

Nuclear Waste Partnership, LLC/ Waste Isolation Pilot Plant

Report from the Department of Energy Voluntary Protection Program Onsite Review March 19-28, 2019





Office of Environment, Health, Safety, and Security

U.S. Department of Energy Office of Environment, Health, Safety and Security Office of Health and Safety Office of Worker Safety and Health Assistance Washington, DC 20585 Department of Energy Voluntary Protection Program Merit Review of Nuclear Waste Partnership, LLC Waste Isolation Pilot Plant Carlsbad, New Mexico March 19-28, 2019

Summary:

The Department of Energy's (DOE) Voluntary Protection Program (VPP) Team (Team) from the Office of Environment, Health, Safety and Security (AU) recommends that Nuclear Waste Partnership, LLC (NWP) at the Waste Isolation Pilot Plant (WIPP) continue to participate in DOE-VPP as a Merit participant. Safety improvements that began in 2018 need additional time to mature. NWP needs to continue demonstrating its commitment to making those improvements permanent and earning the workers' trust.

Background:

WIPP was a DOE-VPP Star site under the previous contractors from 1994 through 2011. In 2011, DOE awarded the managing and operating WIPP contract to NWP. NWP requested to continue participating in VPP under the Transitional Star program. In March 2015, DOE completed the transition assessment and admitted NWP into DOE-VPP as a new participant at the Merit level. The Merit level requires periodic progress reviews by DOE until the participant demonstrates the performance expectations for Star level participation. This document provides the results of the March 2019 Merit review (the second review since 2015) and is an addendum to the March 2015 assessment.

WIPP is the Nation's solution for permanently disposing defense-related transuranic (TRU) waste currently in temporary storage at DOE sites across the country. Managed and operated by NWP, WIPP is a deep geologic repository for permanent disposal of long-lived radioactive waste that must be isolated to protect public health and the environment. Authorized by Congress in 1979 and operational since March 1999, WIPP has received more than 12,000 waste shipments, safely disposing more than 65,000 cubic meters of TRU waste in the repository located nearly one-half mile underground. WIPP includes the surface facilities that support operations, mining, and waste emplacement in the mine (normally referred to as the underground)

On February 5, 2014, a fire involving a salt-haul truck occurred at the WIPP site. On February 14, 2014, WIPP experienced an underground radioactive release of Americium and Plutonium from one or more TRU waste containers. These events exposed unidentified vulnerabilities and deterioration in facility operations. These conditions had developed over several years. The urgency to correct the problems and resume waste receipt and emplacement created tension between NWP workers and managers. Managers did not effectively include workers in many of the urgent changes to procedures, processes, and programs; and workers perceived NWP might be intentionally excluding or ignoring them. In 2015, NWP managers began to repair the breakdown in communication, but needed more time to restore workers' trust. NWP was working to upgrade WIPP systems, establish better controls of combustible materials in the mine, and train workers. On its own, NWP demonstrated the commitment to excellence

that warranted continued participation in DOE-VPP as a new participant. However, the programs and processes needed time to demonstrate the excellence that warranted recognition at the Star level. The 2015 assessment identified 12 Opportunities for Improvement with three specific recommendations needed to attain Star level.

Between 2015 and the 2018 assessment, the relationship between NWP and key leaders in the workforce deteriorated. Workers and managers perceived that NWP had not demonstrated open and honest communications. Both were frustrated at their inability to effect meaningful changes and build trust.

A large population of the workforce wanted to fix this condition and believed DOE-VPP provided workers with an avenue to address issues and build partnerships. The 2018 assessment identified nine opportunities for improvement, five of which specifically targeted actions NWP needed to take to improve relationships between managers and workers, improve communications, and build trust. Those five opportunities were the actions NWP needed to address to reach DOE-VPP Star level. This report is an addendum to the 2015 and 2018 assessments and documents NWP's progress on those five opportunities. This report also contains several new opportunities for improvement that NWP can use to help build on its recent improvements (see Attachment 2), but are not new Merit goals or expectations that must be met for NWP to achieve Star status.

Results

Merit Goals

In 2018, the Team identified five opportunities for improvement that NWP needed or must take in order to achieve Star status.

