinement control reduces the calculated dose consequence to slightly below the DOE evaluation guideline. But these calculated dose consequences are dependent on PF-4's external doors only being open for a total of five minutes to evacuate the entire PF-4 workforce.

NNSA also plans to upgrade additional safety class engineered controls, including the fire

suppression system to further mitigate the release. According to NNSA's March 2022 letter to the board, NNSA determined that the combined effect of these additional controls will reduce the mitigated dose consequence to about seven rem once they are complete. However, the PF-4 safety basis identifies multiple existing deficiencies in the ventilation and fire suppression systems that may prevent them from performing their intended functions during an accident. The board members plan to explore this further today.

I will talk about equipment performance in an earthquake using the example in Exhibit 11. Equipment designated as performance category three or PC-3 is considered able to reliably perform a safety function through a bounding earthquake. At the next lower level, the systems and components designated as PC-2 are analyzed and designed to operate the following or less severe earthquake.

Sometimes equipment requires upgrades to ensure it can be relied upon at the designated category. For example, in Exhibit 11, we can see additional bracing added to security electrical equipment. On the left, we can see electrical cabinets before upgrades. On the right, the yellow

arrows point to additional bracing for a seismic event.

Exhibit 12 shows some of the history of correspondence between the board and the department regarding PF-4 during the past two decades. In recommendation 2004-2, active confinement systems, the board outlined the drawbacks of relying upon passive confinement systems. PF-4 is the only major NNSA facility with plutonium dispersal hazards to rely upon passive confinement as the primary credited safety control to protect the public.

While passive confinement provides some mitigation in the case of an accident, active confinement ventilation systems mitigate accidents in a different and more effective way. These systems use fans to ensure that air moves into the facility through doors and leak paths, not out. The system fans direct contaminated air through high efficiency particulate air filters, or HEPA filters, capturing the radioactive contaminants.

PF-4's active ventilation system is classified as PC-2, while the passive confinement systems is classified as PC-3.

Later on the timeline, the board issued recommendation 2009-2. Los Alamos National

Laboratory plutonium facility seismic safety. This recommendation described deficiencies in the safety basis of PF-4 specifically. The board's major concern was that the calculated dose consequences for the bounding seismic event were much higher than the DOE evaluation guidelines even after the application of safety controls. In response to this recommendation, the Secretary of Energy committed to a strategy to ensure that the mitigated dose for bounding earthquakes of PF-4 will not exceed the evaluation guideline. This strategy involves strengthening the facility structure.

Pictured in the upper half of Exhibit 12 are seismic upgrades being completed over the years, including carbon fiber reinforcement of structural concrete and, more recently, columns undergoing seismic testing.

NNSA originally planned to upgrade the active confinement ventilation system to be safety class and PC-3, resolve seismic deficiencies for the firewater loop, and replace the aging fire alarm system as part of the TA-55 Reinvestment Project Phase III. NNSA eventually shifted strategies and elected to pursue piecemeal upgrades to components in the ventilation system but with the same planned

end state.

However, as the chair discussed in her statement, in March of this year NNSA informed the board that it no longer seeks these upgrades to achieve this safety class PC-3 system.

In a November 2019 board letter, and again in Technical Report 44, LANL plutonium facility leak path factory methodology, the board identified concerns with PF-4's accident analysis methods. These calculate how much radioactive material escapes PF-4 in the bounding accident.

There are many complicated assumptions in the leak path factor calculations, such as the amount of time that the exit doors will remain open while workers are evacuating the facility.

Finally, on August 11th, 2022, the board issued two letters outlining the board's concerns regarding leak path factor calculations and NNSA's acceptance of higher risks using exigent circumstances process to package large quantities of heat-source plutonium. The board members will explore these topics later today.

This concludes my statement.

CHAIRPERSON CONNERY: Thank you, Mr. Roscetti. I know that was a lot. We want to

make sure we set the stage so that everybody understood the direction of the questions and how we were going to approach this today.

So I would like to introduce our NNSA panel today. So joining us are Administrator Jill Hruby; James McConnell, associate deputy principal administrator NNSA; Mr. Ted Wyka, manager Los Alamos field office; Dr. Thom Mason, laboratory director at Los Alamos.

The board set aside a few minutes for NNSA to provide an opening statement, so I'd like to recognize the administrator for her opening statement before we proceed to our questions.

MS. HRUBY: Good afternoon. Thank you, Chair Connery, Ms. Roberson, and Mr. Summers for your comments, and welcome to all the members of the public here and virtually attending today.

I appreciate the opportunity to be back in Santa Fe and have the opportunity to speak on behalf of the NNSA to address NNSA's mission priorities and associated plans at Los Alamos.

First, let me start by thanking the Defense Nuclear Facility Safety Board and the staff for their professionalism and commitment to nuclear safety. I'm certain that the work that we do at

NNSA is better because of your input. While we'll not necessarily agree on all matters, there's no question in my mind about that.

As noted in the recently released Biden administration nuclear posture review, we find ourselves at a time in history when the United States needs to have a strong nuclear deterrent coupled with leadership and arms control and nuclear nonproliferation.

The priorities at Los Alamos and throughout the nuclear facility enterprise are responsive to those laid out in the nuclear posture review. NNSA's work to support nuclear deterrents has two primary and interrelated priorities. One is to refurbish and modernize our nuclear stockpile, and the other is to recapitalize and revitalize the infrastructure needed for both the stockpile modernization programs and related science and nonproliferation missions.

These priorities are interrelated because the timing for the infrastructure work is driven by the stockpile requirements in the near term, and in the long-term, the goal is to create a resilient and adaptive production enterprise. A resilient and adaptive enterprise would not have single points of

failure and would be able to be scaled either up or down as world conditions derive US policy changes.

I would like to make a few specific comments about pit production at Los Alamos since it is central to NNSA priorities and to this meeting today.

The Los Alamos National Laboratory Plutonium Facility 4, commonly referred to as PF-4 within Technical Area 55, or TA-55, is currently the only facility authorized to produce plutonium pits in the United States.

This makes Los Alamos and our work there vital to NNSA's requirement to produce a minimum of 80 plutonium pits per year as close to 2030 as possible.

The specific objective at Los Alamos is to be able to reliably produce at least 30 pits per year. We are building another facility at the Savannah River site to produce a minimum of 50 pits per year reliably.

Our efforts to prepare PF-4 for its production mission are emblematic of our efforts across the nuclear security enterprise, carrying new and revitalized infrastructure capable of handling our expansion requirements with improved safety

equipment and resilience measures. In this way, we are fulfilling our obligation to meet mission requirements with our commitment to be good employers, strong stewards of the environment, and close partners with local communities.

In addition to investing and upgrades to PF-4 safety equipment to further support safe operations, we are undertaking a complete revision of the PF-4 document safety analysis that will provide updated analysis to validate safety controls.

Of course, in addition to the infrastructure and safety upgrades, we need a dedicated, qualified, and in some cases specialized workforce to achieve our mission and the best operational performance, we have made recruitment and retention a top priority so that we can meet our obligations today while building institutional knowledge in preparation for the challenge of tomorrow.

Overall, while we face a challenging mission, we feel we are headed in the right direction. Our intent is to follow all applicable safety, security, and environmental rules and regulations, seek continuous improvement, and meet

our national security obligations.

Thank you very much, and we look forward to the rest of our discussion.

CHAIRPERSON CONNERY: Thank you, Ms. Hruby. We're going to add that statement to our record, and of course if you have any other documentation or information you'd like to add to the record, we'll keep the record open until December 16th. If anything else comes up during the hearing that prompts you to do so, let us know.

So with the time remaining, of course, the board has a couple of questions while we're here. I'm going to exercise my prerogative as chair to ask the first question, and I'm going to start the session with the question to the administrator, because it has a lot to do with what you said in your opening statement and a holistic discussion of NNSA's national security mission's pit production, heat-source plutonium processing and ensuring a safe deterrent.

So NNSA is planning for a portion of important national security work to be accomplished in PF-4, as we've already discussed, and PF-4 is already 44 years old, and this work is expected to extend the need for PF-4 for at least several more

decades. As of now PF-4 hasn't given up a mission, but NNSA has other facilities that could potentially handle plutonium processing after some upgrades. For example, facilities of Nevada National Security Site or the new pit production facility we were discussing at Savannah River. Exhibit 13 shows the facilities and provides some information about the proximity to the public.

Additionally, I just want to point out the highest hazard operations in PF-4 aren't necessarily pit production, it's associated with the heat-source plutonium rather than pit manufacturing the consequences of an accident involving heat-source plutonium about 200 times worse to individuals than plutonium involved in pit manufacturing.

As you can see from Exhibit 14, in our 2017 hearing Mr. McConnell discussed the concept to remove these activities and other high-risk activities and put them in new modular facilities with a modern nuclear safety system. This from a safety standpoint makes a lot of sense, but I think it's potentially cost prohibitive.

With that in mind, my question for you, Administrator, about what -- as the administrator across the enterprise, have you considered the

possibility of transferring some of the work beyond the scope already in Savannah River to other locations to alleviate the burden of PF-4, and, you know, based on the commentary from 2017, does NNSA have any current thinking on moving the plutonium mission or other high-hazard work to new facilities, or is that outside of the scope? Thank you.

MS. HRUBY: Okay. Thank you for the question. It's very well-posed. So let me make some comments about -- so you have shown the sort of three options of existing facilities that we would have to do plutonium work, and in fact we do plutonium work at all of those facilities.

The -- what we -- previous administrations may well consider decisions about the two-site pit production strategy. One of the things we know is that we need to move the -- we feel those were good decisions, and we need to move on with those decisions and endorse that, and the Secretary of Energy endorsed that approach. That is our primary focus in these facilities, is to make -- and any of our plutonium facilities is to make sure that we're able to make new pits at the rate we need to.

There are other plutonium activities, and they come, of course, with the risk of handling

plutonium.

We have -- I've worked closely with the lab. We have -- we are looking at how to scope all of that so it works holistically. I think we've made great progress, looking at the program holistically as opposed to one mission at a time. We are not today planning or funding additional facilities to handle heat-source plutonium. This is the facility -- you know, again, it is in the best interest of the United States, in my opinion, to not proliferate plutonium facilities, to use the plutonium facilities we have as efficiently and effectively and as safely as possible.

Our judgment is today that heat sources on PF-4 make sense from that perspective. There's a lot of things that are going to happen over the next couple of decades, and I couldn't predict whether, you know, we need to relook at that, but today we're trying to utilize the facilities we have as efficiently, effectively, and safely as possible, and that's -- and that's the basis for the decisions that we made in this administration and previous administrations.

CHAIRPERSON CONNERY: Thank you. That's exactly the direction we were looking for.

So I'm going to turn the questioning over to Ms. Roberson, ask if she has any questions.

MS. ROBERSON: Thank you, Chair Connery.

Recently NNSA accepted a mission, which you've referred to already, Administrator, a mission for PF-4 that involved receiving large quantities of heat-source plutonium that requires repackaging. Triad has conservatively calculated that dose consequence from accidents involving this material are above what is normally allowed per DOE safety standards.

NNSA has accepted this risk using the process known as exigent circumstances. This activity supports space exploration projects such as the Perserverence Rover, shown on the left side of Exhibit 15.

On the right side of the exhibit, we see fuel storage out of containers. These are welded containers that Triad workers will repackage the heat-source plutonium into for safe storage. The board discussed this planned activity in a recent letter to the Secretary of Energy. We pointed out that NNSA and Triad could have made different decisions, such as making upgrades to engineered safety systems in PF-4 to reduce safety risks

associated with this activity.

So my question is to you, Mr. McConnell, first. NNSA should take -- we believe NNSA should take all feasible actions to avoid the need to apply the exigent circumstances process. While it would have been difficult for NNSA to use the exigent circumstances process for this activity, NNSA could have reduced safety risks if it had coordinated the activity better.

With your strong leadership role in safety in your position in safety at NNSA, how did you balance risk with completing this activity?

MR. McCONNELL: Thank you. A very good question. First off, by its very name, conditions, we completely agree with you that this is a decision in the regime that should not be needed very often, and it is intentionally set up to be run for -- the name isn't particularly useful to tell folks what it is, is to add additional layers of review, more senior review, to make sure that all options are available in these rare instances where an operation would exceed the evaluation guideline are duly considered, and I want those additional layers of review.

Your point is well-taken, obviously, that

we would like to have systems and controls in place at PF-4, at any facility that accepts hazardous work, to make sure that there is a margin between what -- what our safety systems can control within evaluation guidelines and the hazards that we accept. That's our goal at PF-4. That's our goal everywhere. That -- the problem we faced here was one of timing, that the time needed to deal with a hazard which -- I won't get into additional detail, but there was a safety benefit to -- to timely processing of this hazard against the time it takes to create the physical controls that would allow us to operate within our normal safety bases.

We looked at the operation at the laboratory and the field office in particular, the normal risk acceptance methodology, take every opportunity to use not only the controls that are physically available in PF-4 but what we call administrative controls, which are additional controls that we can put in place that affect processes and things like material at risk or how much material could be processed, would be available to be involved in a hazardous event at any one time, put controls on those things to use the full suite of our ability to mitigate hazards but still meet

the timeline because of the safety benefit of acting quickly.

So we made the right decisions. I was one of the people that approved the exigent conditions to go forward with this. It is at an enterprise level at the entire biggest picture, the least risky, best safety activity considering all of the Department of Energy. But once again emphasizes to us that we can't let up on our effort to continuously improve the safety both in terms of the physical controls, our administrative controls at PF-4 and every one of our facilities. I would like to say, but I can't, that this would be the last time we use exigent conditions.

But it certainly, you know, puts in other elements into our motivation to continue to do these improvements, and we'll talk more about the state of our current improvement at PF-4 throughout this current discussion.

MS. ROBERSON: Thank you, Mr. McConnell, and frankly, Administrator. You know this better than I do, but I'm guessing this won't be the last emergent mission that we face.

And so one of our questions is are there lessons learned in consideration as a result of this

experience that may allow you to have -- be able to make better decisions the next time?

MS. HRUBY: Thank you. What I would say, you know, by definition, surprises are surprises, but the concept that we're working towards, that I mentioned in my opening statement, that's also in the nuclear posture review of a resilient infrastructure really is, in part, about this.

What can we do to create -- as we're spending a significant amount of money, as we're revitalizing our facilities, can we think about how to be more resilient not only to mission but to safety and security and other issues that -- and so we are -- we are working hard to try to think more forward about the things that we do.

What we've learned in the enterprise is what we do today is around for 50 years. You can pick a number. You know, sometimes 40, sometimes, you know, 70, but it's around a long time, and so we really need to think not only in the near-term but in the long-term about the potential uses of the facilities, and that's what we're trying -- that's my -- that's how we're trying to respond to these surprises.

MS. ROBERSON: I appreciate that. And

although you -- you weren't here, we harken back to, as Mr. Roscetti went through kind of the historical perspective, the discussions and commitments that were made about upgrading gloveboxes and how that tended to wane and probably would have put you in a much better position now. So all we can do is try to do better. I appreciate that. Thank you.

Thank you, Chair Connery.

CHAIRPERSON CONNERY: Thank you. Along those lines of resilient infrastructure, obviously the more robust you build, the more you have safety class systems. The more these items come up, you're ready to deal with them and not have to put yourself in a higher risk position such as the glovebox upgrades that we've been talking about for a number of years now that Ms. Roberson just discussed.

So as we're discussing how NNSA could reduce the risk at PF-4 operations, one major step we've been talking about is upgrading the active confinement ventilation system. LANL modeled the effects of these upgrades and found that the doses to the public would be substantially smaller if this were done.

As Mr. Roscetti indicated earlier, NNSA is currently relying on a passive confinement strategy

for earthquake accidents at PF-4. PF-4 is something of an outlier in this regard. Other DOE facilities tend to use active confinement ventilation systems, not passive, as a safety control for the bounding earthquake scenarios.

Previously, NNSA's plan had been upgraded to active confinement ventilation system to safety class. At one point they even had a line item funding for doing so, but the funding sources changed. And this was still NNSA's plan as recently as 2020 when Mr. McConnell briefed the board as shown in Exhibit 16.

But as we noted in March 2022, the safety class is more of a goal. And we understand that budget situations change and priorities change, but we, Administrator, we're concerned about the lack of safety class active ventilation system, given the work that's going to be performed and potential work that could be performed as we just outlined with the exigent circumstances situation.

Can you outline the change in position and why you feel confident you don't need a safety upgrade at this point?

MS. HRUBY: Let me start. I think it would also be good for Thom Mason to make some

follow-on comments about this.

With respect to the active confinement ventilation and passive confinement ventilation, what we are trying to do is balance the -- the best use of taxpayers' dollars, our ability to deliver, and at costly enterprise, right? So we -- I think the calculations that have been done, the thought that has gone into this, we may be -- this -- a bit -- our approach is a bit of a hybrid system, actually, and maybe Thom can explain that more.

