



**SOUTHWEST RESEARCH AND INFORMATION CENTER**

**P.O. Box 4524 Albuquerque, NM 87196 505-262-1862 FAX: 505-262-1864 www.sric.org**

November 12, 2015

Ricardo Maestas  
New Mexico Environment Department (NMED)  
2905 Rodeo Park Drive, Building 1  
Santa Fe, NM 87505

RE: WIPP Class 2 Permit Modification Request package

Dear Ricardo,

Southwest Research and Information Center (SRIC) provides the following comments on the Class 2 permit modification request package that was submitted by the permittees on September 8, 2015, according to their public notice.

SRIC appreciates that the permittees provided a draft of the proposed request and that representatives of the permittees as well as NMED met with SRIC and other citizen group representatives on May 27, 2015. SRIC continues to believe that such pre-submittal meetings are useful and supports continuing that "standard" practice in the future.

Nevertheless, there are several topics in the request package that should not be approved because the proposed modifications are not protective of human health and the environment and are not properly class 2 requests.

In addition, the Permittee's compliance history and the poor safety performance of WIPP requires more stringent, not less protective, permit provisions. Moreover, the fundamental failures of the permittees, particularly Nuclear Waste Partnership (NWP), raise serious concerns about whether that company can safely operate the facility and comply with permit provisions.

Given this situation, NMED should deny many portions of the request. NMED should also require the permittees to have a public process to discuss comprehensively the provisions of the permit that they intend to modify in order to re-start operations at WIPP. The public process should include one or more public meetings, similar to pre-submittal meetings, and discuss what permit modifications are required, whether there should be multiple requests or one or two "mega" requests, and the proper classification for those requests. Such a process could result in a better use of public and NMED resources than the piecemeal, unilateral approach that is being pursued.



### Compliance history

NMED must consider the permittees' compliance history, including violations of the Hazardous Waste Act or any permit condition, and may deny any permit modification based on that history. 74-4-4.2.D(6) NMSA. In its Administrative Orders of February 27, 2014; May 12, 2014; May 20, 2014; and the Compliance Order of December 6, 2014, NMED established that the permittees had violated multiple permit provisions over months prior to the February 2014 fire and radiation release events. Such violations, which have not been remedied in the more than 21 months since that time, must be weighed heavily in consideration of any permit modification requests. Given that history and current practice of non-compliance, the permittees must fully justify any class 2 or 3 permit modification requests. In the absence of such justification, requests should be denied.

### NWP's inadequate performance

NWP became the Management and Operating Contractor and a permittee on October 1, 2012. In the more than 37 months since then, the facility has operated for about 16 months. Because of the inadequate performance of NWP, the facility has not been receiving or disposing of waste for the past 21 months and will not do so for many months into the future. Based on that record, the ability of NWP to safely operate the facility is in serious doubt. For the majority of its time as operating contractor, and perhaps for the entire timeframe, NWP has been in violation of multiple permit provisions. Thus, the capability of NWP to comply with permit requirements is seriously in question since it has not demonstrated that it can do so. Given NWP's inadequate safety performance and lack of compliance with permit provisions, NMED should not reduce the stringency of the permit, which, in essence, rewards the permittees for violations. Multiple topics of the modification package would reduce the stringency of the permit and reduce protection of public health and the environment. Thus, those requests should be denied.

### WIPP's fundamental operating basis has been irrevocably violated

The WIPP operating philosophy is incorporated into the permit: "Start Clean, Stay Clean" (Attachment G-1e(2)(b)). But that philosophy and practice have been violated and can never again be achieved because of the substantial contamination of thousands of feet of tunnels in the underground hazardous waste disposal unit. As NMED Secretary Flynn has correctly stated, the fire and radiation release and the contamination were never supposed to happen. That fundamental promise to the public and premise for the permit has been irreparably violated. WIPP can no longer fulfill the "Start Clean, Stay Clean" principle that is part of its essential mission, the basis for public trust, and a fundamental operating basis for the permit. Weakening permit requirements will make it even more likely that additional "events" will occur.

Moreover, because of the changes in operating philosophy and practice, many of the permit modification requests would "substantially alter the facility or its operations" and, thus, are class 3 requests. 20 NMAC 4.1.900 (incorporating 40 CFR 270.42(d)(2)(iii)).

### Denial of permit modification request topics

Pursuant to 20 NMAC 4.1.900 (incorporating 40 CFR 270.42(b)(6)(i)(B)) and its historic practices, NMED may deny class 2 modification requests. SRIC strongly believes that at least four of the topics must be denied because they would weaken the stringency of permit requirements and reduce protection of human health and the environment. Thus, the four changes would not meet the requirements of the Hazardous Waste Act to provide such protections.