- 1. NWP needs to continue building credibility with the workforce regarding its ability to address mine safety issues in combination with the nuclear safety issues.
- 2. NWP needs to continue reinforcing its corporate philosophy that it values safety as a means to accomplish its mission and demonstrate that commitment daily through visible support and a willingness to pause or stop work when conditions warrant.
- 3. NWP needs to become more adept at implementing change management, including consideration for the workers affected by the change, and ensure managers use the process.
- 4. NWP needs to maintain the current level of committee activity over the coming months to ensure these committees become fully established.
- 5. NWP needs to take a broad suite of actions to repair its relationship with the United Steel Workers (USW) local that opens communication, demonstrates managers' willingness to listen, and restore trust between NWP and USW.

2018 Opportunity for Improvement:

1. NWP needs to continue building credibility with the workforce regarding its ability to address mine safety issues in combination with the nuclear safety issues.

2. NWP needs to continue reinforcing its corporate philosophy that it values safety as a means to accomplish its mission and demonstrate that commitment daily through visible support and a willingness to pause or stop work when conditions warrant.

These two opportunities were closely related, and many actions taken by NWP since the last review affected both of these opportunities for improvement.

Previous emphasis on production (placement of waste in the underground) has eased over the past several months as workers and managers regain confidence and proficiency operating in a nuclear safety culture. NWP and DOE's Office of Environmental Management have reached a point where there is agreement that the current rate of waste receipt achieves the goals of meeting DOE commitments to other States and optimizes the work to have Panel 8 ready to receive waste when Panel 7 is close to full.

NWP has been encouraging workers and managers alike to think more strategically about the WIPP mission. For example, NWP created a Strategic Safety Plan. That plan includes determining the current cultural state of the workforce, conducting training for all employees, and identifying and implementing relevant safety metrics (other than lagging indicators such as Total Recordable Case (TRC), and Days Away, Restricted or Transferred (DART) case rates). NWP publishes its safety metrics in a monthly NWP Key Performance Indicators report that includes 55 total performance indicators. Safety metrics include: skin contaminations, protective clothing failures, TRC/DART rates, volatile organic compounds (VOC) monitoring, and the number of overdue Mine Safety and Health Administration (MSHA) citations.

Several NWP managers frequently visit all work areas, and use those visits to encourage workers to ask questions, stop, or pause work when concerns arise. Numerous workers stated they have paused work when they believe conditions warrant and will continue to do so. For example, some workers described receiving work packages for the back shift that did not have proper radiological controls identified, or the mine configuration did not support the activity. In those instances, workers paused the work to address the issues and the process worked.

Since the 2018 onsite VPP review, NWP replaced its Deputy Project Manager/Chief Operating Officer (COO) with a manager that had worked at WIPP after the 2014 fire and release and had built a strong relationship with many of the workers. Employees interviewed indicated that this change was the most significant improvement toward improving and addressing their mine safety and nuclear safety issues. In a few months, this manager has set a high standard for senior leaders' visibility in the work areas, including the underground.

Often spending several hours per day in work areas either underground or on the surface, the new COO is working to learn workers' names, understand their concerns, and help them identify and implement solutions. He is working with the entire management team to help them understand and follow a "servant-leadership" model. These efforts have improved credibility and trust among workers at all levels. In addition, the new COO has reinforced the expectation that NWP middle and upper managers perform workplace walkdowns, observe work, and engage workers. WP 15-CA1003, *Management Observation*, documents the expectations for this

program and is used with other procedures, such as WP 04-AD3031, *Senior Supervisory Watch*, and WP 10-WC3008, *Condition Assessment Survey*. NWP tracks completed walkdowns in a periodic report. While this metric reflects good performance for a rolling 12-month period, the most recent period shows a decline in observations. NWP has taken actions to reverse the negative trend.

NWP workers expressed concern about several issues that continue to pose challenges to managers: airflow/air quality in the underground, radiological conditions and risk of contamination spread, and heat stress. Many underground workers interviewed identified the need for additional ventilation as their highest priority. NWP is aware of the air quality and airflow concerns. It is working with DOE and the New Mexico Environmental Department to find long-term solutions. Construction has already begun on an additional ventilation system, but will not be complete for an estimated 2 years.