So we are going to provide things that help us move later towards active confinement ventilation but continue to move forward with the passive confinement with other upgrades that we feel are significantly increasing the safety in an adequate way.

And again, you know, lots to balance here, but, you know, our approach is to make sure that we can -- that we can do this balancing act that keeps us as safe as possible, best uses of, you know, public dollars, and balance our budget across the entire enterprise, not all in one facility.

And so with that, maybe Thom can spend a little bit of time explaining more about how we made this decision.

DR. MASON: Yeah, happy to, and Ted may want to chime in as well. I think it's important to keep in mind that PF-4 relies on both passive and active confinement systems, and both of which meet the DOE orders and standards. And I know the board understands this, but for members of the public, you know, within the hierarchy of controls, actually, whenever possible we like to take advantage of passive systems, because they rely on fundamental physical principles like gravity and natural convection to do their jobs.

With active systems, you have to go to great lengths to make sure they remain operable. We use active systems when the passive systems by themselves are not adequate, but there is a preference to rely on passive systems as a superior mechanism for ensuring safety.

And, you know, we have -- we are working now and will be shortly completing an increase in the seismic performance of the fire suppression system, which is going to significantly reduce the offsite dose, which is the thing that we're seeking to mitigate and, in fact, provides for us a very effective and also much more rapid improvement in that -- in that safety consequence.

So as the administrator said, really the goal here is to identify the most effective, shortest path to significant improvements in safety, and we believe the fire suppression system upgrade represents a good portion of that.

In addition, the uptake to the DSA that has been mentioned previously will be able to take into account a number of other improvements that have occurred within the facility which should further, you know, mitigate that -- that offsite dose.

So our approach is to try and, as I said, in as timely a way as possible, achieve the maximum safety benefit and make sure that the significant investments that are being made are targeted the way that most -- most effectively accomplishes that task.

And I think Ted may also want to add a few comments. Obviously at the field office we've had a lot of discussion with this topic.

MR. WYKA: Thank you, Thom. And yeah, I'd sort of like to add in -- sort of tie into two -- the first two questions together, too.

As you stated, the PF-4 is a super important facility for the next several decades, and

we have six program -- major plutonium mission of records, you know, being done in PF-4 and as a safety basis approval authority of a field office manager for this activity.

You know, I look at each individual vision for a safety basis as well as the holistic. And with respect to, you know, confinement ventilation, PF-4 over the last decades, we've improved and made significant investments to upgrade the structure of PF-4 and for seismic events, as Thom mentioned, not only passive and active confinement systems that meet DOE orders and standards, specifically the safety class passive confinement system, as well as the safety active confinement ventilation system, as Thom pointed out, the upgrades to the fire suppression safety class as well as the pit production glovebox safety class. But key in all this is the work that we're doing now to upgrade the PF-4 document safety analysis is going to be revised to DOE Standard 3009-2014. This is probably one of the few facilities that will have this upgrade safety basis, which will upgrade all the analysis.

So this is really going to be our driver to identify appropriate safety controls for the safe execution of the pit production as well as the other

plutonium mission records in PF-4.

And with respect to the ventilation system, we'll note that we're replacing a lot of the specific components. It won't be a safety class system, but the components that we're replacing on a lot of them, including a control systems, structural ventilation systems, diesel generator, and power supplies as well as the exhaust or bleed-off fans, so a lot of those are already being updated.

And we're going to do an incremental deliberate set of improvements, you know, as we have to replace some of the electrical components, you know, as well as ductwork.

CHAIRPERSON CONNERY: Thank you for that. I just want to make a comment on the passive confinement system you've talked about, and obviously making sure the structure stands is very important. We know you've had a lot of dialogue over the years about seismic upgrades, and the lab has done a significant amount of work in that area the board has been pleased with. It took a long time.

Also the DSA, it would be great to have a 3009 2014 compliance DSA, although it's a little bit disappointing we don't have more of those in the

complex using 2014 as part of that.

I do -- I don't want to harp on this too much longer. I know we have a lot of other things to cover.

When it comes to the pit production, we noted that Savannah River is also going to have a pit facility. It's going to be at the benefit of being a quasi new-build as you're refurbishing another building that was used -- supposed to be used for another purpose, and we won't mention that situation.

But in that facility, the intent is for a safety class active confined ventilation system created to mitigate an earthquake, and Savannah River pit facility, as far as I know, is going to be for pit production.

PF-4 is not only pit production but, as we noted, is the plutonium center of excellence as we've been told, and there's a lot of other missions. So you can choose to answer or not. I know you guys have a lot more considerations to make than we do, since we only focus on safety. There seems to be an inconsistency there where a single-purpose facility will have an active seismic rated confined ventilation system, but this facility

won't, or sounds now like you're saying it may eventually as we incrementally increase.

MS. HRUBY: Yeah, I appreciate the seeming inconsistency. My perspective is that we -- with respect to the ventilation system for the Savannah River production facility, we get to start from square one, and we're committed to doing, you know, everything we can to do that, again, for the future, as safely as possible, and we can do it within the timeframe expected for the construction of that facility and its commitments to our delivery.

In PF-4 we know we have a more difficult situation that -- that again to -- the comments that Thom made, we are trying to get the most safety and the most time, you know, critical manner and cost effective manner. It would be -- it's -- it would be a very significant activity and upgrade, just like any remodel is harder than a new build, and in certain ways, and this is one of those ways.

So we're not -- so while I understand it presents sort of a theoretical inconsistency, it has to do with the practical manner. We get to build the Savannah River ventilation system from the ground up.

CHAIRPERSON CONNERY: I appreciate that

you're just remodeling the home; you have house guests at the same time. I appreciate the analogy. I'm going to turn to Ms. Roberson for the next question.

MS. ROBERSON: Thank you, Chair Connery. I want to continue a little more on the topic of passive confinement at PF-4. The most challenging is the bounding earthquake followed by fire. Mr. Roscetti explained how the primary safety control is a passive confinement system, actually, and relies on the door being closed after a certain amount of time. The longer the doors are open, the more material escapes, and the greater the radiation dose to the public.

Triad monitors this situation to determine how much of the radiation material escapes from the facility, and this is called the leak path fire, thus an essential assumption as far as the amount of time the exit doors remain open.

Let me pause here and say I want to thank you both. We had the opportunity to walk through the facility yesterday. Very cordial. We appreciate the time that was provided to us. And also while we are learning from your staff, we also had the opportunity to pay attention to the

conditions in the facility.

And there are physical conditions in the facility that may complicate the evacuation and time the doors remain open. PF-4 has ducting and other equipment that are not qualified to survive the bounding earthquake. For example, there's overhead ventilation ducting that may fall, as shown in the left side in Exhibit 17, and oftentimes there are carts, lots of carts, and unsecured tube boxes in the hallways, as shown in the center and right picture respectively.

In addition, not all emergency lights are equipped to function in the bounding earthquake, meaning the facility might be dark in places as workers try to leave.

So, Mr. Mason, the one question we have is we know you're staffing up a lot. What's your sense of what's the peak number of workers you expect to be inside PF-4?

DR. MASON: Let's see. Right now we have about a thousand daily occupancy, although we have spread that out in time by going to 24/7 operations, actually, because of the congestion that you both mentioned and observed.

That number will grow, although we will

continue to make use of these extended hours, particularly to separate the production operations and the installation operations so that it does mitigate that.

In terms of the five-minute criteria, I would -- I should emphasize that's just not an analytical number. We actually do drills. And in fact, I know that emergency preparedness is not one of the topics for today's session, but I would say in the world of emergency preparedness drills are of significant importance, and in fact, that means we have data, and we know that we're more like two minutes or two and a half -- two and a half below the five minute for the evacuation time. There is margin built into that analysis.

In addition, we have over 300 emergency lights. You mentioned the emergency lighting in the facility that comply with the life safety requirements such as the National Fire Protection Association OSHA standards. The most crucial ones are the fully rated seismic lights to PC-3 in the corridors specifically to facilitate that prompt evacuation.

The remaining lights have some seismic capacity and would meet the PC-2 capacity.

Actually, we do have plans to continue to replace emergency lights with the PC-3 seismically qualified lighting to facilitate that safe evacuation.

In addition, after the evacuation is complete, the confinement doors close automatically. And that door closure is a credited component to the confinement system.

Finally, as part of our emergency response procedures, there's a verification that the doors are closed to ensure that that happens, so we do have confidence in that analysis and that element of the -- of the factor -- leak path factor that you mentioned.

MS. ROBERSON: That's very helpful. Thank you. We are aware, and maybe I'm wrong, that there is an effort to do some additional modeling to either confirm that's sufficient time or determine if it's more or less. Is that still ongoing, the path light?

DR. MASON: That's correct.

MS. ROBERSON: And will that consider, like, emergency responders coming into the building as well as the people leaving the building?

DR. MASON: I think that's probably one of those things that we ought to take advantage of your

offer to enter things into the record rather than winging it.

MS. ROBERSON: That would be great. The last, you mentioned there's confirmation the doors closed. One of the questions we had is is that someone going to the door to confirm, or is there an electronic signal that the door's closed? Do you guys monitor the air delta between in and out, or are there remote signals that would validate the passive confinement is active?

DR. MASON: What I was referencing is the fact, as part of our emergency response procedures, the doors are verified to be closed by operations personnel, so it's a positive verification as part of the emergency response proceeding.

MS. ROBERSON: Do you know if you guys do plan any indicators on air -- on air difference or any remote indicators on the doors? That's not in the plan right now?

DR. MASON: We do have indication available of pressure differential readings, so there is instrumentation to support that. We would be happy to provide further details to the board on that.

MS. ROBERSON: Thank you, sir. Thank you

very much. I just got a new question, so thought I'd ask this, because this is the information we got. The drills that have been performed involved everyone standing by outside the rooms waiting to evacuate. Does that sound familiar to you?

DR. MASON: I think we do a variety of drills. In fact, one of the things we're adding next year, or we're planning to, we're going to be incorporating drills during the back shift, which is a new thing for us. So we try and evaluate the procedures under a variety of different scenarios, including expansion.

MS. ROBERSON: So more time?

DR. MASON: Yes.

MS. ROBERSON: Thank you. Thank you, Chair Connery.

CHAIRPERSON CONNERY: Thom's time's coming. I noticed Mr. Summers hasn't said a lot, but this is just the order of how we divided up the questions.

So you stressed the importance of the fire suppression system. We're trying to understand how that's going to work in a bounding earthquake and fire. The public could receive a dose from two different sources. One could be the reactor

spilling, and the other the material burning. These two components add up to just below the DOE evaluation guidelines of 25 rem. In NNSA's response to our November 2021 letter, which we are showing in Exhibit 18, you noted the dose consequences would be lowered to seven rem once the fire suppression system is lowered to the seismic qualification.

Even though the fire could loft radioactive particles into the air, the fire suppression system would completely remove the parts from the air. Our concern is the sprinklers in PF-4, shown on the right side of Exhibit 18, are just like what you would see in a store and would not perform as robustly as has been indicated by your calculations.

So -- and this is -- I'll address this to the administrator. You can choose to pick who answers it if you wouldn't care to, but you have already committed to this strategy. We want to understand the basis for the decision. That's why we are asking the questions. Would you or Mr. McConnell want to discuss what actions NNSA took to ensure the validity of those dose mitigation values of seven rem, because we got the letter. We understood what you were saying, but we didn't see

any of the evidence that validated the seven rem.

MR. McCONNELL: Great question, and you point out sort of the distinction between an analytical portion of the -- of the overall response and then which -- sort of a -- you go to the real world, you collect the data, you take that information, put it into models, assuming a certain fire with a certain intensity and certain area or worst case part of the facility and then assume some amount of fire suppression.

As we all know, only the sprinklers that are in the vicinity of the heat are going to actually go off. That's the way a sprinkler system works. You model some heads going off and some not, and then that model produces a number. That's the only way to get that number.

But your point, then, is to go back and make sure that the assumptions that were critical to the model are reflected in the real world. And I don't know where this particular sprinkler head is. I suspect in the not too distant future we're going to find it, and it is just one of many. I wouldn't hazard a guess how many sprinkler heads are in PF-4, but we have an obligation, then, to make sure that the reality of the facility, whether it's -- I'm not

a fire protection engineer. It is a very complicated field, and so I wouldn't want to hazard a guess. But the fundamental point you have here is, is the real-world systems actually installed, maintained? Has there been, over time, some interference put there that would cause us to question whether or not the assumptions in that model still hold?

That's part of our normal quality assurance, and so it happened as part of us getting to the point that we would accept this model as useful information, but the world keeps changing, the facility keeps changing. We need to make sure we stay on top. I suspect in a little while we're going to talk about oversight. This is one of the key points we need to continuously be vigilant to make sure the physical world in PF-4 meets our expectations so that we can make sure that those models remain valid.

MS. HRUBY: This is part of the question I don't think we addressed, which is how did NNSA look at the models that we got from Triad. Was that what you were going to follow up on?

CHAIRPERSON CONNERY: More of the point, though, so we were -- the question was about the

confinement ventilation system. That's what the letter was about, and you responded and said, hey, we understand this is what you want.

To your point, it's very difficult to put the active confinement ventilation system PC-3 into the facility; however, we are relying on a safety class fire protection system to do the job in conjunction with the passive confinement ventilation system that Dr. Mason spoke of. So okay, sounds like you have a path forward that gives you confidence that we're going to be able to protect.

What's curious, the number went from 45 to seven, but we didn't see any of the data, whatever model you were using, either the inputs or the calculations that got you to the seven rem. That's the question. You're obviously not going to be able to answer that.

MS. HRUBY: I think I would like to see if Ted Wyka could add some information here.

MR. WYKA: I would like to add a little bit and not restating the systems that we already have in place, the fire suppression, glovebox, seismic upgrades, the, you know, safety class confinement system. This is where your staff is also helping out a lot.

AUDIENCE MEMBER: Microphone.

MR. WYKA: We've had very, very rigorous discussions back and forth over the last several months on leak path factor, and this analysis is actually a key input into our DSA that we're updating the 3009 2014 DSA. And part of that process is using the models that are available to us with this input, from the MELCOR, CFD, and MCAS, different model versions to help us analyze with our technical -- to technically defend our models, and again, that'll address, you know, what systems and the adequacy of our systems.

CHAIRPERSON CONNERY: I appreciate that. I think -- again, you can submit for the record if there's documentation for that that will help us understand how you got to that point. I wasn't denigrating the sprinkler system. The sprinkler system is what it is. I was pointing out it's not a deluge system. It's, you know, you are upgrading it, which we were happy about. You are upgrading the fire protection loop so that the water gets to PF-4 when it needs to. The assumption is all of the radiation gets knocked down, to use a colloquialism, then we don't see that happening for the seismic system you mentioned.

MR. McCONNELL: This is -- the model is very complicated, and we will provide information. Part of this is to help -- you talk about two ways that material would, stuff that falls. You know, it's in the building. There has to be some reason for it to leave, and so it falls. And just like if somebody were to knock over some talcum powder, there would be a puff. That puff would then aerosolize material. It would flow with the air out through an opening. Although a building normally operates with lowest pressure in the building.

A fire, the heat from the fire generates -- from a principle of physics perspective generates energy, and the energy heats the air. The air then is the second reason why the material would move out. So part of the model is the sprinkler system cools the fire. The fire doesn't provide as much energy, which doesn't provide a driving force to force the puff of material to go out the door. It's not the water -- the particles bond to the water and fall out.

I just want to make sure everybody -- there's a lot of physics, and thank goodness we have the Los Alamos National Laboratory, but we need to provide you those models that have been validated,

and we have to apply them to the specifics of our ability, quality check them with your -- you have talented people that can do things just as we can. We can get that information.

CHAIRPERSON CONNERY: I appreciate that. I'm not trying to badger the witness at this point in time. I'm trying to make it clear what it is we're looking for. If we get an answer like that, that's fine. It's within your purview to provide that answer. We want to make sure we can evaluate. We do have a fire protection engineer here as a resident inspector. That's not by accident. We recognize the hazards in the facility.

So I will -- actually, onto the next question. Sorry. So this goes to modeling, and in recent years we've noticed that the laboratory is increasing efforts on analytical modeling, which you are adept at. These efforts are used to justify deficiencies in engineered safety systems rather than rectifying the actual system. Colloquially we say you pencil whip the issue rather than addressing it.

