

**2009 Compliance Recertification Application (2009 CRA)  
Compliance Application Review Document (CARD) No. 45  
Consideration of the Presence of Resources**

## **45.0 BACKGROUND**

Section 194.45 implements the assurance requirement that the disposal system be sited so that the benefits of natural barriers if the disposal system will compensate for any increased probability of disruptions to the disposal system resulting from exploration and development of existing natural resources (61 FR 5232).

To comply with the requirements of the Section 194.45, a clear demonstration of the uniqueness of the site, characteristics of the resources present, and their extractability for profit must be considered. A brief description of each of these aspects is presented below.

Site characterization – contains information relative to geology, hydrology, geomechanical, and mining conditions. Each category has several factors which are important in establishing the advantages of the repository site.

Resource characterization – all naturally occurring resources must be properly documented with illustrations. This includes characteristics, location, extent and estimate of the resource and or reserve.

Extractability – identifies the resources which are currently being exploited in the area. This information should also contain details on the reserve potential for future exploitation.

## **45.1 REQUIREMENTS**

“Any compliance application shall include information that demonstrates that the favorable characteristics of the disposal system compensate for the presence of resources in the vicinity of the disposal system and the likelihood of the disposal system being disturbed as a result of the presence of those resources. If performance assessments predict that the disposal system meets the containment requirements of §191.13 of this chapter, then the Agency will assume that the requirements of this section and §191.14(e) of this chapter have been fulfilled.”

## **45.2 1998 CERTIFICATION DECISION**

To meet the requirements for Section 194.45, the U.S. Environmental Protection Agency (EPA or Agency) expected the U.S. Department of Energy (DOE) to demonstrate that any performance assessment (PA) had fully and appropriately incorporated the potential effects of human intrusion on Waste Isolation Pilot Plant’s (WIPP) containment of waste. As described in the Compliance Application Guidance (CAG-EPA 1996c), EPA expected the Compliance Certification Application (CCA) to document: (1) that the effects of mining and drilling over the regulatory time frame are included in the performance assessment (PA); (2) that the effects of any activities that occur in the vicinity of the disposal system, or are expected to occur in the

vicinity of the disposal system soon after disposal, are incorporated in the PA; and (3) that the results of the PA demonstrate compliance with the containment requirements of EPA's radioactive waste disposal regulations (Section 191.13). The CCA was required to provide specific cross-references to detailed information on incorporation of human intrusion into PA (EPA 1996c, CAG, p. 65).

DOE described the measures it took to comply with the requirements of Section 194.45 in Chapter 7.5 of the CCA. Chapter 7.5 stated that the results of the PA, taking into account the potential for resource exploration, met EPA's containment requirements as dictated by the disposal regulations and compliance criteria (p. 7-96). DOE concluded that the WIPP's favorable characteristics compensate for any possible disturbance (p. 7-98). DOE also provided cross-references for the following information in Chapter 7 of the CCA (p. 7-97 to 7-98):

EPA found that the information contained Chapter 7.5, portions of the CCA cross-referenced in Chapter 7.5, and other relevant documentation demonstrated that DOE took into account the potential for resource exploration and met the Agency's requirements based on the results of the PA. Furthermore, DOE's Final Environmental Impact Statement (FEIS) for the WIPP indicated that resource considerations were taken into account during the disposal system's site selection process. Based on these factors, EPA concluded that DOE complied with the requirements of Section 194.45.

A complete description of EPA's 1998 Certification Decision for Section 194.45 can be obtained from EPA Air Docket, A-93-02, Items V-A-1 and V-B-2.

#### **45.3 CHANGES IN THE 2004 COMPLIANCE RECERTIFICATION APPLICATION (2004 CRA)**

DOE did not report any significant changes to the information on which EPA based the 1998 Certification Decision. Chapter 7.5 of the 2004 Compliance Recertification Application (2004 CRA) (pp.7-87 to 7-89) contained all the changes related to resource considerations since 1998. However, DOE did initiate some minor changes relative to features, events, and processes (FEPs) at WIPP, which were included in the 2004 CRA but did not affect the outcome or the PA process. These changes are mentioned below. In addition, minor clarifying language has been added to show where resource-related information can be found (e.g., 2004 CRA Chapter 6.5, CCA Appendices GCR, IRD, and DEL).

1. Enhanced oil and gas production (H28) – Screening decision was changed SO-R to SO-C.
2. Hydrocarbon storage (H29) – Screening decision was changed SO-R to SO-C
3. Liquid waste disposal (H27) – Screening decision was changed SO-R to SO-C
4. Solution mining for potash (H58) – New FEP for CRA SO-R
5. Solution mining for other resources (H59) New FEP for CRA SO-C  
(SO-R, Screened Out – Regulatory, SO-C, Screened Out – Consequences)

DOE's discussion of these changes indicated that "FEPs screening for the 2004 CRA is not significantly different than the CCA, but now reflects the most recent information available."

### **45.3.1 EVALUATION OF COMPLIANCE FOR 2004 RECERTIFICATION**

Based on EPA's review of the activities and conditions in and around the WIPP site, EPA did not identify any significant changes related to the presence of resources since the 1998 Certification Decision.