Worker concerns about radiological controls are more difficult to address because they perceive the radiological risks are greater than the physical hazards of the mine. A lack of commercial experience outside of WIPP by radiation control technicians (RCT) exacerbates this issue. Contract RCTs from other sites understand the radiological conditions and that As Low As Reasonably Achievable (ALARA) includes the term "reasonable." Contract RCTs are more likely to accept a slightly higher radiological risk when balancing radiological hazards with the increase in occupational hazards introduced by additional personal protective equipment (PPE). Locally trained and qualified RCTs sometimes perceive these "outside" trained RCTs' approach as minimizing or ignoring the radiological risks.

NWP is considering changing radiological posting in the mine to permit more work without respiratory protection, but workers are concerned about "down posting" and the potential for increased exposure even though that exposure would be far below regulatory limits. Altering radiological postings based on current conditions and expected work is a common practice in the nuclear industry and at other DOE sites. NWP believes this approach would more effectively balance the radiological and occupational hazards. In addition, NWP should look for opportunities to send locally qualified and trained RCTs to other sites with higher contamination levels to supplement their experience and help them better understand the comparative risks between industrial, mine, and radiological controls.

Opportunity for Improvement: NWP should look for opportunities to send locally qualified and trained RCTs to other sites with higher contamination levels to supplement their experience and help them better understand the comparative risks between industrial, mine, and radiological controls.

NWP is exploring the use of new technologies to combat heat stress. Industrial hygienists are evaluating real-time physiological monitoring for heat stress in the underground. This approach, used extensively at other sites, such as the Hanford and Savannah River sites, has the potential to greatly improve industrial hygiene's (IH) ability to mitigate the risks from heat stress to underground workers.

Another mine safety credibility issue involves the use of the MX4 multi-gas monitors. There have been numerous instances when the MX4 alarms have gone off, interrupting work activities. These alarms occur for a variety of reasons, including instrument failures. Industrial hygienists

set the alarms at a point where the device alerts personnel to a high reading, but below levels that will be immediately harmful, providing workers the opportunity to stop work and allow the condition to clear.

When alarms occur, IH personnel conduct additional monitoring before work resumes. In many cases, workers are wearing breathing zone monitors that show exposures well below IH limits when alarms occur. The result is workers perceive these alarms as "false alarms" and have come to consider the instruments as unreliable due to the frequency of alarms, while a few workers believe the IH sampling results showing low or no exposure are wrong.

The workers' lack of trust in the MX4 and the IH sampling program has conditioned some workers to question alarms. This has created the potential for workers to ignore actual alarms and not react properly, or believe they are being exposed to other unidentified chemicals. NWP continues to encourage workers to stop work when the alarms occur. IH has also increased monitoring and is posting sample results.

Affected workers, however, may not read these postings, or they may not understand how to interpret the results. To help workers understand sampling routines and results, NWP should improve its IH technical basis, link it to the basis of knowledge for incoming waste shipments, and ensure the workers are briefed about the sampling protocol prior to waste receipt and handling. NWP should also ensure it discusses IH sampling results with workers, not just post results, and give workers an opportunity to ask questions about the sampling results.

Opportunity for Improvement: NWP should improve its IH technical basis, link it to the basis of knowledge for incoming waste shipments, and ensure the workers are briefed on the sampling protocol prior to waste receipt and handling.

Opportunity for Improvement: NWP should ensure it discusses IH sampling results with workers, not just post results on a bulletin board, and give workers an opportunity to ask questions about the sampling results.

NWP continues to use the Barrier Busters Committee to address rumors and communication issues as they arise. The committee consists of high-level managers, safety personnel, and workers. When concerns are brought to the committee's attention, senior managers provide as much information as they have and allow the workers on the team to disseminate the new information to the workers onsite. The Team attended the Barrier Buster Committee meeting and was impressed with the communications between senior managers and workers. However, interviews with underground workers demonstrated communication continues to present challenges, especially on the back shift.