Probably the biggest example is this PF-4 leak path factor calculation that Mr. Wyka was speaking of that we mentioned earlier. We can show

you the complexity of the approach in Exhibit 19. It involves multiple models, numerous assumptions, some of which are hard to defend or protect with controls just as we discussed. So we understand you're upgrading physical systems. This isn't glossing over the efforts. We know the blood, sweat, and tears that went into the seismic updates. We saw the replacements on some of the ventilation systems and some of this fire protection when we were in PF-4 yesterday. However, we do see this trend that time and resources are increasingly devoted to modeling away the problem instead of improving the physical system.

Dr. Mason, can you comment on the focus on the modeling to justify the acceptance deficiencies rather than increasing efforts to physically improve the physical systems?

DR. MASON: I would say I do not view modeling in quite the way you described. Our current documented safety basis and the update that we're working on really relies heavily on engineered systems. And, you know, these include the sorts of things that you talked about, glovebox support stands and, you know, heat-source encapsulation, fire suppression systems, so forth.

The role of modeling is to support the analyses. In fact, we just talked about the example in terms of how does the fire suppression system mitigate the offsite dose. We have to use the models to translate the impact of those engineered systems to determine whether or not they're getting the safety that we want, and -- and, you know, we don't deploy engineered systems or even administrative controls without understanding how they're going to get us the desired outcome. There would be little value in that approach.

So, you know, I don't view models as a way of somehow avoiding a necessary safety system or engineered system. I actually view modeling as essential to validating that we've got them right. Obviously at Los Alamos we use models heavily not just in safety. We actually use them to assist us in the annual assessment certification of stockpile, which I would argue is a fairly high consequence activity.

Those models are very grounded in real physical systems and real measurements and the impacts of those measurements, and I don't really view it any different. It's -- it's really -- you know, it's a wonderful capability we have to allow

us to be really smart in how we build and maintain the systems.

Ted may want to add something to this topic.

MR. WYKA: I think you summed it up, Thom. Again, we're going to -- it's sort of like a duty. We're using the information from the modeling like a feedback into our DSA and to make sure we're in a complete defensible position, and that's using all three elements, MCAS, DM core, and CFD, so multiple models factor into the situation.

MS. HRUBY: I would just add that I take your point that if the only response you get is we modeled it, and it's okay, it's frustrating. So I guess I would just say from our -- from my side that when the -- when that's the response, we'll just have another meeting to say, do we really mean this and are we sure about this, because I can appreciate, you know, the frustration on the other side, especially if you don't have a lot of insight into the accident model.

CHAIRPERSON CONNERY: Thank you. I think you appreciate the question for what it was. I wasn't trying to denigrate the model. Obviously the stockpile stewardship program is a great example of

how we use modeling for national security. And again, we have a small staff, dedicated folks who were trying to understand how it is that you're approaching these issues.

So I'm actually going to turn to Mr. Summers for the next question.

MR. SUMMERS: Thanks, Chair Connery. Dr. Mason and Mr. Wyka, you both just eloquently said how important the document safety analysis is, and as PF-4 ramps up mission work, it would be important for Triad and NNSA to update the safety analysis accordingly and to implement modern DOE standards for that analysis.

The history of making timely improvements to safety basis documents at LANL has not been encouraging in the past. For example, the last major safety basis upgrade effort for PF-4 took more than four years to get approved. The current initiative to upgrade the safety basis to meet modern standards began, I believe, around 2017. Considerable work remains to complete the new analysis, as is shown and seen here in Exhibit 20.

After Triad completes the analysis, NNSA will need to review and approve it, and then it will need to be implemented into the facility operations.

So, Dr. Mason, what has been done to overcome Triad's past struggles and challenges with safety basis document development?

DR. MASON: So when Triad first came to Los Alamos as part of the transition in 2018, actually one of the things that we heard very loud and clear from the field office colleagues at the time was there was frustration with both the timeliness and the quality of many of the submissions that we, the lab, made to the field office, actually not just on safety basis, but on a wide variety of different topics, everything from real estate packages to procurement packages to safety documentation. So that was -- that was something that we have on our plate front and center coming in.

And I'll try and tell you a little bit about how we're dealing with it. I'll leave it to Ted to assess the extent to which things have improved.

So one of the things that we did right up front was actually go through an exercise to go through the list of all of the deliverables that we had. Because, you know, one reason for things being late, and if you're scrunched for time, that often

leads to poor quality, so there's a relationship there. And so we wanted to make sure that we were tracking everything so that we could ensure that we weren't scrambling at the last minute for something that had slipped through the cracks.

The other thing that we worked pretty hard on was having a better understanding up front of exactly what the expectation was for the deliverable. I mean, obviously we have to respect the different roles for us as the laboratory, as contractors, and the field office who have, in the cases of safety documentation, safety basis, you know, an oversight and approval authority but on the other hand having a clear understanding of what is needed for them to do their job, allows us to deliver better quality documentation.

I would say that we have made progress in that regard. I think certainly we are doing better in terms of both, I think, timeliness and quality. Although, you know, our safety basis organization is young, and so we are adding new staff, and we have people who are developing, so that's why having that upfront understanding is particularly important.

I should note we have met all the deliverables associated with the safety basis

documentation for the Los Alamos pit production plutonium project. I would take that as an indicator for progress in that area.

I'll turn it over to Ted to give his assessment of where our journey is for improvement.

MR. WYKA: Thank you, Thom, speaking as field office manager as well as safety basis approval or authority, you know, Thom is right. Since I've been here, quality and timeliness of occupants has met improvement performance evaluation policy.

THE COURT REPORTER: Speak into your microphone. We're having a hard time hearing.

MR. WYKA: There were specifically 70 documents we looked at, so it's a big population. One of the things -- this is also like a partnership as well. There's partnership understanding, and there's a Federal inherent responsibility. The partnership is that our teams meet once a month, and maybe they do, like, a 30, 60-day -- they look at where are we at with all these documents, and that helps sort of with the expectation by the comments. So there's a lot of good dialogue between two teams, recognizing the specific roles and responsibilities, and it's the reason it's a partnership too, is we

have a big role in it to make sure we adequately improve those.

One of those is having the right staffing, and with our headquarters leadership we were able to actually fill up our nuclear safety staff, its full capabilities, as well as pretty much for the entire staff office. But we're also leveraging the entire enterprise. We're not here on an island. It's all about the enterprise. We use expertise across the enterprise at field office and headquarter to help us with the safety basis agreement to take a look at the quality of the documents as well. It's a team effort, partnership that's required, recognizing our individual responsibilities.

MR. SUMMERS: Thank you both for your answers.

Dr. Mason, given the complexity of the safety basis upgrade that's under way and the challenges that LANL has previously experienced with implementing new safety bases, can you discuss whether PF-4 will be operating under a modern safety basis by 2026, which is when NNSA is required or expected to make 30 pits per year?

DR. MASON: I think you have the timeline up there, so, you know, that's certainly our

objective. Obviously, you know, that gets us to the point in the middle, and then we have to see how things go in terms of approval and any feedback we get and so forth. That's what we're working towards.

MR. SUMMERS: Thank you, Dr. Mason.

Chair Connery.

CHAIRPERSON CONNERY: I think the next set of questions is from Ms. Roberson.

MS. ROBERSON: Thank you, Chair Connery. That doesn't include approval nor implementation, right?

MR. McCONNELL: So yeah, your point being that once the department -- once NNSA approves it, then we have a document that has to go back to the laboratory to train their people or revise the procedures so that the day-to-day operations are fine with that. That's part of that timeline.

MS. ROBERSON: That's the basis of the question, really, is the complete process.

I want to take a moment, and I know Administrator Hruby is going to say, didn't I already answer that. If we back up and go back over for a minute and look at the big picture and recap what we discussed so far, in just a few years PF-4

will see a paradigm shift to a large-scale production facility with the largest number of workers in history. NNSA is investing billions of dollars in production related infrastructure but has expressed reluctance to invest in upgrading certain safety infrastructure. As we discussed, a safety class active confinement ventilation system would be one of the most effective controls for protecting the public from accidents at PF-4, and yet for the foreseeable future, PF-4 will continue to rely on passive confinement strategy, which has some uncertainties.

Additionally, while we recognize NNSA is upgrading the fire suppression and other safety systems, we're concerned that the sprinklers might be less effective than predicted.

In addition to all this, we're concerned that the risks of schedule slip associated with the Savannah River pit facility, given NNSA's difficulties with bringing new facilities online, could be a factor.

In Exhibit 21, we have an excerpt from the legislation that requires DOE to produce 80 pits by 2030. The current plan, as we understand it and as you've stated, 50 of those are to be built at the

Savannah River pit facility. However, if that facility schedule slips, there could be additional pressure for PF-4 to take on additional scope.

And so just in light -- I know we asked you this at the beginning. We'll ask you again. Can you discuss why you believe that your investment in safety related infrastructure is adequate given the impending mission increase at PF-4 and the greater than zero potential of greater production stress on PF-4 with the delays at Savannah River?

MS. HRUBY: Thank you. I think -- let me -- let me just say -- let me start with this issue of production increases required at Los Alamos and then back to the beginning of your question.

We are working very, very closely with the Department of Defense to relook at requirements. This is -- this was a requirement that was set not necessarily -- not because it could be done but because it was a calculation of their needs.

We have to relook -- I mean, it's just life. There's nothing that I would rather do than meet all of the requirements, but we have to relook at it because of the issues that we've experienced. And by the way, not just -- in NNSA, but not just in NNSA. This is a very difficult time in the United

States of America to do large construction projects. It's hard to get workers. It's hard to get supplies. There's a lot of downtime for COVID. The list goes on.

So we are trying to do things at a difficult time. We're trying to be as honest and realistic as possible about what we can do and can't do and working very closely with the Department of Defense so the scenario you laid out won't happen. Because we are not -- we cannot commit the more -- I mean, in a sincere way, more than 30 pits per year from PF-4, especially as we're getting started.

So, you know, this is a work in progress. There's a lot of things, as you probably can imagine, that have to be thought about in terms of changing things and making sure our nuclear deterrent is second to none, but we're working on it very, very hard.

We are -- I mean, the statements that we made earlier on about safety and the way we're viewing it is, you know -- buy down risk that we can do in the timeframes that fit the rest of the things that we need as effectively as possible, do things that position us to do more in the future and continuously improve, and, you know, that's the

philosophy we're using.

And I don't -- I mean, I feel like we are very careful about the risks that we're accepting. We're not just saying, you know, we've got this mission to do; we've got to accept risk. We're not -- we're approaching this in, I think, a very responsible manner, but it does mean that, you know, we can't stop -- we don't think it's worth stopping for the three years or whatever would be the requirement to get to active confinement ventilation, but we want to -- but we're doing lots of other things to make sure things are safe.

MR. McCONNELL: One aspect of the question is that the mix of things or the change, potential change of things, that would go on in PF-4 in the future.

As you're well-aware, one of the fundamental first assumptions or first datapoints of our approach is something called material at risk. So we -- we say there's this much plutonium in PF-4 available to be involved in an accident like this post-seismic fire, regardless of what activity we are pursuing to use that much plutonium, and that is one of our most fundamental controls.

As you're well-aware, we track carefully

to make sure we stay below our total material risk. If the things we are doing with that from a programmatic perspective change, then the MAR limit stays the same. So unless we found ourselves -- I'm going to point it out for you. We get an exigent condition, like with 238, that's -- the control here would be the material at risk, because that's how we get to -- going back to your last slide, that's part of all that math that ends up with a consequence number. That is how we rate that.

So we would be very -- we are currently very well-aware that -- that it's entirely likely that PF-4 is or could become oversubscribed. And what we would then have to do is decide amongst all the things that the plutonium center of excellence does, and that would fall to the administrator to decide which of those things, you know, sort of fall off if we had to make space to do more of something else.

MS. ROBERSON: Okay. Well, thank you. My next question was just to ask if you were -- we know it would buy you margin, and if you're comfortable with the decisions that have been made on upgrading systems, it sounds like the other side would be just not to do other things, you have to prioritize. I

appreciate that. Is that right?

MS. HRUBY: Yes, and I just want to reemphasize that this decision is being made in -- these -- these decisions about priorities will be made and are being made in consultation with the Department of Defense and other important partners, right, so that we're balancing all the various things, that we're not -- we're trying not to be surprised.

MS. ROBERSON: Thank you. Thank you, Administrator.

CHAIRPERSON CONNERY: Next question to Mr. Summers.

MR. SUMMERS: Thank you, Chair Connery. Mr. Wyka, in our 2019 letter to the Secretary of Energy, we identified safety system deficiencies and weaknesses in analysis that support PF-4 safety basis. This letter was issued to help aid the development of the upgraded safety basis.

First question, sir. Your predecessor directed Triad to consider the board's concerns and respond in writing back to your office, the field office, as you see in the expanded text identified here in Exhibit 22. Would you please discuss what actions resulted because of this letter?

MR. WYKA: Thank you, Mr. Summers, and I'm not specific. I'll probably have to get back to you for the record about specific items with respect to this letter.

Just as a matter of practice, whenever you receive any letters, information, whether it's from the resident inspector or board letters, simple examples like the transportation safety documentation for on-site as well as the letter that was provided for, you know, Idaho heat sources, and I'm sure something like this letter, this is something I'll pass out to the staff and partners as well. What things are we missing? Are there any safety issues here we need to address?

These are documents, letters that, you know, we give them out there to see what realtime improvements we can make. I'll get back to you for a record on what the actual changes were made with respect to this letter.

MR. SUMMERS: Thank you, Mr. Wyka.

And the second question, the board has recently communicated advice in other regards in other letters regarding Los Alamos, of course. For example, on August 11, 2022, provided advice on actions that could be taken in order to strengthen

the safety posture during the heat-source plutonium that we discussed several times now earlier.

Would you discuss any actions that you have planned regarding the advice in regards to heat-source plutonium?

MR. WYKA: Thank you, Mr. Summers, that was the example of the letter I was talking about as well. It was provided to the department as a -- as a letter of information, reporting action, but it had a lot of good information in there. So I directed my staff, working with the LANL team, to go through it, go through each paragraph of the letter and figure out what changes, you know, we should be making to processes we have in place for handling of the, you know, heat-source activity. I think we probably discussed controls we have in place, what are we missing.

And with that letter there was a lot of -- there was dialogue between the staff, your staff and my staff as well, identifying -- and I can provide the specific examples and put it into the record. We did make a few changes to your processes as a result of the information provided by the board.

MR. SUMMERS: Thank you, Mr. Wyka. Certainly appreciate receiving that.

Over to you, Chair Connery.

MS. ROBERSON: I was going to do a follow-up, make sure we're clear. We know this is an outstanding reporting requirement, but we're interested in it not just because it's an outstanding reporting requirement to us, because it's a reporting requirement to you, and so that's what we're trying to understand. Maybe we haven't gotten a response yet, maybe you had, so we appreciate the follow-up.

CHAIRPERSON CONNERY: So we actually are coming to conclusion of this session. Going to give a little bit of a break. Before we break, I just want to let you know that the nature of our questions is not to frustrate you. Clearly, they do. We have sent letters for a long time to Los Alamos, to your predecessors, about things that concern us. We don't always get answers. We understand that we're not always going to get answers we like. We understand, Administrator, that you have a number of things that you're balancing when it comes to requirements that are put upon you by somebody else, and we have the luxury of only looking at safety, and there aren't very many of us. We are currently at 112 individuals that work the

entire complex. So the frustration level that you might hear from our side when we ask for questions, and we're asking honest questions to get at issues, we don't get the same response from the NNSA side of LANL that we might get from the EM side of LANL.

For whatever reason, it takes us a long time to get what we need and understand, and the more we understand, hopefully the less questions we ask. It's not designed to frustrate you. We know you have an important mission to do.

But when you say, Mr. McConnell, that, you know, you'll -- the MAR conversation that we just had, well, for years we've been saying you have gloveboxes that are at risk because you don't seismically qualify them, so it's really frustrating to say well, we'll figure it out if we have additional mission that create additional MAR.

We already know that there are things that you could do now to alleviate that situation later on, so that's -- if you hear frustration, that's what you're hearing from our side.

I do want to make sure we have a time for break. My suggestion is we reconvene at about five minutes to 6:00, and we will continue with the rest of the panel and the same for -- obviously return

back at five minutes to 6:00, and we will resume. Thank you.

(Recess was taken from 5:37 to 6:01.)

CHAIRPERSON CONNERY: So I'm going to apologize. I'm a native Bostonian. I've been told I speak far too quickly for the court reporter, or stenographer, and for most of the audience, so I apologize, and I will endeavor to speak more slowly. If there's anyone in the audience who feels like I'm speaking too fast, just do this, and I'll slow down. I appreciate that.

And then for my colleagues, and particularly Mr. Wyka, I think we're having a hard time hearing you, so make sure the mic is close to you, because it's not just for our live audience but for our studio audience to be able to hear you clearly.

Welcome back, everybody. We're going to call everybody back to order for what we're going to call session three.