\* Topic 2 - Change the repository VOC monitoring locations

The request would eliminate the underground volatile organic compound (VOC) monitoring stations A and B. The primary reason given to move repository monitoring locations to the surface is because of the difficulty of VOC monitoring in the radiologically contaminated underground, including because sampling equipment might be radiologically contaminated (Request, p. 5). That contamination merits increased surface and underground monitoring, not the elimination of the underground monitoring. This proposed change is totally contrary to 15 years of WIPP permit requirements, which have always provided for two underground sampling locations. That monitoring detected carbon tetrachloride exposures above expected amounts in the underground starting in 2009 that resulted in operational changes and increased protection for workers and the public. Eliminating underground VOC monitoring would significantly reduce protection of human health and the environment, so the modification should be denied.

Because of air dispersion, air in the underground is considerably different than air that has passed through the exhaust shaft and out the surface exhaust. Measuring VOCs in the underground is a more accurate reflection of the exposures of workers and others in the underground. To support surface monitoring, the permittees rely on models that are not fully described, especially the URS, 2010 report, which is mentioned by not provided. (Request, p. C-2).

SRIC also strongly objects to the proposed change to the fundamental basis of underground VOC monitoring, which has been to measure VOCs in the underground air in relation to numerical concentrations of concern to protect workers and public health and the environment. The request is to measure VOCs only in the disposal rooms. In other areas of the underground there would be not monitoring stations. Instead, the underground program would be changed to surface monitoring as the basis for calculating the risk to “non-waste surface worker.” Attachment N-1b. The request even proposes to add the qualifier “may” to whether VOCs are in the underground air – Attachment N-1b, first line. Of course, as the permit has stated for more than 15 years, VOCs are in CH and RH waste that has been emplaced at WIPP and VOCs are continually released.

The request does not even mention the permittees’ supplemental ventilation system (SVS) that would exhaust some of the underground air through the Salt Handling Shaft. See Attachment 1. The permittees must provide a modification request that fully discusses the revised ventilation system, including, among other things, how VOCs will be monitored in the SVS.

SRIC believes that underground VOC monitoring is required for both the filtration mode and the SVS air in order to protect workers and public health and the environment. That VOC monitoring is not included in the Appendix C modeling, nor is the SVS discussed in the request, which is a gross incompleteness and inadequacy of the request, which requires its denial.

\* Topic 4: Change in the sampling duration for VOC Monitoring

As described in Topic 2 above, SRIC strongly objects to the proposed change in location from the underground to the surface for repository VOC monitoring. SRIC believes that this sampling duration request also must be denied because it is not adequately justified. The stated rationale for the change in sampling duration is that it “may remove some of the variability that is observed in the VOC results” (Request, p. 10). Variability is not the proper criterion to support such a change.

Protection of human health and the environment is the proper criterion, and the request does not specifically address that standard. If there are higher levels of VOCs during a normal work shift, as can be captured in the existing sampling duration, as compared to 24-hour duration, for which for the majority of the time there are no underground or surface workers, then the existing sampling duration should be maintained. The request does not provide verified data that the longer sampling is more protective of public or worker health, as compared with the sampling duration currently required.

The request also would change the duration of sampling in disposal rooms. Rather than six-hour samples, the duration would be “short-duration time-integrated samples,” which are not defined or justified. Such vague phrasing is not enforceable by NMED, a further reason to deny the change.

**\* Topic 5 - Revise the method of determining compliance with the surface non-waste worker environmental performance standard for air emissions**

The proposed modification is for a major change in determining compliance with air emissions for ten volatile organic compounds. The proposal would eliminate calculated “concentrations of concern” for VOCs, which reduces protection of public health and the environment. The proposal is extremely complex, so it should be considered as a class 3 modification request. For example, more than a page of the request is four technical formulas. The request also includes significant changes in the remedial actions required, all of which SRIC opposes. There is no adequate basis provided for any of the proposed remedial action changes, which are also vague and unenforceable. Again, these are substantial changes to facility operations that should be denied. If they are to be considered in the future, the changes should be considered as a class 3 modification request.