For example, employees interviewed did not understand why NWP has not closed Panel 7 to mitigate the radiation issues in the mine. Workers also wondered why NWP does not use an available continuous mining machine to improve ground control. Explanations for most of these issues raised by the miners were available, but underground workers either had not heard or did not believe the explanations.

The committee recently recruited more underground workers to help disseminate information in the underground. Previously, the committee had difficulty recruiting underground workers

because meetings are held above ground, and supervisors were unwilling to release workers to participate in the meetings. During an All Hands Meeting, one of the committee members made a plea for additional underground workers, and three people volunteered. NWP should ensure supervisors support workers' attendance at the Barrier Buster Committee meetings to improve communications of these issues and provide information on the company's priorities and timelines for addressing concerns.

Opportunity for Improvement: NWP should ensure supervisors support workers' attendance at the Barrier Buster Committee meetings to improve communications of these issues and provide information on the company's priorities and timelines for addressing concerns.

Some managers have been slow to adopt the practices and cultural changes desired by NWP and modeled by the new COO. NWP has implemented a "Safety Bucks" program that provides a means for supervisors, managers, safety personnel, and committee members to give workers an immediate award. Workers collect the safety bucks and use them to purchase items in the safety award store. NWP also initiated its "Safety Connect" process where workers complete a set of safety tasks then submit the completed card for a cash award drawing.

Underground workers did identify that some direct supervisors were issuing "Safety Bucks" or promoting "Safety Connect," but those programs were more effective above ground than in the mine. The underground workers stated that their supervisors often verbally praised them, but only received "Safety Bucks" from environment, safety and health personnel or senior managers when they were in the mine. Some workers expressed concerns or unwillingness to stop work on the backshift underground because they had heard managers complain about the number of stop-works.

Those managers had not demonstrated to their workers that stop-work resulted when work was not properly planned or managed, and those managers did not recognize their role in creating conditions that led to stop work. Further, those managers had not followed the COO's model and earned the workers' trust. Consequently, some workers continue to perceive that their managers respond negatively when safety questions appear to interfere with production goals.

Conditions have improved since January 2018, and fewer workers are expressing concern about their managers. NWP has continued efforts, particularly in the mining organization, to ensure all managers and supervisors are present and visible in the work areas, accept and honor workers' concerns for safety, and model the leadership behaviors that build trust, should lead to the cultural transformation NWP desires. NWP needs more time to prove to the workforce that recent improvements will endure.

A recent event added to the already strained mine safety credibility. The week before this assessment, the site experienced high winds and storms. NWP decided to close the site to prevent exposing workers to these hazardous conditions during their commute and avoid problems with surface support equipment. Thirty-six workers were in the underground when NWP made this decision. Those workers were on the Waste Hoist exiting the underground when a nearby lightning strike caused a power surge and interruption. Power was quickly restored on the surface, but part of the Waste Hoist interlocks that prevent movement of the hoist when it is locked at the bottom of the shaft caused the hoist to stop, stranding the workers at the 500-foot

level. In order to operate the hoist, an electrical worker had to use another conveyance and reset the hoist interlocks in the underground. NWP had to call a worker in to perform this operation because the only qualified electricians' onsite were stranded in the hoist.

By the time these logistical problems were solved, workers had been stranded on the Waste Hoist for almost 3 hours. Communication with the stranded workers was poor, and some were stressed by the heat and the need to use restroom facilities. NWP held a fact-finding meeting a few days later, but only a portion of the stranded workers were present, further aggravating workers. Some personnel reported to the Team that the fact-finding meeting was ineffective and focused on blaming personnel rather than establishing all the facts. The result was that the incident contributed to some workers' continued distrust of NWP.

NWP continues to struggle with balancing the risks to underground workers from mine hazards versus nuclear hazards. The foremost example of this is the need for additional ventilation in the mine. While long-term plans include the construction of additional filtered ventilation, there is an immediate need. Simultaneous operations, such as ground control and waste emplacement, require more ventilation.

DOE and the State of New Mexico are concerned that the potential risks from releasing unfiltered radioactive contamination is greater than the immediate risks posed to workers from fossil-fueled equipment and thermal stress from higher mine temperatures. Recent worker concerns and IH monitoring have demonstrated immediate risks to workers from inadequate ventilation. The February 2014 Americium release has been evaluated by both DOE and the Environmental Protection Agency and demonstrated that the environmental effects of the release were negligible, yet NWP and Carlsbad Field Office have not been able to convince regulators that the existing air quality issues in the mine outweigh the potential risk of radiological release.