I do want to recognize -- I believe we have somebody from Congresswoman Fernandez's office, Matt Miller, the field representative is here. I want to recognize Matt. Thank you for coming out, and to Congresswoman Fernandez's for her attention

to these issues. It's really important. I appreciate you being here today.

So we're going to continue our discussion with the NNSA panel, but again, in order to get some clarity and background, we're going to start with Mr. Roscetti, our technical director, to give an opening statement to lay groundwork for this next session.

Mr. Roscetti.

MR. ROSCETTI: Thank you. Appreciate the opportunity to continue by background information to assist the public in understanding today's hearing. I'll also remind everyone of our acronym list and glossary of key terms for today, which we have provided on our website.

I will continue to discuss active confinement ventilation. The purpose of an active confinement ventilation system is to ensure nearly all airborne radioactive particles are captured before the air is released outside.

Exhibit 23 shows a simple diagram of an active confinement ventilation system with fans in the center that draw facility air through high efficiency particulate air filters or HEPA filters. The fans can expel the filtered air up the stack at

the far right. Other systems needed to power and control the system are shown in the background as well.

I explained earlier that one way to classify a system resilience following an earthquake is performance category, and I described the difference between PC-2 and PC-3. Certain components of PF-4's active confinement ventilation system are only designed to PC-2, preventing the entire active system from being qualified to the more stringent PC-3 level. This means that the passive confinement system, which does not include fans moving air through the systems, remains the primary engineering control for the bounding accident.

As was discussed in the last session, this approach is less reliable because it is highly dependent on how long the building doors to the outside remain open.

A safety class system which is necessary to protect the public from potential accidents typically requires its components to be qualified to PC-3. Additional features are also required for safety class system. One, redundancy where there are multiple components in case one were to fail.

Two, diversity, where there are different types of components such as having a mix of electrically and air-driven activators. And three, components to minimize the risk of damage from the same event. In this way, any single failure would not cause the entire system to fail.

However, as I mentioned earlier, portions of the active confinement ventilation system are neither safety class or PC-3 from the bounding earthquake, the topic board will explore later.

In addition, some of the safety systems in the plutonium facility contain original components from when the facility began operations in 1978, while some major components such as portions of the facility control system and the uninterruptible power supply, or UPS, have been replaced or upgraded recently. Other components such as dampers, ductwork, and cabling are being slowly replaced on a piece-by-piece basis.

Without comprehensive upgrades, the overall system is still reliant on PC-2 equipment. This is a concern, as a safety system is only as reliable as its weakest link.

In recommendation 2020-1, the board recommended the department develop an integrated

approach to maintaining aging infrastructure. As I discussed before, trying to address some aging component issues with preventative maintenance, for example, Exhibit 24 shows a ventilation fan slated for replacement. Aging management is about ensuring the components are replaced before they fail as opposed to allowing them to fail and losing production time while waiting for replacement.

Though you may not think about it every day, this is an important concept in everyday life. For example, the owner's manual of your vehicle has a schedule that tells you when preventive maintenance should be performed to ensure reliable operation. This includes oil changes and transmission fluid changes to maximize the life of the engine and the transmission. In addition to more complex maintenance such as replacing the timing belt and sparkplugs to prevent engine failure, commercial nuclear power operators purchase parts with known service life requirements. They routinely test sample items from manufacturers using strict quality assurance requirements.

Since many of these requirements are the same or similar for defense nuclear facilities, DOE can obtain manufacturer specifications for many

components. As with automobile maintenance comparison, such activities can be a short-term cost but a long-term efficiency. If components are replaced before they fail, operational disruptions can be avoided, and accidents can be prevented.

Finally, I will a draw your attention to Exhibit 25, the board's Technical Report 46 issued in 2020. Amidst discussion about production the radioactive waste it generates should not be forgotten.

The picture on the left shows the potential consequences of not understanding the contents of waste containers. In 2018 a number of waste drums at the Idaho National Laboratory overpressurized and ruptured after unforeseen chemical reactions burst the drums.

One of the elements of the technical report that Mr. Summers discussed previously was the importance of appropriately prioritizing storage locations based on risks associated with each container's contents.

The board staff shares the concern that outdoor storage locations do not provide additional protection for release of radioactive material from a waste container. In my opinion, if space is

available in more protective locations and -- then the use of these locations should be prioritized as more waste is generated.

I know the board members plan to explore these important topics as well as the additional elements of Triad safety management programs that touch on workers in this session. This concludes my remarks.

CHAIRPERSON CONNERY: Thank you, Mr. Roscetti. We're going to start with Mr. Summers to ask the first question for the session.

MR. SUMMERS: Thank you, Chair Connery. Dr. Mason and Mr. Wyka, in the previous session we discussed NNSA's decision to not pursue a safety class active confinement ventilation system. A safety class system would reduce the consequences from a bounding earthquake.

Now we'd like to discuss whether NNSA can upgrade the existing active ventilation system to be more robust even if it would not be safety class.

First, I have three questions. The first is to Dr. Mason. Dr. Mason, as our staff and as I understand, many major components that are shown in Exhibit 26 will be fully seismically qualified, but the interfaces and the support systems contain weak

links. For example, cable conduits for electrical power and air systems to actuate dampers. They may not be similarly qualified.

Following your planned upgrades, will the active confinement ventilation system function after the PC-3 earthquake?

DR. MASON: So the active ventilation system already in place, which is safety significant, not safety class, already has significant redundancy and actually is highly reliable. We see that manifested in the operations of the plant.

The upgrade strategy that you mentioned to the ventilation and support systems focuses on replacing major components such as some of those illustrated in that flow diagram to achieve a more robust ventilation system. This is going to be done by proactively managing obsolescence, increasing seismic performance, and in some cases adding further redundancy.

In some cases, those actions have been taken. As components are replaced, they're seismically protected, secured to safety class standards. Although, as you pointed out, the fact that individual components may be qualified to

safety classes does not mean the entire system meets that specification. It provides for a more robust system able to withstand greater insults.

We are also pursuing additional redundancy in facility uninterruptible power supply and backup diesel generator support systems, since those can be important for operating through upset conditions.

So during a design basis PC-3 earthquake, the ventilation is not expected or required to operate because of the fact that we do rely on this passive confinement system, and the -- that means that during a seismic event of this magnitude there may be some systems that may fail or be otherwise compromised, and the -- that's why we have these other steps to mitigate the offsite dose.

And in this scenario, however, the facility would still be maintained at negative pressure with respect to the outside environment. If, in a PC-3 earthquake, there was a total loss, a power instrument error, for example, there would be no fans running, but the facility would be in passive confinement mode breathing through intake and exhaust HEPA filter plenums to achieve equilibrium with the outside environment.

So hopefully that partially addresses your

question. Ted may want to add some more.

MR. WYKA: Really just amplify, you know, our upgrade strategy is managing obsolescence and eliminating single-point values, as Thom mentioned. Even as components are replaced in space, a lot of the figures that you have identified there, they are seismically tested and to class standards. We're doing upgrades in a lot of areas to the structural ventilation system, control systems, generating diesel power supplies, and exhaust and bleed fans.

Redundancy is being pursued, and UPS and backup diesel generator systems, as Thom mentioned, and in, you know, electrical cables and ductwork have to be considered. I keep reaching to the revised DSA. That is the document that is going to be used for modeling and identifying what -- you know, the controls we have in place.

As Thom mentioned, PF-4 meets safety class packed passive confinement following an evaluation-based earthquake, and that could contain and confine materials within PF-4.

MR. SUMMERS: Thank you, Dr. Mason, and thank you, Mr. Wyka.

The next question is addressed to Dr. Mason, please. Now I would like to discuss the

improvements to system reliability. PF-4 has experienced recent failures of damper actuators which resulted in roughly three lost production days in 2022.

Can you discuss, Dr. Mason, opportunities that add redundancy, diversity, and separation to achieve benefits to both safety and operations?

DR. MASON: Yeah, this is a -- this is a very important topic for us, particularly if we're to meet the mission objectives that have been stated not just for pit production but for all the plutonium mission.

As a result of investments that pit had to make over the years to this point, we are seeing improved operational performance of many of the systems, although we still have work to do to get all of them to where they need to be.

Just to sort of highlight this, I would like to make note of the fact that in FY21 we had 19 production weeks for pit production inside the plant. In FY22 that increased to 30 weeks of production time. And in some sense, one can view that as an aggregate measure of a number of things that are actually very relevant to safety and security, because if you look at the origin of

downtime that prevents production activities, you know, there could be a range of things ranging from the length of time to do inventories on nuclear materials, which is obviously an important security-related thing, to things such as the ones you mentioned.

So the fact that we've been able to improve from 19 weeks in '21 to 30 weeks in '22 is an aggregate measure of that improved operational performance. We are not yet at our goal. We want to get to 40 weeks, so there is more work yet to be done.

I think we're seeing the benefits of investments that are being made in those systems over the years to this point. In some cases we have had instances where systems that we were planning to replace failed before we replaced them, and so that just highlights the need of sustaining this effort, which I think both Ted and I spoke to a little bit in response to the last question in terms of adding additional redundancy to things like, you know, uninterruptible power supplies, putting in place more robust and seismically tested components so they're less prone to failure, and quite frankly, in many cases, specifically replacing equipment that's

old that may have been in place in the facility since the time it was constructed.

And I think we heard mention of the car analogy. You know, there are some components of the car that one needs to plan for, and replacement, you know, not because they're failing in an unanticipated way, but because they're simply approaching their engine life. That's what we mean when we talk about using obsolescence. That's one of the measures of those replacements, is getting new systems in place hopefully before the failures occur.

MR. SUMMERS: Thank you, Dr. Mason.

Ted, did you want to add something?

MR. WYKA: Yes, just add to that, you know, from the field office perspective, Thom is right in the metric production time, which is pretty remarkable from 19 to 30 weeks. Lot of contributing factors. But in terms of aging infrastructure and modernization, one thing that we work with on the LANL team --

AUDIENCE MEMBER: Sir, could you speak more slowly?

MR. WYKA: Yes, ma'am.

We have system engineers that are assigned

to your nuclear safety systems, and they track system performance through the system health reports, identifying certain spare parts, and overseeing maintenance on the systems. They try to stay in front of the (indiscernible ) systems, including a UPS, criticality alarm systems, confinement doors, and instrumental controls with their safety engineers assigned and their work in progress include, like, the fire alarm, facility control system, fire suppression and diesel generator. It takes not only replacement and upgrades and assigning personnel safety engineers to track the systems and help with the systems.

MR. SUMMERS: Thank you for the further amplification. My last question on this topic is to Mr. Wyka. What are your thoughts on addressing the weak links so that the entire system can survive the bounding PC-3 earthquake?

MR. WYKA: I think it's looking, again, at upgrading systems, you know, doing the things that we've already done and doing, which includes, again, structural ventilation systems, control systems, generator and diesel power supplies, exhaust fans. That's an incremental improvement.

I look at it sort of as an incremental

deliberate improvement, recognizing that we're never to a PC-3 safety class until we replace all the components, but as we get to the point of replacing some of that ductwork, those electrical components through our DSA, upgraded DSA, we'll look at, you know -- improve upgrades in those areas to get to that -- you know, to get to that incremental point where I think we all need to be.

MR. SUMMERS: I appreciate the response. Just one follow-up question. From a prioritization standpoint to get the most safety -- the safety advantage out of those investments, if you will, in those areas, as you incrementally upgrade the safety systems, have you taken a look at prioritizing what areas and if it would be advantageous to prioritize first from the weakest-link safety perspective?

DR. MASON: As I mentioned, we are kind of trying to systematically work our way through the systems and have identified components that we intend to replace. And part of the objective is actually to get the most immediate return on safety investment rather than, you know, waiting for some grand thing that could take a long time to realize.

I should note there are other constraints that we do have to factor in in terms of the planned

work for the facility and potential interference and so forth, so certainly we prioritize in terms of getting our maximum bang for our safety dollar, but we also have to integrate that into the overall schedule.

One of the things we've been working on for the last several years is actually integrating all of the schedules for all of the activities of PF-4, the upgrades, the production work for pits, plus the other important mission work that we do, and not forgetting that actually one of our products is waste, and then we also have to be moving waste out of the facility.

So it's sometimes a bit of a dance to get all that right, but we're trying to prioritize the safety investment to those that deliver the maximum benefit in the nearest timeframe that we can.

MR. SUMMERS: Thank you, Dr. Mason. Thank you, Mr. Wyka.

Chair Connery.

CHAIRPERSON CONNERY: Thank you, sir.

Ms. Roberson.

MS. ROBERSON: Thank you, Chair Connery. Make sure I'm speaking loud enough too. If I can quickly, sir, if I can follow-up with a question

from the last session regarding, I guess, what I characterize as assurance that the passive confinement systems approach was active.

Dr. Mason, you and I had an exchange about differential pressure moderating, which you indicated does exist. Is that monitor seismically qualified? Will it survive the earthquake?

DR. MASON: I think that's one we should probably get you more detail in follow-up for the record.

MS. ROBERSON: Thank you. And then the other one we talked about was the door closed. I want to make sure you and I were talking about exterior doors and not interior doors and I understood correctly the last person -- known last person out closes the door. That was the assurance?

DR. MASON: Yeah, we are talking about the exterior doors that are important for this calculation. We're talking about for the emergency. It's part of the emergency response procedure to verify closure of those external doors.

MS. ROBERSON: Thank you, sir. Now to my actual question. A picture of cable trays and electrical conduit is shown in Exhibit 27. These connect the facility control system to fill

equipment such as sensors and dampers. The facility control system is key to the functioning of the ventilation system. Without it, the ventilation system will not work. Triad is working to replace the logic controllers for the facility control system, which is a safety significant system. We understand Triad conducted or concluded that its effort did not need to follow DOE standard that covers safety significant systems known as DOE Standard 1195 because the scope of the upgrade was limited.

However, future efforts are planned to replace sensors and actuators, and in total, when you put the pieces together, these upgrades constitute a full safety instrument system for which the standard was intended to apply.

So I wanted to go to you Mr. Wyka, since you agreed and approved. Why not apply the standard to ensure the integrated safety system is designed to provide high reliability in accordance with DOE directives?

MR. WYKA: Thank you. You know, that's -- you know -- you know, that is a standard I would look to and apply, you know, and I'd probably have to get back to you on the record for specific

circumstances for this issue.

MS. ROBERSON: I appreciate that. Then I won't ask you my second question, which I assumed you were going to say you just weren't going to do it. So I appreciate to hear back from you, and we'll wait for that. Thank you.

Chair?

CHAIRPERSON CONNERY: Oh, we just want to make a comment on the picture, is changed to a facility control system. It's not a cable. We didn't mean to confuse anybody.

MS. ROBERSON: That's why I have glasses.

CHAIRPERSON CONNERY: Aging infrastructure. We need glasses.

The next question is moving on to other safety system infrastructure, and so we're going to go back to talk about fire protection.

And, Dr. Mason, the lab started upgrading the fire suppression system in PF-4 to safety class about a decade ago. Currently, several facilities are connected to the same fire water loop as PF-4, shown in Exhibit 28. I'm going to look up to make sure that that's what that shows. Yes. Okay. Because these facilities all have different seismic pedigrees, we can't be assured of the whole loop's

performance following the bounding seismic event. In other words, there might not be enough water for PF-4 because of pipe ruptures in these other structures.

So can you discuss the current schedule and any concerns with completing the work on the sprinkler piping on PF-4 establishing a new fire/water supply route to separate PF-4 from the non-seismically qualified buildings and implementing these upgrades in a revised safety analysis.

DR. MASON: So the work to increase the seismic performance of the fire suppression system is important in terms of realizing the significant off-site dose reduction. The removal of nonseismic qualified buildings is going to be performed in three phases.

First phase is installation of a high-pressure feed, then waterline installation to the west to support program expansion, followed by waterline installation to the east to support some of the security components. These projects are on track to meet our deadline for the 30 pit per year production.

And the status of the individual phases, phase one design is complete. Execution contract

has been awarded.

In phase two, the design will be completed in FY23, and Phase III is still pending funding. We're under a continuing resolution now. I don't anticipate any problems. But, you know, we have to respect the power of the purse. So that's a little bit where things stand in terms of those, but it's definitely our intent to move those nonseismically qualified systems off to prevent the scenario you just identified.

CHAIRPERSON CONNERY: I appreciate that. I believe it's good news we are moving ahead on those projects, and it is obviously an illustration of how we're trying to catch up to the production by upgrading these systems as we are also moving forward with the activities that you have to do to meet your requirements with regards to production.

We do believe that the seismically qualified pressing buyer -- sorry, seismically qualified fire suppression is a good thing for PF-4, as we discussed earlier. We don't know that's necessarily going to be sufficient. So necessary but not necessarily sufficient.

With that, Mr. Summers?