The 2004 CRA discusses the purpose of this assurance requirement. In doing so, DOE summarized EPA's 40 CFR Part 194 guidance, stating that they:

- documented that the effects of mining and drilling over the regulatory time frame have been incorporated into PAs according to the requirements of Sections 194.32, 194.33, and 194.43;
- documented that PAs incorporate the effects on the disposal system of any activities that occur in the vicinity of the disposal system or are expected to occur in the vicinity of the disposal system soon after disposal according to the requirements of Section 194.32; and
- documented whether the results of PAs demonstrate compliance with the containment requirements of Section 194.13.

The results of the recertification performance assessments were documented in Chapter 6.5 of the 2004 CRA and in supplemental information on the 2004 Performance Assessment Baseline Calculation (2004 PABC). In addition, the impacts of resource development outside the controlled area were considered in the development of the WIPP's conceptual models, as well as in the site selection process (as previously discussed).

EPA did not receive any public comments on DOE's continued compliance with the consideration of the presence of resources requirements of Section 194.45.

### **45.3.2 2004 RECERTIFICATION DECISION**

Based on a review and evaluation of the 2004 CRA, supplemental information in appendices GRC, IRL, DEL provided by DOE (FDMS Docket ID No. EPA-HQ-OAR-2004-0025, Air Docket A-98-49) and an assessment of changes since 1998, EPA determined that DOE continues to comply with the requirements for Section 194.45.

### **45.4 CHANGES IN THE 2009 COMPLIANCE RECERTIFICATION APPLICATION (2009 CRA)**

In each recertification application, DOE submits any new information that could impact or generate inconsistencies in the screening arguments and decisions presented during the prior certification or recertification (2004 CRA). Changes to the WIPP baseline since the 2004 CRA have been identified and evaluated to determine their impact upon the WIPP FEPs baseline. This reevaluation process is very similar to the process used for the 2004 CRA. The FEPs baseline process is managed according to Sandia National Laboratories Activity/Project Specific Procedure 9-4, *Performing FEPS Baseline Impact Assessments for Planned and Unplanned*

*Changes* (Revision 1) (Kirkes 2006). The current FEPs baseline is presented in the 2009 CRA, Appendix SCR-2009. Table 32-1 lists the 2009 CRA FEPs and their screening decisions, and summarizes any changes to related information since the 2004 CRA. For the 2009 CRA, a reassessment of FEPs conducted by DOE led to the conclusion that out of 235 FEPs considered for the 2004 CRA, 188 have not been changed, 35 have been updated with new information, 10 have been split into 20 similar, 1 screening argument has been changed to correct errors discovered during the evaluation and 1 has had its screening decision changed. The total number of FEPs used in 2009 CRA was 245. DOE determined “that none of these new or updated FEPs require changes to PA models or codes; existing models represent these FEPs in their current configurations”.

Section 194.32, “Scope of Performance Assessment” requires the identification, selection, screening, and incorporation of all significant processes and events into PA. DOE has taken a comprehensive approach in meeting the requirements of the section as documented here and in Appendix SCR-2009 of this CRA. The process used is consistent with evaluations of WIPP FEPs in past compliance applications. Any new information that relates to WIPP features, events, and processes is identified and incorporated into PA as appropriate.

Section 45 of the 2009 Compliance Recertification Application (2009 CRA) contains all the changes related to resource considerations since 1998 and 2004. DOE did, however, update the drilling rate LAMBDA (see 2009 CRA Appendix DATA-2009 and Appendix PA-2009 Section PA-2.1.1), and changed the duration of direct brine releases expressed by PA parameter MAXFLOW (2009 CRA Appendix PA-2009 Section PA-2.1.1). These changes do not significantly affect PA calculations, but serve to incorporate the most recent information available related to resource exploitation in the vicinity of the WIPP site.

#### **45.4.1 Evaluation of COMPLIANCE FOR 2009 RECERTIFICATION**

Based on EPA’s review of the activities and conditions in and around the WIPP site, EPA did not identify any significant changes related to the presence of resources since the 1998 Certification or 2004 Recertification decisions.

The results of the recertification performance assessments are documented in (see 2009 CRA Appendix PA-2009 Sections PA-7.0, PA-8.0, and PA-9.0) of the 2009 CRA and in supplemental information (see Clayton et al.2009) on the 2009 Performance Assessment Baseline Calculation (2009 PABC). PA calculations continue to predict releases within the regulatory limit, therefore, favorable characteristics continue to outweigh risks associated with the presence of resources at the site. In addition, the impacts of resource development outside the controlled area were considered in the development of the WIPP’s conceptual models, as well as in the site selection process (as previously discussed).

EPA did not receive any public comments on DOE’s continued compliance with the consideration of the presence of resources requirements of Section 194.45.

#### **45.4.2 2009 RECERTIFICATION DECISION**

Based on a review and evaluation of the 2009 CRA, supplemental information in appendices SCR-2009, DATA-2009, and PA-2009 provided by DOE (FDMS Docket ID No. EPA-HQ-OAR-2009-0330, Air Docket A-98-49) and an assessment of changes since 2004, EPA determines that DOE continues to comply with the requirements for Section 194.45.