Another example of ventilation problems includes the requirement for workers to wear respiratory protection while working in Panel 7 when the airborne contamination levels do not justify their use (see previous discussion about ALARA). While there may be activities that warrant the additional respiratory protection, such as ground control (bolting and milling), workers can probably perform other activities without respiratory protection as long as NWP uses continuous monitoring. The current approach, while providing protection from the low potential and actual measured airborne radioactive contamination concentrations, imposes a much higher and immediate hazard to workers from heat stress when wearing respirators.

NWP has had some success helping workers reduce exposure to industrial safety hazards in the mine. For example, MSHA regulations require workers in the underground to wear mining helmets at all times to help protect them from rockfalls, bolt failures, or other overhead hazards. At the radiological transition point in the underground, workers must don anticontamination clothing, including hoods, which requires them to temporarily remove their mining helmets. NWP has installed steel frames with overhead protection for use when donning PPE. In these areas, workers can safely remove their mining helmets. To allow for faster cool down and recovery during breaks, NWP has also installed these structures in the underground lunchrooms. NWP should continue to identify and evaluate instances where nuclear risks and mining risks conflict, and implement controls that balance the risks to workers.

2018 Opportunity for Improvement:

3. NWP needs to become more adept at implementing change management, including consideration for the workers affected by the change, and ensure managers use the process.

Within the past few months, NWP has added a "mission excellence" manager with an extensive background in the Navy's Nuclear Program. He is also a certified ProSci® change management specialist in the ADKAR® model (Awareness, Desire, Knowledge, Ability, ReinforcementTM). Rather than immediately trying to impose the tenets of the navy nuclear program, he is working to instill the program basics and progress the necessary culture from the bottom up. This approach has proven effective at other DOE-VPP sites.

A certified individual, acting as an internal change management consultant, helps organizations develop change management plans. He is also at the beginning stages of changing the working philosophy of the site to help NWP more efficiently manage work through more structured scheduling and project management approaches. NWP added the change management process to the 2-week Executive Forum, and the 4-week Leadership Academy training programs to help managers and supervisors recognize the value of this process for all changes, big or small. He expects the focus on mission excellence will affect all aspects of NWP work, including safety. NWP anticipates, and the Team agrees, that by becoming more adept at planning and scheduling work and managing change, the work delays and stress associated with worker and manager frustrations will become more manageable and help rebuild trust and confidence between workers and managers.

To help implement the new change management approach, NWP managers should strive to use it for small changes that occur frequently. For example, NWP should screen procedure changes using the ADKAR model to implement the change. Other changes might include policy changes, organizational structure changes, or even new safety campaigns coming out of the many safety committees. Screening these changes may only require a few hours, possibly days to identify change management strategies, but the time saved from avoiding misunderstandings or confusion will provide many dividends.

2018 Opportunity for Improvement:

4. NWP needs to maintain the current level of committee activity over the coming months to ensure these committees become fully established.

In 2018, the Team concluded that Zone committee meetings and the attendees of the Operational Safety Team (OST) were enthusiastic and contributed freely to all the discussions. The Zone 10 contributor had developed a tracking system on the WIPP SharePoint for use by all the zone committee chairs. The SharePoint site helped other zone safety committees to look for similar issues. However, the Team determined that the Zone Committees, OST, and VPP Committees were relatively new in their development and wanted to ensure that the programs had sufficient time to mature.

The Zone Safety, VPP, and the Barrier Busters committees have matured and flourished in the past year. Committee activities have increased, worker participation has increased, and in most cases, more people are volunteering to be on the committees. The members of the committees demonstrated a sense of pride in their work, and believed their role was important to the NWP mission.