MR. SUMMERS: Thank you, Chair Connery.

I'd like now to move to a few questions about glovebox stands in PF-4, and I'll have one question for Dr. Mason, Administrator Hruby, and Mr. McConnell. Since 2009 laboratory engineering staff have been systemically analyzing the safety systems within PF-4 to determine they can withstand the estimated ground motion during a bounding earthquake.

On the left side of Exhibit 29 we see a glovebox that is seismically deficient, which means it may be at risk of toppling, spilling, and impacting plutonium during a seismic event.

On the right side we see a new one, new glovebox that is qualified to withstand the bounding earthquake. The differences in bracing and footings are obvious.

Triad has made progress with glovebox analysis, but some of the gloveboxes do not meet the required seismic capacity. Many of these gloveboxes support fire hazard involving heat-source plutonium, plutonium oxide powders, or plutonium solutions. My first question is to Dr. Mason.

Dr. Mason, can you speak to how many gloveboxes do not meet the required seismic capacity and how many remain unanalyzed at this time?

DR. MASON: We can provide the exact numbers for the record, but I would say this is an area where we have made significant progress, but much more remains to be done. Most important, gloveboxes have already been upgraded in terms of the release hazard associated particularly with molten plutonium operations. And in addition, with the work commencing on the LAP4 project, as it's known, and some related major items of equipment, we now have a very full pipeline of new gloveboxes that will be installed in PF-4 that will be designed to meet or exceed size and performance requirements.

I would say for the next four or five years we will be designing, procuring, and installing gloveboxes at about the fastest rate we can accommodate.

So at this time it's -- it's -- it's more a question of the industrial capacity for actually design and procurement that is really the limiting factor.

As you noted in the photograph, the modern gloveboxes are built to modern standards. They are more robust to withstand that kind of design basis event.

When we modify a glovebox design, we don't

look at the glovebox. We do an analysis for the whole line, and if there's a need to perform retrofits on the balance of the gloveboxes in the line, we also do that. And so for the remaining gloveboxes, the focus is on performing the required analyses to quantify the magnitude of the vulnerability, and that will allow us to develop a strategy, prioritize further retrofits and put in place any new controls that are needed.

MR. SUMMERS: Thank you, Dr. Mason, and we appreciate your offer to work with our staff in order to get a number that can be added and entered into the record.

My second question is for Administrator Hruby. Ma'am, NNSA has continued operations with deficient glovebox stands, as I'm informed, since at least 2011. Given that PF-4 has many decades of service ahead, would you discuss how long NNSA is willing to accept these deficient conditions, ma'am? Thank you.

MS. HRUBY: Thank you. This is one of the sort of ironies of the situation we have, is that because of the mission demands, we now have the resources that are needed to improve our safety, and for many years, resources -- not while I've been

here, but in this job -- but the resources were not there to do all of the safety upgrades that -- that, you know, we would be -- would be good to do.

We have this unusual situation about gloveboxes that Thom alluded to. We're actually -- we have a glovebox working group because there -- we are pushing the demand for glovebox manufacture, you know, the -- to its limits, and we're trying to work with glovebox manufacturers in the United States to increase their capacity to meet our demands for the project here at Los Alamos as well as Savannah River and other projects, because pretty much everything we do is in gloveboxes, so we're working -- we recognize this. We're actually trying to prioritize not only within facilities but across the complex and working with vendors to increase capacity on gloveboxes.

I -- I don't have a number for you of when we might be able to replace them all, and I am confident in the facilities where we're not doing mission critical work right now, we haven't yet obtained the funding, but I appreciate the question, and it's obviously something that we need to continue to do. Thank you.

MR. SUMMERS: Thank you, Administrator

Hruby. My third question is for Mr. McConnell. Many of the deficient gloveboxes are not used for pit manufacturing and will not benefit from the investments that NNSA is making for that program. For example, there are currently about 40 heat-source plutonium gloveboxes that also need upgrades. These boxes support NNSA's programs and NASA. Do these customers help fund upgrades for these deficient gloveboxes?

MR. McCONNELL: So as you mentioned, some of those customers are internal NNSA customers who do fund and support the overall operations of PF-4. The other customers external to NNSA pay through the charges that are set up, the space charges -- you can get specifics from the laboratory -- for the cost of operation.

One of the challenges we have is to figure out how to amortize the cost of upgrades to people who right now are users, and so they cover the cost of use, but later on if we decide that we need to upgrade a glovebox, for example, they may not be doing programmatic work on that box, but there's still residual left there.

The answer is yes for some, but there is a challenge and a gap that we need to figure out how

we can account for the need to do these upgrades to all our boxes. But again, this is another one of those ironies that the boxes that are in use are the ones for which there's funding, but since they're in use, there's a programmatic integration to take them out of service.

The ones that are not in use we could, from a safety perspective, update more easily. They're not a high priority because there's not a hazard because they're not in use.

So we need to figure out as part of our aged and part of our overall facility -- at the end of the day, NNSA is responsible for PF-4, and if a -- an event happens in an idle box used by somebody else that's going to impact pit production because it's going to be production impact, we own that risk at a fundamental level, and we need to -- we do take that into account.

The issue, as I said is about trying to figure out how to -- how to prioritize when the things that are most active are most active because they're associated with our most critical ongoing mission. So there's a -- a chicken and an egg problem there.

MR. SUMMERS: Thank you, Mr. McConnell.

Chair Connery.

CHAIRPERSON CONNERY: I just want to follow-up on that. You said two things that sounded contradictory. I understand NNSA's needs and the need to replace gloveboxes. I understand the demand for the whole glovebox working group situation; however, when you're talking about something -- say NASA's mission. As a taxpayer, if you're talking about a deterrent versus NASA, that's a different scenario. You're accepting the risk for NASA for not upgrading their glovebox even though that could hurt the mission of a deterrent. That doesn't make sense to me.

MR. McCONNELL: Thank you for letting me clarify. I think I'll turn it over to the laboratory better than I. 238 is an asset. The capability to do 238 work -- there's a room in PF-4 that's specially designed to the 238 work. There are multiple customers that do 238 work. Sometimes it's us; sometimes it's NASA. And so we need that operation to be able to function to do our work, and we need to make sure we can mitigate any potential risk, because it's opposed to our work, but our funding models fund day-to-day operations. They don't fund recap -- we don't fund recapitalization

of our infrastructure through what would, in this case, be an SPP, a strategic partnership plan. So that falls to NNSA as the landlord to do the infrastructure modernization. I'll let the laboratory elaborate.

DR. MASON: Yeah, there is a challenge in some -- this is not unique challenge to Los Alamos. There are a number of nuclear facilities across the complex that are multiprogram in nature, and in fact, for the -- for the PU-238 for NASA, that work is done at Oak Ridge National Lab, at Los Alamos National Lab, and at Idaho National Lab.

And I know from prior experience the challenges at Oak Ridge is basically arriving at an interagency deal as to who's going to pay for what. And it does take a little bit longer. It doesn't mean you don't do it. Certainly in the end the steward of the facility office assigns -- in the case of the office of nuclear energy, in case of Idaho NNSA, in the case of Los Alamos, has the ultimate responsibility for the facility. But it -- it just takes a little more time to work out some of those arrangements when there are multiple government agencies involved.

And I'm confident that we can figure out

how to get that done, but it will -- sometimes the difficulties extend beyond the agencies, because we have different committees of jurisdiction and Congress and different -- energy and water versus CJS probably for NASA, so it's work that needs to be done.

CHAIRPERSON CONNERY: Appreciate that. That sounds very complicated, and clearly it's an issue since 2009 that we've identified as a problem that's taken a long time to address.

Ms. Roberson.

MS. ROBERSON: Thank you, Chair Connery. The laboratory does have a history of pushing back safety-related upgrades.

While we're talking about upgrades, as shown in the table Exhibit 30, many of the upgrades keep slipping to the right. For example, in 2011, the fire suppression seismic upgrades were to be completed in 2013. That has slipped to 2026 in the latest estimates.

At the same time, Triad is trying to accomplish a tremendous amount of construction work at other systems across the lab. I recognize probably only Mr. McConnell has been around for that long, but I'd like to ask you, Mr. Mason, what do

you believe are the fundamental causes behind these delays?

DR. MASON: I guess the first thing I'd like to point out, recently Marv Adams, who works for Jill, as head of defense programs had occasion to give a talk where he was saying he was eagerly looking forward to the point in time where he had been able to tell people he had pulled the schedule to the left.

I guess it's our indication, as far as seismic upgrades, to pull things to the left. Hopefully shifts are not always in the same direction. You know, there -- there can be a number of reasons that things take longer than one would like, and I think we've experienced all variants of those reasons.

You know, usually, it -- there's a timeline to get funding. As the administrator mentioned, at the moment we're experiencing a rather difficult environment in terms of workforce, and I would say at the moment, rather unusually, at Los Alamos for our work in PF-4 we are primarily not funding limited. It pains me to say that as lab director. I have been trained to say I need more money, but in this particular case, at least right

now, we are more constrained by the capacity to execute the work, which gets to things like the availability of craft labor, the industrial capacity. We talked about the glovebox working group and so forth.

So at the moment that is more of what's driving the timelines in contrast to probably all of recorded human history up to this point where we would be able to point our fingers at funding being the major problem.

MS. ROBERSON: So are there things you can do or plan to do to address the shortage of craft workers?

DR. MASON: Yeah, this is a particularly important topic for us right now, and we have already been taking steps to try and alleviate the pressures. We saw -- actually within the last year we've seen an increase in attrition rates that we are experiencing, and so we have taken a number of steps to try and mitigate that, not just with the craft workforce but for the workforce as a whole.

We have been able to get approval from NNSA for some stipends, additional stipends for high-demand skills, things like electricians that are particularly in demand in New Mexico.

One of the challenges we have is oil and gas prices are high. The Permian basin is pretty lucrative work when you're a pipefitter. I do say we enjoy a good relationship with the New Mexico Building Trades Council. They have been working with us on some educational programs with area high schools, where we can get access to students who have an inclination to working with their hands and interested in pursuing the skilled trades, and that takes the form of an apprenticeship program with training provided by the New Mexico Building Trades program and apprenticeship working at the lab.

We're trying to develop the pipelines regionally, since most of that craft workforce is regionally recruited, and work with the educational institutions and community colleges to help us secure the workforce we need.

The good news is some of those steps are starting to show positive results. We have reversed the trend where our craft numbers were declining, and for the last six months they are headed back up. I think now, for the first time ever, I think the last weekly report I saw we were about 1,300. We still have a couple-hundred more to get in place to execute the work program ahead of us, so we're

looking at more innovative things that we may need to do, for example, in the area of transportation, but that's work yet to be done.

MS. ROBERSON: Thank you, sir. We wish you success. Any follow-ups? Okay.

For decades, the commercial nuclear power sector has qualified its equipment to ensure the functions for a defined period. This has benefits of increased reliability and focused maintenance and avoids the run-to-failure mentality. This does not seem to be the case at PF-4.

For example, as shown in Exhibit 31, NNSA's own investigators wrote that insufficient inspection, and I quote, coupled with a run-to-failure mentality, end quote, led to significant risk to workers.

Picture in Exhibit 36, the glovebox was in operation until an unused sample board failed and led to contamination.

Additionally, aging management is a key part of the board's recommendation 2020-1. In the recommendation, the board expressed concerns whether DOE can still safely operate and maintain aging facilities because safety systems may degrade and not be able to reliably perform their safety

functions.

So, Mr. Wyka, NNSA is investing considerable resources to rejuvenate the safety system infrastructure at PF-4. What are your thoughts on adopting a formal aging management program such as establishing qualified equipment pipelines to mitigate safety factors that could create safety issues and disrupt mission work?

MR. WYKA: Thank you, ma'am. Yeah, no, I think that's really important. You know, with aging infrastructure and with the issues that, you know, like what's identified in this, what you pulled up, work-control issues, work-site activities, as well as system configuration of doing the work that was designed to do, I think it's critically important that we do continue to make improvements, you know, in that type of planning.

MS. ROBERSON: Okay. Thank you, sir. Well, Administrator, I just put my two cents in. I think we are really appreciative of the leadership role NNSA has taken in the implementation of this element of our recommendation, but more importantly, we certainly hope NNSA see the benefit from the operations in the near-term and long-term, investing in something like this.

MS. HRUBY: You can be sure we do. One thing that hasn't been said yet that may be Thom can elaborate on a little bit is he and his -- he has changed his team to put people in place to pay more attention to things like this, different leadership.

And it might be worth, Thom, just explaining some of the changes you made in terms of leadership and responsibilities to pay attention to integrated operations and the safety systems.

DR. MASON: This was actually -- this was actually an important element of the proposal that we made to manage Los Alamos. And the -- probably the most relevant piece that was part of that proposal for PF-4 was actually change the operating model for the facility, and this was based on experiences that I had in my prior roles in Oak Ridge where I'd been responsible for the high-flex isotope reactor and the spallation neutron source, which is a large accelerator facility with a target that has an inventory equivalent to a hazard category 2 facility, although it's regulated under the accelerator order. And in both those cases, we found very significant benefits from having a more integrated management model.

And by that I mean for our standard kind

of lab spaces and office spaces, we operate under a landlord/tenant model. There's a facilities organization who operates those buildings, and there are researchers and staff who occupy those buildings, you know, as tenants. And, you know, there's an understanding between the landlord or the tenant of, you know, how much space charge you're paying and what services you get provided. There's not a need to really tightly integrate those things, because, you know, if you're in an office space, an office space is an office space. The hazards are quantified and don't depend on what your job is on Tuesday versus Wednesday.

For these highly complex integrated facilities like PF-4, that model, in my experience, really doesn't work very well, because the work that you're doing in the facility is an integral part of the hazard. You cannot separate the work at the facility from the hazard.

And so we created this organization, the associate laboratory director for weapons production, who has both the operational responsibility for the -- for the facility and is responsible for the work that will be going on in that facility, whether it's pit production or the

PU-238 is another production mission.

The work that we do for ARIES is not a production mission, and that, I think, is, you know -- if you -- if you distribute that responsibility, it's possible to operate well, but it's a whole lot harder, because now you've introduced additional interfaces and structural barriers between the -- the -- you know, the work that's being done and the safety work that needs to be done and upgrades and so forth. So that was a very important piece, and I think it has led to some improvement in operations.

Another change we instituted, more recently recognizing the large-level investments that's needed to get the infrastructure to where it's needed to be, we created within our weapons program organization a directorate for plutonium infrastructure.

Historically, the way the work was done in the facility was we had an organization that did capital projects, and they did all the capital projects, whether it was a glovebox in PF-4 P or replacing a small building, a warehouse at the firearms site. And when you had a small volume of work, you know, it made more sense to have a sort of

centralized organization that did everything.

Given the volume of work we have associated with the plutonium infrastructure, we felt it merited a dedicated organization where that is all they do. They don't have to spend part of their day worrying about the warehouse being constructed in the back-40 for the high-explosive programs. There's someone else that will worry about that.

In particular, since they have responsibility for all the infrastructure work in the TA-55 area, that allows us to better integrate the planning, because there are multiple funding models for all of that work. We have major items of equipment being funded by the programs. We have something called CMRR which is making investments in, for example, upgrading the ROO-lob facility to become a HAZMAT 3 nuclear facility. We have LAP4, which is the largest line item. All of that work is taking place in the same space with the same trained workforce with the same interface with production activities.

There are a number of organizational steps. The most important thing is actually not the org chart. It's who are the people that you

populate in those positions.

And, you know, we have re -- we've tried hard to blend people with a long experience at the lab who know all the nooks and crannies of that facility, because there is a lot of history there with people who have experiences from across the complex. Some of the work in PF-4 is actually more akin to the EM work, because the first part of that project is D&D, the removal of the old gloveboxes, so we brought in people from the EM program that have that experience.

We brought in people from the commercial nuclear industry who have experience with managing outages and major upgrades of commercial reactors. That's the closest analogy I could find to upgrading the facility while running it.

The combination of trying to get an organizational structure that doesn't make it harder, but hopefully easier, and bringing in a lot of people with good experience in other sectors to compliment the in-house larger staff that we have, I think it's helping us.

MS. HRUBY: Thank you for allowing us to do that, because I think it is the companion piece to the program, looking at hardware updates, you

know, as are we staffing, organizing for success and not just keeping a static model. So thank you.

MS. ROBERSON: Thank you all. Did you want to say something, Jim? I'm reading your eyes.

MR. McCONNELL: I couldn't add to that. That was very --

MS. ROBERSON: Thank you.

CHAIRPERSON CONNERY: Thank you. That was a great explanation about the structure of how Triad is operating.

