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**Title 40 CFR Part 191  
Subparts B and C  
Compliance Recertification  
Application  
for the  
Waste Isolation Pilot Plant**

**Consideration of the Presence of Resources  
(40 CFR § 194.45)**



**United States Department of Energy  
Waste Isolation Pilot Plant**

**Carlsbad Field Office  
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(40 CFR § 194.45)**

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### **Acronyms and Abbreviations**

CCA	Compliance Certification Application
CRA	Compliance Recertification Application
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FEP	feature, event, and process
PA	performance assessment
WIPP	Waste Isolation Pilot Plant

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1 **45.0 Consideration of the Presence of Resources (40 CFR § 194.45)**

2 **45.1 Requirements**

§ 194.45 Consideration of the Presence of Resources

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.

3

4 **45.2 Background**

5 40 CFR § 194.45 (2004) implements the assurance requirement that the disposal system be sited  
6 so that the benefits of the disposal system's natural barriers compensate for the increased  
7 probability of disruptions to the disposal system resulting from exploring and developing  
8 existing resources. In promulgating this requirement, the U.S. Environmental Protection Agency  
9 (EPA) determined that performance assessment (PA) provides a rigorous analytical methodology  
10 to determine whether the Waste Isolation Pilot Plant (WIPP) site has compensating features that  
11 outweigh the presence of resources (U.S. Environmental Protection Agency 1996). In  
12 accordance with the compliance criteria, the U.S. Department of Energy (DOE) must  
13 demonstrate that the PA has incorporated the potential effects of human activities near the WIPP  
14 prior to disposal, and of drilling and excavation mining over the regulatory time frame.

15 **45.3 1998 Certification Decision**

16 In the Compliance Certification Application (CCA) (U.S. Department of Energy 1996), Chapter  
17 7.0, Section 7.5, the DOE describes the measures taken to comply with the requirements of  
18 section 194.45. The CCA, Chapter 7.0, Section 7.5 states that the results of the PA, taking into  
19 account the potential for resource exploration, met the containment requirements of the EPA as  
20 dictated by the disposal regulations and compliance criteria. The CCA, Chapter 7.0, Section  
21 7.5.2 states that the DOE concluded that the favorable characteristics of the WIPP compensate  
22 for any possible disturbance.

23 The EPA found that the information contained in the CCA, Chapter 7.0, Section 7.5, and  
24 portions of the CCA cross-referenced in Chapter 7.0, Section 7.5 demonstrates that the DOE  
25 accounted for potential resource exploration and met the EPA's requirements based on the  
26 results of the PA. Furthermore, the DOE's Final Environmental Impact Statement for the WIPP  
27 indicates that resource considerations were taken into account during the disposal system's site  
28 selection process (U.S. Department of Energy 1980, Volume 1, Section 7.3.7). Based on these  
29 factors, the EPA concluded that the DOE complied with the requirements of section 194.45. A  
30 complete description of the EPA's 1998 Certification Decision for section 194.45 can be  
31 obtained from U.S. Environmental Protection Agency 1998a and 1998b.

1 **45.4 Changes in the CRA-2004**

2 The DOE did not report any significant changes to the information on which the EPA based the  
3 1998 Certification Decision. The Compliance Recertification Application (CRA) of 2004 (CRA-  
4 2004) (U.S. Department of Energy 2004), Chapter 7.0, Section 7.5, contains all the changes  
5 related to resource considerations since 1998. The DOE made some minor changes to the list of  
6 features, events, and processes (FEPs) considered in the CRA-2004, but the changes did not  
7 affect the outcome of the PA. (See the CRA-2004, Appendix SCR, Table SCR-1.)

8 In the CRA-2004, Chapter 7.0, Section 7.5, the DOE demonstrates that:

- 9 • The effects of mining and drilling over the regulatory time frame have been incorporated into  
10 PAs according to the requirements of 40 CFR §§ 194.32, 194.33, and 194.43.
- 11 • The PA incorporates the effects on the disposal system of any activities that occur in the  
12 vicinity of the disposal system or are expected to occur in the vicinity of the disposal system  
13 during the 10,000 year regulatory period, according to the requirements of section 194.32.
- 14 • The results of PA demonstrate compliance with the containment requirements of 40 CFR  
15 § 191.13 (U.S. Environmental Protection Agency 1993).

16 The results of the recertification PA are documented in the CRA-2004, Chapter 6.0, Section 6.5,  
17 and in supplemental information on the CRA-2004 Performance Assessment Baseline  
18 Calculation (Leigh et al. 2005). In addition, the impacts of resource development outside the  
19 controlled area were considered in the development of the WIPP’s conceptual models, as well as  
20 in the site selection process.

21 **45.5 EPA’s Evaluation of Compliance for the 2004 Recertification**

22 The EPA’s review of the activities and conditions in and around the WIPP site did not identify  
23 any significant changes since the 1998 Certification Decision related to the presence of  
24 resources.