The Team attended the Zone 7 safety committee (one of the committees the Team met with last year) and acknowledges the continued energy in the committee. The members demonstrated good communication and interest in their mission implementing several initiatives to improve safety at the WIPP site. The committee members discussed employee-raised safety concerns and the successful resolution of many of those items through the "Fix It Now" process in the past month. The Zone 7 committee represents the engineering division and includes roadway and parking lot safety for the WIPP site. The committee members observed that during the morning and evening "rush," several employees were driving the wrong way in the one-way parking lot lanes. The members discussed methods to best address this safety concern and ultimately decided to request volunteers to monitor morning and evening shift parking (prior or following working hours) and have those volunteers perform "Speak Up, Listen Up" (SULU) observations with those workers identified driving unsafely. Several members immediately volunteered to arrive early and stay late to perform the monitoring and perform the SULU observations. The group also requested that members consider and recommend the best methods for the committee to roll out its distracted driving campaign safety blitz at the next meeting.

The NWP VPP committee had similar energy to that observed in the Zone 7 meeting. Both senior managers and workers participated on the VPP committee. The workers interacted well and shared ideas that had been successful in their organizations. For example, a security patrol member discussed the success of a newly procured vest vent used by patrol to reduce heat stress from protective clothing. He recommended the miners evaluate the device to see if it might help reduce heat stress in the underground. The VPP committee was also evaluating and soliciting suggestions from the committee to improve methods to communicate VPP activities across the site.

NWP implemented the "Fix it Now" maintenance process, which has been effective in addressing simple repairs quickly. Work covered by "Fix it Now" is strictly limited to prescribed work that is skill-of-the-craft. The "Fix it Now" process has greatly improved the Zone safety committee's ability to quickly address employee-raised maintenance concerns and improved employee support for the zone committee's efforts.

The VPP Committee saw the "Safety Connect" program at the last Voluntary Protection Programs Participants' Association, Inc. conference and brought the idea back to NWP. The "Safety Connect" is a quarterly program that circulates safety connect cards with 14 safety activities that workers can perform and be credited for the activity by their supervisor. Workers receive a prize if their names are picked at a quarterly drawing. Safety activities for the "Safety Connect" cards are revised each quarter.

The Team determined that the OST demonstrated improvement over the past year, soliciting inputs from all the active Zone Safety Committee representatives to identify potential improvements across the site. The committee is doing a good job of identifying and elevating issues, and helping resolve those issues.

The Team did identify one Zone Safety Committee (Zone 11) that has experienced difficulty recruiting members and getting worker involvement through the committee and OST. Zone 11 represents the backshift underground workers, and their involvement is essential for NWP's success in communicating worker safety concerns and ensuring worker acceptance. Based on Team discussions with the workers, the Zone 11 Safety Committee ceased functioning for several months prior to this assessment and continues to have difficulty identifying volunteers

from the backshift underground workers to serve on the committee. Some workers in the underground discuss issues with their coworkers that the Zone Safety Committee could effectively address. However, the lack of an active committee hinders communication of those issues, which, in turn, are not resolved to workers' satisfaction. Poor communication then contributes to workers' belief that managers do not care, creating additional trust issues. The absence of managers in the underground exacerbates this problem.

Interviews with backshift underground workers identified that they were not aware of Zone 11 Safety Committee activities. The workers indicated the chair had not been supporting the Zone 11 Committee for the past few months, but had indicated to some of the workers present that he was going to be chairing it again in the near future. The lack of participation in the Zone 11 Committee is in marked contrast to the other zones, VPP, and OST committees' continuing improvements. However, it does demonstrate that the backshift underground workers are not currently well represented, which contributes to the negative views the workers expressed regarding managers' cooperation and commitment to safety. The weakness of the Zone 11 Safety Committee also contributed to workers' perceptions about the previously discussed hoist event and poor communication with workers regarding causes and corrective actions. NWP should continue efforts to revitalize the Zone 11 Safety Committee and support worker involvement in the process to improve communications with the backshift underground workers.

Opportunity for Improvement: NWP should continue efforts to revitalize the Zone 11 Safety Committee and support worker involvement in the process to improve communications with the backshift underground workers.