I want to return to our Technical Report 46, which highlighted the need to have safety controls in the event of release of a radioactive material from that waste container, in particular the containers stored outside the laboratory have no such controls to reduce the consequences as it relates. Triad has made great progress in reducing how many waste containers are stored outside, as you can see in Exhibit 32.

On the left is an outdoor storage area from 2019. On the right is the status from about a month ago. This is tremendous progress. However waste generation will increase as you remove legacy materials from PF-4.

And I'll just say I walked the basement

the other day and was extremely pleased with the progress of removing a lot of that material. But as you remove the legacy materials of PF-4 and ramp up pit production, there's going to be increased waste generation.

Mr. Wyka, I want you to take a moment to talk about the efforts you've taken to date. Obviously they've been extremely successful in any future initiatives you will take to minimize the number of waste containers that are stored outdoors to preclude that type of situation.

MR. WYKA: Yes, ma'am. I will do that. I appreciate the Technical 46. I think that helped us immensely, you know, in your deliberate and long-term actions dealing with incompatible materials, and as you know, I led the accident investigation on the WIPP and understand that significantly, and it allowed us to, you know, put special administrative controls in place to minimize cheesecloth for anything that was greater than 12 molars of nitric acid.

With respect to your question on waste management, and this is an issue of partnership, you know, because that's a fundamental to pit production, is a lot of the other things that we

need to do, partly a large piece of that is handling waste, specifically TRU waste, and getting it into its proper place so that we can reduce our limitations as well as just a geographical storage location.

So this took a partnership between the entities here in New Mexico, so we formed an executive team, field office managers, myself, Mike Mikolanis in LA, who you met with earlier, as well as the Carlsbad field manager as well as the (indiscernible). Everybody was doing a great job.

It was by -- putting this team together was a way to look at where we could gain efficiency and effectiveness of the process. Statistics that used to take 500 days to get an average drum off the hill. If you look at the flow chart of the process, the drum doesn't move all that much. It's the paperwork, approvals and stuff. I think we were able to -- we're now at about 200, but to get us in pit production that needs to be in the tens of days, and that requires, you know, the leadership to look at, you know, where we can gain efficiencies and effectiveness in the process.

We had (indiscernible) review done on the process and using that to continue to make gains,

and we're seeing that. We're seeing that in the numbers in fiscal year '22. We completed 76 shipments off the TRU weights. Expectation was 70. Used to be noteworthy to get a shipment off in a week. Now we're getting three to four shipments a week.

On-site TRU inventory has been reduced from 1,340 to 890 drums. Very significant. LANL reduced the number of drums on Hank pad and 480 pad by shipping to WIPP.

We're also using that partnership to open up apertures of other waste streams, you know, like the HNO3 cheesecloth, which accounts for hundreds of drums up here. We're about ready to get approval of those as well as classified shipments. So it's that continuous partnership.

We meet on a monthly basis, the executive team, helping the people. We have done good things in the respective areas, providing that intercom where we're looking out of the box where can we gain efficiencies and effectiveness of the process.

DR. MASON: If I could add one thing to that. This is an area where working closely with our environmental management colleagues has been important. One of the things we've been able to do

is combine waste shipments. From my point of view, every truck is a precious resource, and we want to make sure that they are fully utilized. And sometimes by blending waste shipments between the EM legacy waste and the waste we're responsible for, we can get better utilization of that important resource.

CHAIRPERSON CONNERY: Thank you, Dr. Mason. I want to mention, since you weren't here for the earlier conversation, we had a similar conversation with EM, and we applaud the collaboration between all of the organizations to work on the waste management, and as you said, every shipment off of the hill, regardless of where it comes from, is important.

The citizens with whom we met over the past couple of days expressed some concerns, and I wanted to alert you to them. They don't want newly generated waste to replace the removal of the legacy waste.

I think Mr. Mikolanis as well as his team as well as you all made it clear it's about, you know, making the most of each shipment to make sure there's no empty space on those trucks when they go to WIPP.

DR. MASON: I would also say we have a shared fate with that program. We have had as strong an interest in getting the waste off the hill as anyone else. Certainly, as you say, anyone living in the state of New Mexico doesn't care whether it's a legacy waste truck or new waste drum, they want to see it disposed of.

MR. WYKA: If I can add, it's a partnership with our neighbors, with the pueblos and the neighborhood communities. I, as well as Thom, spent a lot of time talking with the pueblo governors on shipments, on -- in -- and even offering training in emergency management and plans, because as partners, they would, you know, have an aide in responding to things that happen. So it's a collaborative partnership not only with the Feds but with our native communities as well.

CHAIRPERSON CONNERY: I appreciate that, and I encourage you to continue with transparency. I hope you stay for public comments. You'll hear from some of the folks about the issue.

Switching gears to the issue that Dr. Mason brought up earlier about staffing requirements, this is a challenge we talked about a little bit across the country.

Exhibit 33, you can tell that Triad has been staffing to meet the increasing mission requirements. We suspect that sometimes different mission components compete with one another for existing staff. It happens. Like I said in our afternoon session, we learned that. Increased competition at LANL, this could increase competition and may create an unstable staffing environment between influx of new folks and existing staff changing roles. Staff stability is important because it can take a nuclear facility worker multiple years to become fully effective in their duties.

And the average age of workers decreased significantly, which in some way is a good thing, but it reduces the number of years of experience as well.

So, Dr. Mason, you spoke about this a little bit earlier with regard to craft. I'd like to understand what Triad is doing to minimize staffing instability, particularly with positions that include nuclear safety.

DR. MASON: So just to sort of frame the discussion referring to this new graph here, in FY22 the number that we used for our staff is the 15,000

number that's cited there. That includes permanent, full-time staff of the laboratory. It includes the craft workforce that I discussed. It also includes integrated subcontractors like the protective force that provides the security for PF-4, amongst other things. Also includes postdoctoral fellows and students. So it's basically, you know, everyone who comes to work at the lab with the exception of, you know, construction, subcontractors, for example, are not included in that number.

As you can see, it's been growing. In fact, if you go back a couple of years, we were growing at about -- well, we were hiring about 1,000 to 1,200 people a year and losing about five to 600, just normal attrition turnover given the demographics of our organization.

Obviously, that began to ramp up. You see the budget increase, particularly in FY21. We saw a significant budget increase not solely due to the PF-4 position, but that's the largest. As a result, we've had to ramp up our hiring.

The FY22, the goal I set for the lab was to hire 2,000 new staff. We actually hired 2,077, so that was good. We actually beat the target. The thing that I did not anticipate was that our

attrition would jump from that five to 600 a year that we'd been tracking with, as I said, based on demographics, to almost doubling. We lost 1,200 people in FY22. Our net growth was 1,000. We had been planning for a net growth of 1,500. Even though we met our hiring target, we fell short of our net growth because of the increase in attrition.

The increase in attrition was not an increase for retirements. We have a good model for when to expect people to retire. We know how old they are, how long they've been at the lab. A lot of people stick around for a long time, but eventually there's grandkids and so forth, and they don't return.

The increase in attrition was predominantly in the young staff who had zero to five years. As you mentioned, that's painful for us. It takes a while for people to become effective in our environment. Typically you have to first get security clearance. And if you're in PF-4, you're in the human reliability program, and then there's specialized training that's required to become, for example, official materials handler. And, you know, those are -- these are not skills that are really taught. You know, you can't go to university and

get a degree in how to make nuclear weapons. That's a good thing. We like that that's not widely disseminated knowledge.

We invest a lot to get our staff to get to where they need. If they leave in year four, we have to start again. As a result, we've been -- this increase until attrition is not unique to Los Alamos. It's been manifested all across the NNSA. It's certainly a nationwide thing. You read about the great retirement -- or great resignation, rather, and the pandemic, and that's causing people to reevaluate what they're doing. And of course some interest in just remote work, and you can't make pits in your garage. I'm sorry. That's not going to happen. Can't do classified work at home, so forth.

So we can't necessarily completely respond to those challenges. In the areas we can respond, we're working hard to do so. We recently -- last year we implemented a new work locations policy that does allow for some hybrid and telework for occupations for where it's possible to do that.

We, together with other NNSA sites, with the approval of NNSA and administrator's help, were able to do a midyear salary adjustment which, to my

knowledge, has not happened as long as I've been in the system, which is 25 years or so. Normally there's an annual cycle. We get approval, it happens in January, and partway through the year we saw the attrition numbers. We said, we can't wait, did a midyear salary adjust. It's not huge, but it helps.

We've been able to increase the funding for promotions, which is important in an environment where one of the reasons people leave is because we're experiencing high inflation. One way to address that is to move to a job where you get a promotion and increase in salary.

If the lab doesn't have sufficient promotion funds to offer opportunity for staff that are eligible, it's essentially encouraging them to look elsewhere. That's another step we took.

In September we announced a number of changes to our benefits packages. So it's not just compensation to ensure that we remain competitive. The lab had actually pretty good benefits for people with a lot of tenure but not so good benefits particularly for the new staff. We approved the benefits for everyone.

But most of the investment was really

targeting where we were seeing the greatest attrition. I would say now we have very competitive benefits, and we're trying to address the compensation. We are hiring.

I'm speaking to the cameras and the audience. You know, if you're interested, we're going to have to continue to grow, and we're not going to be successful unless we can both attract and, even more importantly, retain staff in order to do our mission.

CHAIRPERSON CONNERY: I will note to my staff, he was not talking to you.

So along the same lines over the past few years, our resident inspectors have informed us that Triad is making concerted efforts to identify late career staff with superb track records and put their skills to use mentoring the next generation. We also understand as folks retire, you're trying to compensate by identifying high-performing staff and putting them in rotation.

I'm curious how well this is working, and is it a model that can be replicated in other places and does it balance short-term losses in productivity with overall longer term need to grow the entire workforce?

DR. MASON: Some of those changes actually came about really as a consequence of some of the organizational changes I discussed earlier. There was an initiative within the weapons production organization to get mentors on the floor.

It's part of a broader initiative we have that's focusing on first-line managers, because I think we generally believe, and we have evidence to support our belief, that the biggest impact we can have in terms of the safety of our operations is having first-line managers who are engaged on the floor coaching, providing guidance to their staff.

Part of it is providing mentors, experienced people. In some cases they need to be retirees who have had successful careers who are not interested in working full-time but come back part-time and work with recently appointed first-line supervisors to help them grow into that role. So that's -- that's, I think, one important element.

We've also instituted -- we're taking advantage, actually, of a program for one of the parent companies of Triad, LOSA, which is the lab operations supervisors academy, which is a scenario based experiential training program, where we have

real-word scenarios that actually happened, you know, in labs where managers are sort of placed in difficult situations.

You know, someone who's coming down hard on you because you're behind schedule, but you've got some issue that needs to be addressed that requires taking the facility down. How do you navigate, you know, those competing pressures. So we have our first-line supervisors walk through those exercises with people role-playing, changing it up. One time they're in one role, the other time you could be pretending to be Ted and observing this, and that we found to be valuable as well.

You know, I think the challenges we have with staffing and stuff coming in with less experience are occurring elsewhere in the complex so absolutely there are opportunities to share those lessons, and we're both trying to take good ideas from other places and also working to export what we've earned -- what we've learned.

I would say, we've actually taken a look at this, and when things happen, when there's an off-normal event, of course we always do an analysis to determine, you know, what happened, what are the root causes, what are the steps we need to mitigate.

One of the things we've tried to be alert to is are we seeing things happening because we have a lot of new staff that have less experience.

And actually, maybe a little bit surprising in many cases, that is not really the driving factor. In fact, we're finding a lot of new staff who are coming in because we've set up things like our new-employee training academy. They're getting a kind of uniform exposure with how to do things are coming in in a way that, in fact, can be educational for the long-time staff.

So it's not simply a case of, oh, you have all these inexperienced staff, and they will make a mistake. Yes, they will. That's why it's good to have experienced people around them. They come in with a lot of different skills that are things that maybe people like myself that have been around longer didn't have the opportunity to learn them.

So I think there can be a lot of give and take between the new staff and the experienced staff to the benefit of both.

MS. HRUBY: If I could just say a little bit here, because I think everybody else with me could testify that we're spending an enormous amount of time on this staffing issue and energy and trying

to effect a cultural change associated with the way the National Nuclear Security Administration works with our labs, plants, and sites to enable competitive environments because of this attraction and retention issue.

And it's my, you know, belief that -- I've been in the complex 40 years in January, actually, and there was never a midyear salary adjustment, so I can speak for at least that one. And that was like -- there was a big need, and we found -- we said, we can do this, right? And we did in the timeframe that mattered.

And it's not only that, but many other initiatives to relax parameters on benefits and so forth so that Thom and his colleagues who manage these institutions can do the right things for the localities, and then we can learn from one another, and we talk about it every time we're together as a group.

And so we -- we will -- we -- our workforce, our NMEO contractors, they're never -- you know, you're not going to compete with successful start-up companies and a lot of other things, but we can do -- we can spend our money better, and we can stay more competitive, and we --

I mean, I intend to make this, you know, as important as anything else, because it's the only -- the only way we're going to deliver, you know, our mission safely, securely, and all the things we need to do.

So I think Thom at Los Alamos has done a fabulous job. This is throughout the complex. Thanks.

CHAIRPERSON CONNERY: Thank you. Tom?

MR. SUMMERS: Thank you, Chair Connery. To follow up with this line of discussion, and really appreciate your candid responses.

To Dr. Mason, over the last five years Triad has hired many people, as you said. In response to this hiring blitz, Triad's developed substantial new-employee training programs, and you had mentioned specifically the new-employee training academy.

Figure 34 shows some of the new training centers and program documentation. I was lucky enough to tour one of those centers over the summer, and I was very impressed by what I saw.

Dr. Mason, we understand that seasoned employees do not go through the rigorous training that is designed for the new employees that you're

referring to. Can you discuss whether there is currently a conflict between how the new employees perform work based upon their training and how the seasoned employees perform work based upon their training experience?

DR. MASON: Yeah, I leave it to the fact there is a difference in the experience, and I wouldn't characterize it as a conflict necessarily. I think there are definitely things that the new employees need to learn from the experienced employees who know the facility, know how to operate in that environment.

And, you know, that experience base is not something that we want to give up on, but I think that the -- the advantages that we're seeing from the approach that we're taking, which was, you know, shamelessly borrowed, actually, from the Navy, what is -- is that there is a good, common understanding of expectations, and, you know, it's designed to get people to a point of effectiveness, you know, sooner than would otherwise be the case.

When you're only hiring a very small number of people, the tendency historically was we put them into a work environment, and they learn by mentorship and doing. That works with a small

number of hires. It's not scalable to what we're doing at the moment, so we had to do something different. But we are seeing significant benefits, and, in fact, I think that dialogue between the senior staff and new-hires is two-way dialogue for that reason.

I would say that we are also working to provide more training for the incumbent staff also. I mentioned this operation supervisor academy is one example. We're doing something called management boot camp, and of course there's a lot of ongoing training requirements for the facilities where there's annual qualifications that are required, and we're working to improve that since, at times, the sort of canned PowerPoint presentation is not necessarily the best way to touch people's hearts and minds.

MR. SUMMERS: Thank you Dr. Mason.

Chair Connery.

CHAIRPERSON CONNERY: Ms. Roberson.

MS. ROBERSON: Thank you, Chair Connery. Earlier this year the NNSA field office requested an assessment of conduct of operations of PF-4 following a series of significant operational events.

For the public's awareness, conduct of operations is a way of ensuring work is performed in a formal, predictable manner that minimizes errors. One example might be strictly following procedures.

One of the events of concern occurred in 2021 when a worker jammed open a field valve, causing 1,800 gallons of water to spill onto the storage vault floor, as picture in Exhibit 35. We have a quote from that assessment we would like to highlight in Exhibit 35.

In summary, it states that there's an expectation for NNSA facilities to have the same level of conduct of operations as nuclear Navy and commercial nuclear power programs, but NNSA facilities are not resourced to allow for that.

So, Administrator Hruby, does NNSA expect Triad's level of formality of operations to be on par with the nuclear Navy and the commercial nuclear power plant?

MS. HRUBY: Yes.

MS. ROBERSON: Okay.

MS. HRUBY: Unequivocally yes.

MS. ROBERSON: What is being done to get there?

MS. HRUBY: Again, just sort of going back

to the discussion we just had about training, staffing, doing things to enable mission success.

So one -- let's see. As you may know, the Naval reactors program reports to me as well, so we have an opportunity to know up close and personal some of their programs, and, you know, we -- it never works to copy something exactly, but Thom has described a really impressive set of training classes that they put in place at Los Alamos, and I can say that, you know, other -- our other labs and sites have done some other similar things. We have to also empower the employees and have good oversight and bureaucracy.

You know, I, earlier in my career when the Department of Homeland Security was stood up, I had the opportunity to support from the lab -- from Sandia, and for the first time I realized all of advantages of bureaucracy when I saw an organization that was created without any.