25 Based on a review and evaluation of the CRA-2004; supplemental information in the CCA,  
26 Appendices GCR, IRL, and DEL provided by the DOE in the CRA-2004; and an assessment of  
27 changes since 1998, the EPA determined that the DOE continued to comply with the  
28 requirements in section 194.45.

29 **45.6 Changes or New Information Since the 2004 Recertification**

30 Section 194.45 states, “If performance assessments predict that the disposal system meets the  
31 containment requirements of Section 191.13 of this chapter, then the Agency will assume that the  
32 requirements of this section and §191.14(e) of this chapter have been fulfilled.” Therefore,  
33 provided that the PA appropriately incorporates processes relating to resource discovery and  
34 production, and predicts releases that are below limits established by the EPA, compliance with  
35 section 194.45 has been demonstrated. This conditional logic relies heavily upon whether or not  
36 the PA is structured to appropriately represent resource-related activities at the WIPP site. To

1 accomplish this, the DOE uses a structured methodology to identify and select FEPs that may  
2 have an impact on the disposal system. This process is documented in “Scope of Performance  
3 Assessment,” Section 32, and Appendix SCR-2009. There have been no changes in screening  
4 decisions for resource related FEPs for the CRA-2009.

5 While there have been no screening changes for FEPs related to the presence of resources, there  
6 have been two changes relating to the implementation of the presence of resources in PA models.  
7 These changes include a new drilling rate (LAMBDA) (see Appendix DATA-2009 and  
8 Appendix PA-2009, Section PA-2.1.1) and a change in the duration of direct brine releases  
9 through the PA parameter MAXFLOW (see Appendix PA-2009, Section PA-2.1.1). These  
10 changes are not significant, but have been made to incorporate the most recent information  
11 available relating to the exploitation of resources (see “Consideration of Drilling Events in  
12 Performance Assessment,” Section 33). Besides these two drilling-related parameters, there  
13 have been no planned changes adopted by the DOE since the CRA-2004 that impact the previous  
14 position and bases for demonstrating compliance with this section. The PA calculations  
15 responsive to section 191.13 show predicted releases to be well within the regulated limits and  
16 demonstrate that the favorable characteristics and isolating capability of the WIPP outweigh the  
17 risks associated with the presence of resources at the site. Therefore, the requirements of section  
18 194.45 are met.

## 19 **45.7 References**

20 Leigh, C., J. Kanney, L. Brush, J. Garner, R. Kirkes, T. Lowry, M. Nemer, J. Stein, E. Vugrin, S.  
21 Wagner, and T. Kirchner. 2005. *2004 Compliance Recertification Application Performance*  
22 *Assessment Baseline Calculation* (Revision 0). ERMS 541521. Carlsbad, NM: Sandia National  
23 Laboratories.

24 U.S. Department of Energy. 1980. *Final Environmental Impact Statement for the Waste*  
25 *Isolation Pilot Plant* (October). 2 vols. DOE/EIS-0026. ERMS 238835 and ERMS 238838.  
26 Washington, DC: U.S. Department of Energy.

27 U.S. Department of Energy (DOE). 1996. *Title 40 CFR Part 191 Compliance Certification*  
28 *Application for the Waste Isolation Pilot Plant* (October). 21 vols. DOE/CAO-1996-2184.  
29 Carlsbad, NM: Carlsbad Area Office.

30 U.S. Department of Energy (DOE). 2004. *Title 40 CFR Part 191 Compliance Recertification*  
31 *Application for the Waste Isolation Pilot Plant* (March). 10 vols. DOE/WIPP 2004-3231.  
32 Carlsbad, NM: Carlsbad Field Office.

33 U.S. Environmental Protection Agency (EPA). 1993. “40 CFR Part 191: Environmental  
34 Radiation Protection Standards for the Management and Disposal of Spent Nuclear Fuel, High-  
35 Level and Transuranic Radioactive Wastes; Final Rule.” *Federal Register*, vol. 58 (December  
36 20, 1993): 66398–416.

37 U.S. Environmental Protection Agency (EPA). 1996. *Response to Comments: 40 CFR Part*  
38 *194: Criteria for the Certification and Recertification of the Waste Isolation Pilot Plant’s*

- 1 *Compliance with the 40 CFR Part 191 Disposal Regulations* (January 31). EPA 402-R-96-001.  
2 Washington, DC: Office of Air and Radiation.
- 3 U.S. Environmental Protection Agency (EPA). 1998a. “40 CFR Part 194: Criteria for the  
4 Certification and Recertification of the Waste Isolation Pilot Plant’s Compliance with the  
5 Disposal Regulations: Certification Decision; Final Rule.” *Federal Register*, vol. 63 (May 18,  
6 1998): 27353–406.
- 7 U.S. Environmental Protection Agency (EPA). 1998b. *Compliance Application Review*  
8 *Documents for the Criteria for the Certification and Recertification of the Waste Isolation Pilot*  
9 *Plant’s Compliance with the 40 CFR 191 Disposal Regulations: Final Recertification Decision*  
10 (May). Washington, DC: Office of Radiation and Indoor Air.