Another issue among the backshift workers was that while some training has been performed as "block" training during the backshift, some training requires backshift workers to report at 6:00 a.m. after their shift ends at 1:00 a.m. the previous day. The commute times associated with working at the site means some workers get less than 4 hours rest prior to returning to the site for training. The workers described that the lack of rest introduces the potential hazard of sleep-deprived driving and makes it harder for them to be attentive in class. NWP should work to improve its training schedules to ensure backshift workers can safely attend classes and learn without excessive fatigue. Alternatives could include special training, conducting block training, or implementing a training shift when workers could periodically rotate to a day shift for training.

Opportunity for Improvement: NWP should work to improve its training schedules to ensure backshift workers can safely attend classes and learn without excessive fatigue.

2018 Opportunity for Improvement:

5. NWP needs to take a broad suite of actions to repair its relationship with the United Steel Workers (USW) local that opens communication, demonstrates managers' willingness to listen, and restore trust between NWP and USW.

After the 2018 assessment, the NWP president/project manager began reaching out to the USW local president and safety representatives. This outreach included making weekly walks around

the site with USW. These VPP walks helped the company begin to regain some workers' trust. NWP has also replaced or reassigned several managers.

NWP continues to sponsor the Leadership Academy. This 4-week training program, conducted in partnership with New Mexico State University, takes managers and supervisors away from the work environment and provides them with many leadership tools and techniques to help them become more effective in leading rather than ordering. The course includes the "soft" skills of dealing with people, including communication, counseling, change management, time management, and the systems and processes they need to implement to accomplish the NWP mission. In 2018, NWP expanded the Leadership Academy to include a 2-week Senior Leadership Academy to expose the senior leadership team to a broader range of interpersonal skills.

The new COO/Deputy Project Manager has had a significant impact on all these Opportunities for Improvements. He has made underground qualification (40-hour training) a priority for all managers with underground responsibility, been present frequently (several hours per week, or even per day) at work locations, both in the underground and the surface. He has tried to learn the first name of every worker he sees at the site, making it a point at every interaction to ensure he listens to worker concerns, and ensure those concerns are addressed. Every worker contacted by the Team recognized his individual actions.

The new COO is also holding managers accountable for being present in work areas. He began with establishing manager expectations, and then he uses the managers' performance evaluations and goal-setting processes to hold them accountable. He is overcoming the many excuses for not being in the work areas by prioritizing training, creating new offices in the underground, and leading by example. During the second week of the assessment, NWP implemented a new policy that prohibits senior (Level 1) managers from scheduling meetings from 7-9 a.m. They are expected to be out of their offices helping their direct reports ensure work is beginning so workers are not left sitting around waiting for their managers and supervisors to finish work planning.

Many workers at NWP expressed their gratitude and respect for the new COO, demonstrating the effectiveness of his approach at earning trust, and making workers feel like valued members of the team. As discussed earlier, some middle managers and a few senior managers, have not yet adopted the COO's methods. Both the president/project manager and the COO continue to press those managers for personal commitment and change.

In particular, managers are less visible to personnel on the backshift, particularly backshift underground. A recent safety culture assessment by DOE's Office of Enterprise Assessments (EA) identified this condition, but NWP's annual self-assessment report from 2018 did not. Many personnel encountered by the Team were aware of communication and participation issues with personnel working underground, particularly on backshift. However, NWP did not identify these issues in their annual self-assessment. For NWP to fully restore the trust of workers, it should ensure it performs and documents critical self-assessments and identifies actions and goals that respond to those self-assessments rather than waiting for outside groups to identify the problems. **Opportunity for Improvement:** NWP should ensure it performs and documents critical self-assessments and identifies actions and goals that respond to those self-assessments rather than waiting for outside groups to identify the problems.

Conclusions

In general, the Team believes the safety and health program at WIPP protects workers from overexposures to hazardous materials and provides them with the tools and training they need to safely perform their mission. NWP, DOE, and all other stakeholders agree that air quality and ground control in the underground remain the two foremost issues, and NWP is trying to address those issues within the established regulatory boundaries. The Team believes, based on observations, that NWP controls personnel exposures within regulatory limits during the course of their normal work and that controls in place are adequate to protect workers.