There is some need for bureaucracy and oversight, but it has to be done in a way that empowers employees and produces innovation and creativity and not just be burdensome and drive them away to places they feel they could be more productive.

So in addition to the things that we talked about in terms of competitive benefits, in terms of training to attract and maintain the right kind of people who are also trying to work on having productive -- a productive and efficient enterprise that makes people feel good about what they do every day, and now they come to work, so those are all the elements that we're trying to put together.

This is not easy, and its results won't be immediate, but we -- we're spending a lot of time trying to define what it is, talk to people about it, and make it happen.

MS. ROBERSON: Thank you, Ms. Hruby.

Dr. Mason, you've cited a list of initiatives you're undertaking organizationally, and we appreciate those. For the record, I wonder if there's some significant gaps that you're still trying to fill when it comes to modeling yourself that way.

DR. MASON: Yeah, I think specifically with regard to conduct of operations. That's -- that's something that we're still trying to build into the culture. I mean, our programs are certainly based on the lessons learned from the nuclear Navy and commercial nuclear power programs.

I would say that -- that there are some important differences, not in terms of the expectation of, you know, adherence to procedure when there are procedures and so forth. I think the expectations really do have to be the same. I think the difference is that, you know, the PF-4 facility has a very diverse mission and lots of different sorts of operations that change.

One of the things that it does is research, which sort of by definition is going to be different every time. I would say pit production tends closely toward the model you see in the nuclear Navy or commercial nuclear in the sense once we get up and running, we will be more in a routine mode of doing the same sorts of operations in the same way. That one will more closely resemble; wherein other parts of the facility where you're doing one-offs, you will have more flexibility. That doesn't remove the need to do things right.

I think we're also trying to apply sort of the concept of conduct of operations more broadly across the lab, not in the sense of capital C, capital O conduct of operations, which has a particular connotation, you know, its own DOE order 422 for nuclear operations, but more what you might

call disciplined operations, which may be applicable even in nonnuclear environments.

And in some respects, actually, you know, the nuclear facilities are probably more mature than some of the other operations, although I will say in terms of high explosives work we do, certainly no one would say that's not high hazard operations, it doesn't look that different. We're trying to make sure we get that promulgated more broadly across the lab.

I will say at this point we have areas of the lab that do really, really well, areas within PF-4 that do really, really well. What we're trying to do is take those examples and propagate them, you know, into some of the areas where it's maybe not as embedded in the culture and the way of thinking.

MS. ROBERSON: Thank you, sir.

CHAIRPERSON CONNERY: Mr. Summers.

MS. ROBERSON: I'm sorry. Mr. Wyka, want to speak to that?

MR. WYKA: If I can address it from a field office perspective.

MS. ROBERSON: Absolutely.

MR. WYKA: I know it's been a good partnership on operations, and we talk about mission

focus, getting the job done. It has to be done safely and securely. Key to getting that done is conduct of operations and discipline of operations. It's a -- it's not just another requirement. It's how things are done at the lab, and that's the culture that the lab leadership is putting in place, and that's what we sort of see, and that really enables mission work. It's really the foundation for the laboratory safety culture as well.

A lot of improvements in this area, a lot of it is training that is done for existing employees as well as new people coming in, but it's also leadership on the floor. You walk on the floor, walk in the spaces, a realtime way to express their expectations with respect to discipline operations just like safety and security.

You know, LANL's kind of operations are based on programs of the nuclear Navy, where I came from, as well as commercial nuclear programs. It's more -- it's something that has to be done sitewide. Discipline operations, as Thom mentioned, no matter where it happens at the lab, it's still the same results, and it's also a unique aspect with the lab culture and also pivoting. They come to another culture. It's more important for that discipline of

operation, conduct of operation to be pieces of it.

We talked about bringing in new staff. It's a challenge, but it's also an opportunity. And I know that has -- the lab has taken the opportunity to understand operations and conduct of operations which are throughout the lab.

MS. ROBERSON: Thank you, sir.

MR. SUMMERS: Thank you, Ms. Connery.

My next question is going to be for Mr. Wyka. We would be interested in hearing your perspective on field office oversight, especially on nights and on weekends.

So Triad has aggressively ramped up their work during nights and weekends, as we're all aware. This includes hazardous activities, such as removing old contaminated gloveboxes and other pieces of equipment like those we see on the right in Exhibit 36.

I understand that NNSA is not yet staffed up fully to provide consistent Federal oversight during off hours.

So, Mr. Wyka, do you believe that there are activities in the near future that occur off-hours that require Federal oversight?

MR. WYKA: Thank you, Mr. Summers. This

is really an important area. It's an area where we made a lot of improvements as well.

You're right, this is an exciting time, exciting place, as we talked about today, and it requires a great Federal staff, which I have the privilege of supporting, and we have to have the personnel on that staff to do that.

And it's a unique office in the sense that we have most of the same things that other field offices have, but we have sort of the pivot in terms of mission, keeping the (indiscernible) complex of the lab but then pivoting also the pit production, which requires different functions in terms of safety-basis approval, start-up activities, 24/7 operation, like you mentioned, security pieces, projects, permitting, which is an immense ask, as well as community engagement.

Everything we do here we have to effectively communicate with the community. Over the last year, and this is with leadership's attention and making this happen for us, we've had the same challenges that the lab has in terms of recruiting people, retention, getting them here, keeping them here.

We have 11 retirees from the field office.

We have a staff of 80. We're at about 100 now. The ceiling is 102. A big focus has been across the board, but in terms of safety and operations of facility representatives, for example, we had seven, you know, a year ago. We have 16, and six of them are phase two qualified, and we're actually bringing in folks that have left or were previously PF-4 qualified coming back.

So, you know, I think from an oversight perspective we're supporting 24/7. In my mind, we need at least six, and I need to get nine backups. We're on target to do now. It's across the board for everything. Nuclear safety specialist, we have a cap for nuclear safety specialist.

Again, the thing I mentioned earlier, it's not just the field office. It's the enterprise. We rely on resources from all the other field offices. They rely on resources from us as well as headquarters so that we take advantage of the SME and leverage of resources that's available across the complex to do those missions I was talking about from the field office.

MR. SUMMERS: Mr. Wyka, I appreciate that as you build towards the nine that you hope to have, I would imagine soon that the six that you have --

is that sufficient resources to be able to provide weekend and evening activity coverages to provide sufficient Federal oversight?

MR. WYKA: Thank you, sir. It is. It's not optimum, but it's enough to provide coverage, obviously, during the days and sporadically and evenings and swing shifts, but then I have others that are (indiscernible) qualified, SMEs that I can use for oversight activities for back shifts and swing shifts where we do construction and maintenance and other type activities.

MR. SUMMERS: Thank you, Mr. Wyka.

Madam Chair.

CHAIRPERSON CONNERY: So we just heard you're in the Los Alamos field office, which we see in Exhibit 37 is making some gains. It still needs to grow the workforce to align the Federal accountability. We know from our own experience trying to hire inspectors the cost of living in the Los Alamos region can be an impediment to attracting talent. We also know that your Federal workforce has constraints on compensation options not faced by your contractor partners.

Can you discuss your views on whether NNSA's hiring authorities support the current need

for Federal oversight?

That's to you, Ms. Hruby.

MS. HRUBY: It's a complicated question. So we have -- let me take it -- let me pull it apart. So one thing is do we have enough people, and that is a discussion that we have every time during a budget process. We have a goal, but we have trouble honestly getting approval for the number of people that we feel we need every year, so we -- we, you know, compromise, and we work hard, and this is a process that's led by Frank Rose, the principal deputy, to allocate the people to the places we really feel they're needed.

So Ted talked about, you know, his cap. I mean, we put -- he was so far below his cap, he didn't need more people. He needed help filling the slots. And there was attention put on that particular problem, and special -- special help to not -- but, you know -- special -- we really said we've got to -- we need the Los Alamos field office to be staffed up and put a real emphasis on that with some success, with a lot of success, actually, and the quality of people are really remarkable as well.

There is also, do -- are we getting in our

own way in terms of in how we hire and the processes we use for that. So there's the numbers and optimizing the amount of time it takes and the way to attract people and the way to appropriately pay the Federal employees as well.

And we are also -- there's room for improvement there. I think we have improved. We need to continue to do so. So we continue to look for opportunities to have a process that attracts the kind of people that we want in a timely manner that we need them.

I don't know, Jim, if you want to say anything here, because you also pay a lot of attention to this.

MR. McCONNELL: Right. We have -- the two problems at the NNSA, or the two challenges that the administrator talked about, what is the top line, what is the numerical number we can bring onto the Federal part of our team and the resources to cover those. Have to have training, travel, those sorts of things.

Then there's the speed and ability to keep up with the gap between -- at any given time there are dozens of unfilled positions across NNSA, and if we could figure out how to hire those good people a

little faster, we would operate closer to our top margin, and that would have an immediate benefit, so we have to work on both of those things, and we are.

I can -- I can attest that, you know, among all the busy things, with Ukraine and all the other things that are dragging on the administrator's time, her focus on this is, in my recent experience, greater than or certainly no less than any other administrator, and so reflects that the performance is a direct reflection of the priority that the administrator puts on it.

CHAIRPERSON CONNERY: I can add some of these things are out of your control. Obviously you can speed up the process and push for my -- I was alluding to outside of your purview, your wish list with regards to potential locality pay, better incentives. We talked about benefits packages, relocation benefits. Are there numbers that you could use or that you'd consider asking Congress for to help you in that scenario?

MS. HRUBY: Yeah, I'm -- I'm confident the answer to that is yes, but honest -- I will also be honest with you that that has not been our emphasis yet. Our emphasis first was to get -- still trying to get the numbers right, trying to get the

allocation of those right, and trying to hit those targets.

But given -- we'll see where this economy goes, but we may need more tools in the toolkit, you know, if it continues and on the path it's been the last year or so.

MR. McCONNELL: One of the things -- I'll just express if I had some way to wave a magic wand to have a wish granted, it would be to make it easier to move people around on details between various parts of the Federal organization, and honestly, between the Federal organization and our NMO partners, that the step change and the performance and understanding of the overall enterprise, if we could figure out how to be more dynamic in how we let people acquire experience, I can't think of a thing that would have a more immediate step change than that, and it is fraught with lots of challenges.

CHAIRPERSON CONNERY: That sounds like a longer conversation, the pluses and minuses.

I'm mindful of time. I did want to get to public comment. I want to to be specific, and I know, Mr. Wyka, you talked about the fact you've got calls in to folks for backups. I was a little

shocked when we went and toured PF-4 and realized you had one fully qualified fact rep for all of PF-4. I kind of want to understand what happened, and what are you doing to get folks qualified, because that just seems unhelpful.

MR. WYKA: Thank you, ma'am. Right. As of now we have one phase one qualified fact rep in PF-4. We're in the process now of converting six fact reps that are fully qualified phase two. We're moving into positions to support PF-4 as well as we brought a couple back that were previously PF-4 fact reps that should go through accelerated qualifications, and we're also using others on the staff that were PF-4 qualified fact reps to do that type of oversight as well.

CHAIRPERSON CONNERY: Thank you. I appreciate that. I'm going to turn to my other fellow board members. Do you all have additional questions you want to ask at this time?

Mr. Summers?

MR. SUMMERS: Thank you, Chair Connery. I don't have any further questions. Thank you very much.

CHAIRPERSON CONNERY: Ms. Roberson?

MS. ROBERSON: Just one follow-up

question, Mr. Wyka. Do you know when you're going to have two? I mean, you know you've got them in qualification. There's a lot of stuff going on in the facility.

MR. WYKA: Yeah, that's in real near term to have at least several within PF-4, but again, the one plus additional folks that are PF-4 qualified, fact rep qualified, also spend time doing oversight in PF-4 as well as subject matter experts.

MS. ROBERSON: So in your term?

MR. WYKA: Yes, ma'am.

MS. ROBERSON: No further questions.

CHAIRPERSON CONNERY: I just want to know -- I moved the schedule to the left. So this actually concludes the question portion of the hearing, and what I would like to do now is to go -- it's -- what time is it? It's quarter to 8:00. I'd like to take a break until eight o'clock. At that point in time is when we would invite the public to make public comments.

If you signed up already, there should be a list. You'll be called in order that you're on that list. If you haven't signed up yet, now's your chance. Please go forward and sign up to speak. We encourage the folks from LANL and NNSA to stay. The

board will make closing comments. You can sit in the audience.

Depending on how many people sign up will determine how long we'll give you to speak. We'll just have to do that math in a moment.

So I do want to, in the interim, thank the panelists for their candor and their openness in answering our questions.

Let's take a brief recess until eight o'clock and return for public comment. Thank you.

(Recess was taken from 7:47 to 8:04.)

CHAIRPERSON CONNERY: We're going to keep the public comments to about a half an hour, but we will not limit if there's anyone else that wants to come up and speak. And for those of you who were there last session, as you recall it was our associate general counsel who was doing the timekeeping. He's going to alert you at one minute let so that you can wrap up your remarks.

So I'm going to turn it over to our general counsel. I want to let you know that the administrator and her staff had to go to Albuquerque.

We have representatives from the field office, and Dr. Mason and Mr. Wyka are here.

They're interested in hearing your comments.

With that, I'll turn it over to Mr. Fox.

MR. FOX: At this time the board would like to provide an opportunity for comments from interested members of the public. A list of those speakers who have contacted the board is posted at the entrance to the room.

We have generally listed the speakers in the order in which they contacted us. I will call the speakers in this order and ask that they state their name and affiliation at the beginning of their comments. There is also a table at the entrance to this room with the sign-up sheet for members of the public who wish to make comments but did not have an opportunity to notify us ahead of time. They will follow those who have already registered in the order which they have signed up.

To give everyone wishing to make a comment an equal opportunity, we will ask the speakers limit their comments to five minutes.

As the chair mentioned, I will provide notice when you have one minute remaining in your five-minute time slot.

We will give consideration for additional time if the schedule allows. Remarks should be

limited to comments, technical information, or data concerning the subject of tonight's hearing.

Our first speaker is Jay Coghlan from Nuclear Watch New Mexico.

MR. COGHLAN: So as stated, I'm Jay Coghlan, C-O-G-H-L-A-N, Nuclear Watch New Mexico.

Chair Connery, Board Members Summers and Roberson, and staff, thank you for this opportunity to comment and for you all being here, for your diligent work and oversight.

I'm going to start by congratulating the board for surviving DOE order 140.1 which sought to restrict your access. I can't think of a higher compliment for the board than the fact that DOE so severely tried to restrict your access, so it's a real pleasure for me to see you all sit here and robustly question the NNSA administrator, the LANL director, et cetera. So again, congratulations and here's hoping you have many more years of it.

I want to first start by actually straying from the purview of the safety board a little bit. I feel entitled to do so because NNSA administrator Jill Hruby -- I'm disappointed she's not here, so she can't hear me, but perhaps others can convey my remarks to her -- but she invoked both the new

nuclear posture review and the sacred cow of the quote deterrence.

And the point I want to make, first of all, is the US, and for that matter the USSR, now Russia, never had just deterrence to begin with. It's always been a hybrid of deterrence, maintaining nuclear war fighting capabilities. That kind of destroys civilization. That's why we have thousands of nuclear weapons and a 1.7 million dollar modernization program.

And to fall back on -- and I'm going to add to this. As part of this modernization, it's quite likely that future pits will differ significantly from their original tested pedigree. This is something that I don't think the LANL director or NNSA in general has been forthwith about. I think there should be more discussion about this and what the national security implications of this could be, because if we're going to come out with new pits that differ significantly from original designs, that could arguably erode confidence in stockpiles reliability or even lead to the resumption of testing.

I'd like to hear people. Obviously not here now. I'm talking about outside this forum.

But I think NNSA Administrator Hruby and LANL Director Thom Mason should address that kind of subject, and I would say specifically that they ought to do -- there should be a new pit-aging study as per the criteria that the JASON laid out in their 2019 letter report.

But with that, I'll veer back into what I understand to be the purview of the safety board. I'll have to look at my notes a little bit here.

But, you know, for starters, reportedly production, despite the happy talk about pit reduction at Los Alamos, reportedly it's delayed a year, reputedly largely because of COVID, although I suspect that's a convenient excuse. But perhaps more significantly is pit reduction is likely delayed for a full five years at the Savannah River site.

MR. FOX: One minute.

MR. COGHLAN: One minute?

MR. FOX: Yes.

MR. COGHLAN: I'll be able to observe that. I will submit my comments in writing. I'll have extensive written comments.

So I'll attempt to highly abbreviate things. Concerning the LANL SWEIS, Mr. Summers, I

heard you say the board is not going to address it. I urge you to keep a "keep them honest" approach. LANL and the lab is going to say all is going to be safe. You ticked off reasons that is not true.