The permittees also underestimate the exposure risk for workers, as they use 10 years “based on typical work practices for employees at the WIPP site” (Request, p. 12). Such a number is clearly not justified nor conservative. First, the request includes no data on actual employee work practices to support the 10-year timeframe. Second, there is no limit on the number of years workers can be at WIPP. Thirdly, the permittees routinely point out that many workers have been at WIPP for more than 10 years, so that maximum exposure is more than ten years. Fourth, SRIC representatives visiting WIPP always encounter workers that have been on the job for 15 years or more. Since the permittees intend WIPP to operate for at least 30 years, at least that duration must be used.

Moreover, SRIC strongly objects to the permittees proposed risk level. Scientific and health data clearly show that a risk level of  $10^{-6}$  is more protective of public health and is a reasonable and achievable risk level. Given the multiple carcinogens that are in the WIPP wastes and the fact of substantial underground radiation contamination, which also is a carcinogen, can now continuously affect workers, human health and the environment for as long the site is open, the risk level should be more protective, including for the “non-waste surface worker.” The permittees have re-opened consideration of the risk levels for VOCs in their permit modification request, and a risk level of  $10^{-6}$  should be the basis for all VOC concentrations of concern or risk levels. The proposed risk levels for the surface non-waste worker in the modification request are an order of magnitude insufficient and should not be approved.

There is substantial support for this more stringent risk level in Environmental Protection Agency (EPA) practice. For example, in both cancer and non-cancer assessments, that agency has defined 1 in 1,000,000 excess risk as a de minimis risk level. Further, the President's Cancer Panel's April 2010 report states clearly that "The Panel was particularly concerned to find that the true burden of environmentally induced cancer has been grossly underestimated."<sup>1</sup> Thus, a more protective risk level of  $10^{-6}$  should be used for VOCs. Because of the complexity of understanding and establishing risk levels, the matter should be considered in a class 3 modification request.

In addition, some of the proposed "Recommended EPA Risk Factors" shown in Table 4.6.2.3 are not the same as shown in the EPA IRS database - <http://www2.epa.gov/iris>. The modification request does not explain those discrepancies. In addition, the Risk Factors proposed in Table 4.6.2.3 do not at all correlate with Appendix C. Both of these matters again demonstrate the complexity of the proposed change, which requires it be considered as a class 3 modification request.

\* Topic 6 - Remove the minimum running annual average (RAA) mine ventilation exhaust rate. The reason to eliminate the 260,000 standard cubic feet per minute (scfm) permit requirement, which has always been in the permit, is because it can no longer be met because WIPP's ventilation is limited to 60,000 scfm in filtration mode (Request, p. 6). That is not an adequate reason to eliminate a provision of the permit that protects human health and the environment, as well as underground workers. The request should be denied. Any request to change the RAA should be in a comprehensive class 3 permit modification that describes the new ventilation system and demonstrates that it would be at least as protective of public health and the environment during waste handling operations as the existing permit requirements.

SRIC has stated repeatedly during the permitting process, the permit renewal process, and modification requests that the primary concern is that adequate ventilation always be maintained in the Underground Hazardous Waste Disposal Units (HWDUs). The concern is reinforced by the measured levels of VOCs in the Underground HWDUs during the past six years prior to February 2014, during which time workers were exposed to higher levels of carbon tetrachloride than were contemplated when the permit was issued in 1999.

Now underground workers and the public could be chronically exposed to VOCs and radioactivity. The increased health effects of those carcinogens have not been studied in WIPP workers and the public (nor included in determining EPA IRIS risk levels). The ventilation rate is a key requirement for any WIPP operations and should be included in the permit. Ventilation also has an important element in worker exposures. The existing RAA is much more protective of human health and the environment than no RAA, as the permittees propose. The request would reduce protection of public health and the environment and should be denied.

Moreover, as the fire and radiation release demonstrated, the ventilation system does not fully control underground air flow as it is supposed to do. For example, air flow and smoke exhausted through the salt handling shaft during the February 5 fire, rather than out the exhaust shaft. The radiation release contaminated areas in the underground that were supposed to have had no air

---

<sup>1</sup> [http://deainfo.nci.nih.gov/advisory/pcp/annualReports/pcp08-09rpt/PCP\\_Report\\_08-09\\_508.pdf](http://deainfo.nci.nih.gov/advisory/pcp/annualReports/pcp08-09rpt/PCP_Report_08-09_508.pdf), Cover Letter, p. 5 of PDF.

flow or were upstream from the described ventilation flow. Given those realities, the ventilation system is an essential part of the facility operations and the permit, and the minimum repository air flow requirements must be maintained.