Progress on all the previously identified needs has been substantial, but the most effective actions addressing the relationship between NWP and the bargaining unit have only been in place since November 2018. NWP has improved its relationship with the workforce. Some managers still need to demonstrate their willingness to reach out to workers, be visible in the work areas, and understand workers' concerns. NWP needs to convince the workforce that improvements made over the past 6 months are permanent. Activities begun recently that will further improve the relationship need time to mature and establish the new normal for WIPP.

The DOE's Office of Enterprise Assessments (EA) began an investigation of air quality issues and potential overexposures of workers to VOCs, diesel exhaust particulates, and other potential hazards. The EA investigation team was in the early stages of the investigation, so its conclusions were not available for consideration in this assessment. The DOE-VPP requires the Team to consider the nature and validity of any complaints received by DOE and the resolution of those problems. A small, but very vocal, group of workers disagrees with the rest of the workforce's belief that WIPP is a safe place to work. The Team needs to evaluate this dichotomy once EA completes its investigation. The Team needs to consider the results of the EA investigation, including any identified corrective actions, before it can make a definitive recommendation to elevate NWP to Star status. The Team recommends that NWP continue to participate in DOE-VPP as a Merit participant.

Attachment 1

Injury Incidence/Lost Workdays Case Rate (Nuclear Waste Partnership)								
Calendar	Hours	TRC	TRC Incidence	DART*	DART* Case Rate			
Year	Worked		Rate per 200,000	Cases	per 200,000 hours			
			hours					
2016	1,643,623	6	0.73	3	0.36			
2017	1,577,500	15	1.90	9	1.14			
2018	1,583,301	9	1.14	2	0.25			
3-Year Totals	4,804,424	30	1.25	14	0.58			
Bureau of Labor Statistics (BLS-2017)								
average for NAICS** 562211 Hazardous								
Waste and Treatment Disposal.			3.8		1.3			

Injury Incidence/Lost Workdays Case Rate Subcontractors (NWP Subcontractors)								
Calendar	Hours	TRC	TRC Incidence	DART*	DART* Case Rate			
Year	Worked		Rate per 200,000	Cases	per 200,000 hours			
			hours					
2016	267,859	0	0.00	0	0.00			
2017	284,356	0	0.00	0	0.00			
2018	270,142	0	0.00	0	0.00			
3-Year								
Totals	822,357	0	0.00	0	0.00			
Bureau of Labor Statistics (BLS-2017)								
average for NAICS** 562211 Hazardous								
Waste and Treatment Disposal.			3.8		1.3			

* Days Away, Restricted, or Transferred

**North American Industry Classification System

NWP's 3-year average TRC rate is 69 per cent less than the 2017 rate for a comparable commercial industry. NWP's injury and illness rate peaked in 2017 and reflected the concerns raised by the Team in the January 2018 report. The reduction in the past 12 months demonstrates that actions to increase worker involvement and rebuild trust are helping reduce injuries. The Team reviewed the 15 recordable cases from 2017 and did not identify a common cause or trend. The number of cases in 2018 decreased. The NWP injury incidence rate remains below its comparison industry average and meets expectations for DOE-VPP participation.

Attachment 2

Opportunities for Improvement

Opportunity for Improvement	Page
NWP should look for opportunities to send locally qualified and trained RCTs to other sites with higher contamination levels to supplement their experience and help them better understand the comparative risks between industrial, mine, and radiological controls.	5
NWP should improve its IH technical basis, link it to the basis of knowledge for incoming waste shipments, and ensure the workers are briefed on the sampling protocol prior to waste receipt and handling.	6
NWP should ensure it discusses IH sampling results with workers, not just post results on a bulletin board, and give workers an opportunity to ask questions about the sampling results.	6
NWP should ensure supervisors support workers' attendance at the Barrier Buster Committee meetings to improve communications of these issues and provide information on the company's priorities and timelines for addressing concerns.	6
NWP should continue efforts to revitalize the Zone 11 Safety Committee and support worker involvement in the process to improve communications with the backshift underground workers.	10
NWP should work to improve its training schedules to ensure backshift workers can safely attend classes and learn without excessive fatigue.	11
NWP should ensure it performs and documents critical self-assessments and identifies actions and goals that respond to those self-assessments rather than waiting for outside groups to identify the problems.	12