Specifically, there will not be a new documented safety basis for PF-4 by the time the sitewide is out. There will not be a probalistic seismic hazard analysis. There is wide disparity between the potential dose calculations that the board comes up with, and the vanishingly small doses that NNSA come up with.

So to be respectful of time, I'll go ahead and stop there. Just urge the board to hold the feet of NNSA and LANL -- hold their feet to the fire. We badly need you all. You should understand, for one thing, how compromised both political and regulated leadership here is in this state, so please act accordingly, and I'll stop.

MR. FOX: Thank you. You can give your written statement to Tara Tadlock in the back there.

MR. COGHLAN: Thank you.

MR. FOX: Next we have Greg Mello from Los Alamos Study Group.

MR. MELLO: Thank you, Chairman Connery and members of the board. It's always wonderful to

see you. And I will submit written comments, not tonight, but this week.

So listening to this excellent hearing -- and thank you very much for coming out here and having it -- I'm not hearing firm safety gates or standards in this review. There's -- we don't know exactly what standards LANL must meet. I'm not hearing that.

I heard this from another Federal agency. What defines a well-run nuclear facility? They didn't know. We know that Triad does not have a compliant document safety analysis, and we know that the one that is being written is not yet approved and will not be implemented in time for the ramp up of operations that it -- that it requires.

We also know that right now there's a difference of opinion between the safety board and Triad and NNSA as to whether PF-4 in particular meets DOE safety guidelines for public exposure. We don't know when or if that difference of opinion will be resolved.

I believe that modeling accidents involving facilities and people and extremely complex control systems and equipment is way harder than modeling nuclear weapons, let's say a primary.

Yet when it comes to primaries, NNSA insists on having an enormous amount of actual experimental data. They don't rely just on models. In this case they want to rely on models to obviate concrete safety improvements.

I think that Joyce summed it up very nicely with the phrase pencil flipping the problem. I was good at modeling once, but I would never model that.

I think that hearing -- there's a long list of safety improvements that have been in discussion over the last ten years, and we've often talked about that with the board, and we saw how some of these have been put -- the schedules have been push back. That was an abridged schedule of the safety improvements that have been delayed. I would like to see a comprehensive list of these proposed safety improvements.

I would like to see a resourced schedule from LANL and from NNSA as to when these are going -- these are going to be fully addressed. I would like the safety board to work with the authorizing commitments -- authorizing committees and appropriation committees in Congress to have them incorporate these issues in mining report

language, and I would like to see NNSA to put these commitments in the coming congressional budget. Then we begin to believe this is actually going to happen.

What we -- what I believe I heard today was quite a long talk about things that were mission critical --

MR. FOX: One minute.

MR. MELLO: -- and how to maximize the safety benefit within the envelope of the mission schedule and requirements. I think that those requirements and these discussions are taking place in a very small group of people.

We know that Congress is not involved in them. I've just been to the White House. I know the White House is not involved in them, so there's too few people.

You good folks on the other table are some of the very few, but as we know, you're not an external regulatory body, so what could we do? You're doing a fabulous job, but we need help in order to make safety as important as the so-called mission.

Actually, the pit production schedule is really fairly arbitrary. Los Alamos is unlikely to

make the schedule. As Charles Goode said, and Dr. Mason has indicated in the past, and as we have seen from FOIA documents, so it reflects, reflects the schedule, not the safety.

Thank you very much.

MR. FOX: Thank you for your statement. If you'd like to send something in writing, send it to hearing@dnfsb.gov before December 16th.

Next we have Cindy Wheeler from the 285 Alliance.

AUDIENCE MEMBER: She's departed.

MR. FOX: Next we have John E. Wilks III from Veterans for Peace.

MR. WILKES: I'm John Edward Wilks, SVP for Albuquerque Veterans for Peace.

To the board's technical director, sir, if you're in the middle of nowhere in the southwest desert, and you have a flat tire on your car, what would you do? I give you that question because you used some car analogies. You would stop until you fixed the tire. That's exactly where we are with the NNSA at LANL. Stop until you fix your tire.

Okay. We have a definition problem. Legacy. We consider legacy waste from 1943 until 2000, what, '16, '17.

The EM considers legacy from 1999 when the WIPP opened. No, before that the definition was quite different. Because NWPA was passed in 1970, EM used to go back to 1970. We say Leslie Groves deposited this stuff at the Pajarito Plateau. It needs to come out of the ground before we start generating more waste from the surplus plutonium project or the pit project, because it is poisoning our aquifer.

Now, in Idaho, a lab cleaned up its subsurface disposal area that was established in 1952. It accepted waste from '54 to '70. It's cleaned up. Why is the waste at Los Alamos not cleaned up? The answer's simple. Because the Snake River is more important than the Rio Grande River. When the Rio Grande River is contaminated, all New Mexico, west Texas, and northern Mexico will be contaminated. Kindly make that a stipulation.

Dr. Mason mentioned waste is a product. Where is the waste going? I will remind you that the WIPP is a 25-year pilot program. We're in year 23. Chapter 63 Veterans for Peace will do everything in its power to close that facility June 2024, period. If we have to go to state legislature, the Congress, the regulators, we made a

deal. 25 years. That's the deal. We want you to stick to it.

So kindly ask NNSA where is the waste stream going if the WIPP closes as contractually agreed to in June of 2024?

My next thought, I understand NNSA's up against a hard spot. The Congress passed a law. NNSA is simply trying to comply with the statutory threshold dates. I'm not berating them. I'm saying I'm sure they're trying very hard. Probably doing the best job possible, but the reality is until you clean up the plateau, kindly do whatever you have to do to make this new waste stream safe, and please clean up our backyard.

Thank you.

MR. FOX: Thank you for your statement. Next we have Joni Arends from CCNS.

MS. ARENDS: Good evening members of the board. My name's is Joni Arends. I'm with concerned citizens for nuclear safety. I want to thank you for your dedication and your service and for nuclear safety. I want to thank you for preparing for you and your staff preparing for this adventure to New Mexico, going to LANL, meeting with us, and to holding this hearing.

I am now going to direct some of my comments to the laboratory. Hi, Mr. Wyka. Good to see you again. So we're basically five years behind schedule. The last SWEIS was finished in 2008, nine years after the 1999 SWEIS. Now we are, what, 14 years behind schedule or 15 years behind schedule, and the plan is to make the SWEIS, and that was to cover 15 years into the future. That's unacceptable. We haven't had any public participation on the scope of this work for five years, when we should have had it done by 2018.

Hand in hand is that the LANL permit, hazardous waste permit, is four years -- no, two years behind schedule, almost three years behind schedule, and a complete application has yet to be submitted to the New Mexico Environment Department. Both of those things allow for the public to make public comment, have a discussion within our communities about what's happening at LANL, and we have been ignored through these processes.

It's important for the laboratory. It's essential for the laboratory to step forward on both of those things and that the SWEIS include plutonium pit reduction, surplus plutonium, heat sources in the analysis.

The other issue that the director of the lab and the president of Triad said, that nobody cares about whether it's legacy or if it's newly generated waste. That's not true. We care that the legacy waste gets off the hill. The legacy waste that's sitting in unlined pits, trenches, and shafts and migrating to the regional drinking water aquifer.

It's really easy to open the back door at PF-4 and put newly generated waste into a WIPP truck. That's not what the priority is. Legacy waste is the priority, and luckily today the board said they can provide us with the information about what the shipments comprise in terms of legacy and newly generated waste so we can keep an eye on what's actually going to WIPP these days, and we are eternally grateful for that information. Thank you.

Also, we have requested an expanded seismic monitoring network. In 1994 there were almost 30 seismic monitors on the Pajarito Plateau. In 1984, that number was reduced to 11. We need to boost the seismic network, and that data needs to be available publicly. Right now they're downloading data off of the monitors, and then they're having to manually put it into a database. That's

unacceptable. We need to have a state-of-the-art seismic monitoring.

MR. FOX: One minute.

MS. ARENDS: Thank you. And finally, we need to be talking about a transition plan to come into compliance with the treaty on the prohibition of nuclear weapons. CCNS acknowledges that the US has not signed or ratified the treaty, but the world is moving towards, in very strong steps, for the prohibition of nuclear weapons.

In terms of economics of northern New Mexico, we need a transition plan for when the treaty -- when the US signs the treaty, and given the situation in Ukraine and NATO, and all of those things that I don't completely understand, I do understand that we need to be prepared for when the treaty -- when the US signs and ratifies the treaty, and I ask for your leadership to think about that transition plan, and possibly through Mr. Mikolanis' strategic plan we can talk about that with regard to moving forward.

MR. FOX: Time.

MS. ARENDS: Thank you. Board members, thank you again, and staff thank you, and Mr. Roscetti, I'm so grateful for your analysis this

evening making the presentations.

MR. FOX: Thank you for your statement. Next we have Janet Greenwald from CORD, Dixon, New Mexico.

MS. GREENWALD: Hi, I wanted to thank the safety board for coming here and for all their efforts to make LANL a safer facility and also for staying to listen to public comment. Appreciate that very much. Also the people from LANL.

I'm Janet Greenwald. I'm the coordinator for citizens opposed to radioactive dumping, which is a very ancient, small grassroots group, and I also am a resident of Dixon, New Mexico, which is a community which is directly downwind, according to prevailing winds, from Los Alamos.

We were contaminated during the Cerro Grande Fire, according to the New Mexico Environment Department. There was cobalt in our plums and cesium in our broccoli. It was below regulatory concern, because the average American eats, like, 1.4 plums a week and so forth. In rural areas, when the broccoli comes in, you and your children eat a lot of broccoli. When your plums come in, it's the same.

So after the Cerro Grande Fire, a lot of

baby horses died, and baby goats. Chickens stopped laying eggs. We lost a grandchild in utero, and there was a whole bunch of cancer in our communities and in the communities just above us, which are even -- because of elevation, even more directly in line with Los Alamos.

I know from working with the workers from Rocky Flats that nerve problems are also a part of being contaminated, and now I'm seeing in our community more of those. A dear member of our family who was born and raised in Dixon is now suffering from extreme neuralgia. My closest neighbor is dying of MS.

There have never been any health studies in our area. There are no evacuation plans, and even though Los Alamos has a terrible safety record, they were chosen to do two dangerous projects, and that is build plutonium pits and transform metal plutonium pits into powder as part of the surplus plutonium project. No one ever even looked at the downwind communities. No one ever considered that we were already contaminated, that we're mostly Hispanic and indigenous people of low income.

You know, environmental justice is such a beautiful word and concept, but we know nothing of

it in the downwind communities from Los Alamos.

Another thing that has happened is that LANL has contaminated a lot of its employees. I know about this because --

MR. FOX: One minute.

MS. GREENWALD: -- until the leader of the group died, there was a support group at the Dixon Library every Saturday morning for contaminated Los Alamos workers.

I feel like now that I've learned that we can't comment on the expanded plutonium production at Los Alamos, I don't know how we can comment on the surplus plutonium transformation that's supposed to go there -- on there. It -- it feels even more than ever that we have been forgotten. No one even thinks about us.

Thanks for letting me speak.

MR. FOX: Thank you for your statement. Are there any other members of the public who wish to provide comments?

Seeing none, I want to thank everybody who provided comments this evening and turn it back over to the chair.

Ms. Connery.

CHAIRPERSON CONNERY: Thank you to the

public for your comments. I know it's difficult to get up and speak publicly, and we appreciate that you all came and spoke from your heart.

I'm going to turn to my fellow board members for their closing statements, and I will wrap it up at the end. So we'll start with Vice-Chair Summers.

MR. SUMMERS: Thanks, Ms. Connery. First of all, I'd like to thank our panelists and thank all of you. I'm grateful to have been with all of you today and appreciate your participation.

PF-4 is a national security treasure and a keystone to our nation's nuclear deterrence. DOE and NNSA, our New Mexico elected officials, and the very important concerned citizens of New Mexico and the American public have made some progress together in addressing the safety concerns at LANL's PF-4.

Working together and in partnership, I again am hopeful that more progress is ahead and will be made on behalf of our great nation and the American citizens of the United States. Thank you.

CHAIRPERSON CONNERY: Thank you, Mr. Summers.

Ms. Roberson.

MS. ROBERSON: Thank you, Chair Connery.

I really appreciate the members of the public in attendance here in the room and virtually, and I appreciate those that provided input tonight. Your input and insights are very welcomed.

I thank you, Administrator Hruby, Lab Director Dr. Mason, Field Office Manager Ted Wyka, and Mr. McConnell for their attendance. I appreciate our exchanges tonight and the information you shared and the transparency you provided.

I know as we reflect on the totality of this hearing, there will probably be follow-ups as a result of the hearing, but I appreciate the exchanges tonight. Thank you.

CHAIRPERSON CONNERY: Thank you, Ms. Roberson. I know I'm between you and hopefully bed, but I do want to add to the thank yous.

First of all, I want to thank the Santa Fe Community Convention Center for allowing us to use the space. Great space. We've held hearings here before, and it's very conducive to what it is we're doing. I understand we're in Santa Fe, not Los Alamos, but this allows for the greatest participation.

I want to thank Alliance AV for the online streaming, and because of their efforts, this

will -- this hearing will be recorded, and you'll be able to go back and listen to it again should so desire.

I would like to thank Robin Brazil, our court reporter of Bean & Associates, for her patience in dealing with how quickly I speak and for taking such good care of us.

I would like to add to the thanks Administrator Hruby, Mr. McConnell, Dr. Mason, and Mr. Wyka for attending tonight and answering our questions, and of course audience and community members. It's always great to have an educated public, and you are certainly that. I hope we actually contributed to that education tonight, and we hope to continue to do so in the future.

We sound really smart when we're up here, but that is a credit to our staff and all the people who we have with us to prepare for this hearing, from everything from the logistics to the testimony to the resident inspectors, and those of you who helped with the care and feeding of the board, and of course our general counsel. We're eternally grateful to be able to do this.

So I want to wrap, because we touched on a lot of issues tonight. I want to make sure you

understand that speaking for myself, and I don't want to speak for my fellow board members, we do actually have a lot of confidence in the Triad management and NNSA field office and thank them for the work they're doing. We have confidence that they are actually trying to keep safety in mind. As you've noted, they have competing pressures that we as a safety organization don't have to deal with. Their commitment to safety is obvious, and they've made tremendous strides in terms of waste management. We saw the housekeeping at the lab when we walked through the other day.

They are obviously focused to be able to keep that in check. There is, as you heard, a concerted effort on discipline operations to make sure that the accidents are precluded and a lot of work to provide solutions to challenges.

The reason we are concerned is that this is a 44-year-old facility that houses a lot of activities, pit production, heat-source plutonium activities for NNSA, for NASA and others, as well as we heard public comments about the surplus plutonium disposition project. That's a lot of material in a small old facility with a lot of new workers. So the challenges that we are concerned about is to

look at this holistically, is the system that they have sufficient, is it going to withstand the earthquake, and how is that tied into the leak path factor. Can the workers be evacuated in time to preclude the materials from escaping from the doorway in the event of an earthquake, which we know 17 of the emergency lights are actually rated to that design basis earthquake. We know there are items in the hallway that could tumble, emergency operators that are going to go into the building to perform their duties as well.

So that's how all of these things tie together, and we are grateful for the fire suppression system and the work done there. We believe that's going to help mitigate those consequences. We want to make sure we're doing everything possible to protect the workers and the public in that case.

The same is true with the issues to be raised with the field offices. That is the nature of the discussions we had this evening. We appreciate the transparency with which our colleagues answered the questions.

The record for the hearing will be open until December 16th for those of you who want to

submit more information. There are a number of items that appropriately our colleagues said they would submit for the record so they would provide answers that were accurate. We expect to see more of that information being made publicly available to you as we close the record for the hearing on the 16th of December.

Again, thank you for all of your hospitality, for those of you who welcomed us to New Mexico. Thank you for the opportunity to walk through the facilities yesterday and meet with your tremendous staff and workers and workforce. We can only hope for better things to come. Thank you everybody.

With that, we are adjourned.

(Hearing concluded at 8:45 p.m. MST)

STATE OF NEW MEXICO

ss

COUNTY OF BERNALILLO

REPORTER'S CERTIFICATE

I, ROBIN A. BRAZIL, New Mexico Certified Shorthand Reporter, DO HEREBY CERTIFY that I did report in stenographic shorthand the proceedings set forth herein, and the foregoing is a true and correct transcription of proceedings.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or attorneys in this case, and that I have no interest whatsoever in the final disposition of this case in any court.

Robin A. Brazil

Robin A. Brazil, RPR
BEAN & ASSOCIATES, INC.
Certified Court Reporter, NM #154
License expires: 12.31.23

(7343N) RAB
Date taken: November 16, 2022
Proofread by: AB