Other Topics

\* Topic 1 - Add TCE to the VOC target analyte list for VOC monitoring

SRIC supports adding TCE to Table 4.4.1 and Table 4.6.3.2. SRIC also supports adding TCE in Table 4.6.2.3, but, as noted in Topic 5 above, SRIC objects to the values shown and removing the measured Concentrations of Concern.

\* Topic 3 - Change the type of sampling equipment for VOC monitoring

SRIC does not object conceptually to the changes in sampling equipment for VOC monitoring, because the requirements are to continue to meet EPA Compendium Method TO-15. However, the request does not provide sufficient detail to adequately support the modification. For example, the proposed sampling equipment has been used at WIPP (Request, p. 10), but there is no actual data provided comparing the performance and reliability of the proposed samplers with the existing sampling equipment. Second, there is no Quality Assurance data for the new sampling equipment. Third, the only technical citation is to Occupational Safety and Health Administration (OSHA) (incorrectly named as “Occupational and Health Administration” in footnote 8) Method Number: PV2120. However, that OSHA document states that the status of the method is “Partially validated.” The request does not explain how that is sufficient validation. Fourth, there is no specific discussion of the method in relation to EPA, not OSHA, requirements.

\* Topic 7 – “Minor editorial changes”

SRIC does not object to “minor editorial changes” that are properly class 1 modifications. However, many of the editorial changes cannot be approved because they relate to the substantive topics for which the requests must be denied. Rather than taking NMED resources to closely examine all of the supposed editorial changes, they should not be approved. Instead, after NMED’s determinations on the modification package, the permittees could submit a class 1 modification request to incorporate then necessary changes into the Permit.

Thank you very much for your careful consideration of, and your response to, these and all other comments.

Sincerely,



Don Hancock

cc: John Kieling

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 2, 2015

TO: Steven Stokes, Technical Director  
FROM: Dermot Winters, WIPP Cognizant Engineer  
SUBJECT: Waste Isolation Pilot Plant (WIPP) Activity Report for September 2015

**DNFSB Staff Activity:** S. Sircar, M. Dunlevy, P. Meyer, and D. Winters were onsite September 1-2 for site orientation in support of review of the WIPP Documented Safety Analysis Revision 5. R. Quirk was onsite September 14-18 performing site representative oversight duties. The Board's staff has averaged 3.0 man-weeks of oversight per month for the first 9 months of 2015.

**Annual Emergency Preparedness (EP) Exercise:** On September 16, WIPP held its annual full-scale exercise to demonstrate and evaluate their overall capability to recognize, respond, contain, and mitigate an emergency situation that may occur. Board staff member, R. Quirk, observed the exercise at the event scene and in the emergency operations center (EOC). The staff member judged the overall performance of the annual EP exercise to be adequate, although the EOC personnel over-characterized the drill accident event as a general emergency. The contractor plans to issue their report within the required 30 working days.

**Potentially Inadequate Safety Analysis (PISA):** The Waste Handling Building (WHB) Fire Suppression System (FSS) is operating in a degraded mode. This resulted in a PISA declaration, followed by a positive Unreviewed Safety Question determination (USQ) on September 18. An additional PISA was declared on September 14 regarding the lack of the required one degree floor slope in the remote-handling (RH) bay which is credited to direct spilled fuel away from the contact-handling (CH) bay. Absorbent socks have been placed along the roll-up and personnel doors between the bays to preclude entry of liquids into the CH bay. Members of the staff are tracking progress of both issues.

**Consolidated Evaluation of the Safety of the Situation (ESS):** In April 2015 DOE committed to consolidate nine ESSs into a simplified consolidated ESS document to reduce the likelihood of Technical Safety Requirement violations. The Board's staff reviewed the draft document and transmitted an agenda to support discussions in August. DOE submitted written responses to the agenda and members of the staff are evaluating the responses.

**Ventilation System Upgrades:** Progress continues on the installation of planned site ventilation system upgrades. All interim ventilation system (IVS) component repairs have been completed by the vendor with components scheduled to arrive back on site in October. Construction is complete on the concrete foundation pads. The supplemental ventilation system (SVS) fan is mechanically installed in the underground with electrical wiring planned for completion in October. The two systems are projected to be operable in early 2016. The IVS will upgrade the filtration capacity from 60 kcfm to 114 kcfm and the SVS will provide 130 kcfm of ventilation flow. Of note, once the SVS system becomes operable, emergency underground egress through the salt shaft will no longer be possible as the SVS exhausts out this shaft. The permanent ventilation system critical decision-1 conceptual design point is scheduled for October 30. Members of the staff are evaluating all three systems.