

the waste should be fixed for purposes of calculating the release limits.

The EPA is proposing that the expected curie activity 100 years after disposal of the waste in the WIPP be used in calculating applicable release limits. The Agency is proposing this approach because EPA believes that 100 years represents a long enough period of time for most of the radioactive material with short half-lives to decay to low levels. The remaining activity after the 100-year period will largely be the result of radioactivity from waste with long half-lives. Such waste may pose the most danger to human health and the environment and, therefore, should be the focus of attention.

The Agency solicits comment on the appropriateness of the above-mentioned approach and on alternative time frames for fixing the curie content.

Scope of Performance Assessments

In today's notice, the Agency is proposing criteria which indicate that performance assessments shall consider both natural and human-initiated processes and events that may affect the disposal system. However, EPA is also proposing that performance assessments need not consider processes, events, or sequences of processes and events (sometimes referred to as "scenarios") that have less than one chance in 10,000 of occurring over 10,000 years.

EPA is proposing the above requirements because section 13 of 40 CFR part 191 requires the implementing agencies to evaluate compliance through performance assessments. One method of displaying results of performance assessments required under section 13 of 40 CFR part 191 is to assemble "complementary cumulative distribution functions" (CCDF). CCDFs are assembled by first calculating the probability of each release scenario and associating a consequence (e.g., release of radionuclides) with each probability. Once the paired probability and consequence estimates are made, they are combined into the CCDF by ranking them in the order of decreasing consequences. The first point on the curve would represent the large consequence of a low probability scenario. The second point on the curve would represent the probability of the first scenario added to the probability of a second scenario. Since the probability of scenarios occurring is cumulative, scenarios with probabilities lower than one chance in 1,000 must be incorporated into probability distributions assembled under section 13 of 40 CFR part 191 to see if the results are significant with regard to compliance assessment.

Importantly, not all scenarios considered by the Department will necessarily be included in calculations of compliance with the 40 CFR part 191 disposal standards. Some scenarios may be eliminated from incorporation into performance assessments because assumptions will be made about such scenarios which indicate that the probability or consequences of such scenarios are outside of the scope of the requirements of 40 CFR part 191. In an effort to understand which scenarios were considered in performance assessments, EPA is proposing that information be provided which identifies all potential processes, events, or sequences of processes and events that may occur during the regulatory time frame and that may affect the disposal system, as well as information which identifies those processes, events, or sequences of processes and events actually included in performance assessment results.

Consideration of Human-Initiated Processes and Events

Compliance with the containment requirements of 40 CFR part 191 requires consideration of the effects of human-initiated processes and events on the disposal system. The Agency believes that the most productive consideration of inadvertent human-initiated processes and events concerns those realistic possibilities that may be usefully mitigated by disposal system design, site selection, or use of passive institutional controls. Therefore, the Agency is proposing that inadvertent and intermittent drilling for resources (other than those resources provided by the waste in the disposal system or any engineered barriers designed to isolate such waste) be the most severe scenario for human-initiated processes and events.

Further, the Agency is limiting the consideration of human-initiated processes and events to drilling events because mining events were not included in EPA's analyses that supported the final rule of 40 CFR part 191 as promulgated in 1985.

The Agency has chosen to divide human-initiated processes and events into two distinct categories, "human intrusion" and "human activity," and is proposing a separate process to establish the drilling rate for each. "Human intrusion" includes those drilling events that reach the level of the waste in the disposal system or below. Such events would include, but would not be limited to, exploration for and development of oil and natural gas resources. The second category of human-initiated processes and events,

"human activity," includes all drilling events that may affect the disposal system, but do not reach the level of the waste in the disposal system. Such drilling events may include, but would not be limited to, exploration for potash, withdrawal of water—whether for purposes of drinking, irrigating or controlling dust—and drilling for other resources. Note that a given resource may exist at levels above and below the level of the waste in the disposal system and may therefore be included in establishing the rates for both human intrusion and human activity.

EPA is proposing that consideration be given to the record of human-initiated processes and events in the Delaware Basin over the past 50 years. The Agency believes that the 50-year time frame is appropriate because it represents a period during which information regarding human-initiated processes and events in the Delaware Basin can be reasonably obtained.

Importantly, by making assumptions about the frequency of human-initiated processes and events in the vicinity of the WIPP and holding them constant throughout the future, scenarios in which such events cease because, for instance, resources eventually become depleted would no longer be considered. However, the Agency recognizes that as one resource becomes depleted, the decrease in exploratory or production operations may be compensated for by the increase in drilling operations for another. Rather than engage in speculation about which resources will become more valuable in the future, and which will become depleted, EPA believes it is preferable to assume that current rates of drilling for each individual resource will remain constant. The Agency solicits comment on this approach.

As stated above, the Delaware Basin is being proposed as the area for examination of the record of human-initiated processes and events. The Delaware Basin is an elongated depression that extends from just north of Carlsbad, New Mexico, southward into Texas. The Agency solicits comment on how, precisely, the Delaware Basin should be defined. The Agency believes that the Delaware Basin is an appropriate region because the WIPP is situated within it and, as a region, it represents the largest contiguous area which shares similar geologic and hydrologic conditions with the WIPP site. However, EPA solicits comments on whether a different area should be used (such as a subset of the Delaware Basin).

It is important to note that the Agency is proposing to require a separate