EPA United States Environmental Protection Agency

The WIPP Bulletin - 1996

"Protecting Public Health and the Environment"

Office of Radiation and Indoor Air

A Message From the New Director

By Frank Marcinowski
Director
WIPP Program

Two key principles have guided EPA's WIPP Program since its inception: 1) to protect human health and the environment from potential releases of waste from the WIPP repository; and 2) to maintain an open process whereby the public is involved and informed in EPA's regulatory process. As the new Director of EPA's WIPP Program, I want to assure you that I firmly believe in, and will continue to foster, these principles.

I come to the WIPP program with over 10 years experience in the federal government working on radiation issues. Beginning in 1985, I have worked as an inspector for the Nuclear Regulatory Commission Region 1, in King of Prussia, Pennsylvania and as a Health Physicist for the Department of Energy at the Oak Ridge and Los Alamos National Labs. In 1989, I began working as a Health Physicist for EPA's Radon Program in Washington, DC and for the past six years have served that program in various technical and managerial roles.

I am pleased to report that the WIPP program met several major milestones in the past few months despite government shut-downs and crippling snow storms: the 40 CFR part 194 Compliance Criteria were finalized in January 1996--one year after the proposed rule was issued; comprehensive comments were submitted to DOE on its Draft Compliance Certification Application also in January, 1996; and EPA's Compliance Application Guidance was made available for public comment in October 1995 and will be finalized in March 1996. The program is now focusing its efforts on conducting a credible scientific review of DOE's certification application.

I look forward to continuing to effectively implement the WIPP Land Withdrawal Act and we will continue to work with WIPP stakeholders throughout the certification process.

EPA Publishes Final Compliance Criteria for the WIPP

By Mary Kruger
Policy Analyst

EPA published its final Compliance Criteria for the WIPP in the Federal Register on February 9, 1996. The Criteria implement the generic transuranic waste disposal regulations issued by the Agency for the WIPP site. The issuance is mandated by the 1992 WIPP Land Withdrawal Act.

Before disposal operations may begin at the WIPP, the Department of Energy (DOE) must first submit an application that demonstrates that the facility will comply with EPA's radioactive waste disposal regulations, which were issued in final form in December 1993. EPA must then evaluate the complete application and determine if the WIPP, in fact, complies with the Agency's disposal standards. The criteria instruct DOE on the elements required in the compliance application so that it can be properly evaluated for compliance. These criteria apply only to the WIPP.

In January 1995, EPA issued proposed compliance criteria. Comments from the public were accepted through May 1, 1995. The comment period was subsequently re-opened from August 1 to September 15, 1995. The Agency received

many instructive comments resulting in substantial changes to the criteria.

In addition to publication of the Compliance Criteria, EPA developed:

- A Background Information Document describing the technical bases for developing the criteria;
- An Economic Impact Analysis, estimating any cost impact of the criteria that is not already imposed by existing regulations or requirements; and
- A Response-to-Comments Document, outlining the Agency's response to public comments on the proposed criteria.

These documents may be reviewed at any of EPA's four dockets.

The Final Compliance Criteria are divided into four subparts:

- Subpart A contains definitions of terms, references, and reporting requirements for DOE. It also describes the Agency's authority to modify, suspend, or revoke certification or re-certification.
- Subpart B describes the procedure for submission of the application, and specifies the content of the certification application and subsequent re-certification applications.
- Subpart C consists of requirements that apply to activities undertaken to demonstrate compliance with EPA's disposal standards. General requirements pertain to quality assurance and peer review of data and methods and the use of computer codes and models that simulate the performance of the WIPP. Containment requirements dictate that the disposal system must be designed to limit releases of radionuclides to specified levels for 10,000 years after the facility accepts its final waste for disposal.
    - Assurance requirements in Subpart C complement the containment requirements and further reduce the likelihood of excess radiation being released. For example, DOE must design both passive and active institutional controls. Passive institutional controls are permanent site markers and record keeping and/or archiving systems to assure that relevant information is passed on to future generations. Active institutional controls include guards patrolling the site. Subpart C also implements requirements in the disposal standards for protecting individuals and ground water from possible exposure to radioactive contamination from the WIPP.
- Subpart D describes the procedure that EPA will follow to include the public in its rulemaking process for both the certification and re-certification decisions. A proposed decision on whether or not the WIPP should open will be available for public comment. Hearings will be held in New Mexico and all input from the public will be considered before the Agency makes its final decision.

Technical Exchange Meeting

By Mike Eagle
Chemical Engineer

Imagine a destructive event sometime in the future; like a large meteorite striking the WIPP repository. Could such an event occur in the next 10,000 years? If it did occur, how much of the waste would be released?

On November 7th and 8th, EPA, DOE, state and local representatives and stakeholders met in Washington, DC to exchange ideas. Prior to this technical exchange, a comprehensive list of about 1,000 events, known as the Swedish List, was developed with input from disposal programs internationally. As DOE's screening process evolved, some events were omitted for various reasons. For example, DOE excluded wind erosion from the list because the consequences would be so insignificant that the occurrence would not cause any release of radionuclides. DOE also

omitted meteorite impact as an event because the probability of occurrence is so small--less than 10 4 over 10,000 years.

About 400 events remain on the list requiring further analyses. The issues recently discussed in Washington, included:

- A list of possible events that might affect the disposal system's performance
- A screening methodology applied to the list of events
- The results to date of the screening process

EPA is applying a probabilistic standard for predicting performance of the WIPP 10,000 years into the future. The standard will be met if the predicted releases of waste are found to be both small enough and sufficiently unlikely to occur over the next 10,000 years. The standard also requires that the impact of all the events with significant probability be added up to determine if the sum of releases exceeds the release limit. If the sum of releases exceeds the release limit then EPA will not grant certification to open the WIPP. The prerequisite to this process is to identify the relevant events and to determine its probability and consequence.

Man-made events are of more concern than natural ones. This is because the repository is in a deep salt deposit that is geologically stable; the salt deposit is about 250 million years old. The event of most concern is deep drilling [for resources] that may intrude into the repository and open a pathway [s] through which waste may be released into the environment. Much work is going into the analysis of the drilling intrusion scenario in order to answer two basic questions: 1) How many drilling events, if any, will occur over the next 10,000 years? And, 2) If this occurs, what would be the effect on the repository? Stay tuned.