

**2009 Compliance Recertification Application (2009 CRA)
Compliance Application Review Document (CARD) No. 41
Active Institutional Controls**

41.0 BACKGROUND

Assurance requirements were included in the disposal regulations to compensate in a qualitative manner for the inherent uncertainties in projecting the behavior of natural and engineered components of the Waste Isolation Pilot Plant (WIPP) for many thousands of years (50 FR 38072). Section 194.41 is one of the six assurance requirements in the Compliance Criteria. Active institutional controls (AICs) are defined in Section 191.12 as “controlling access to a disposal site by any means other than passive institutional controls, performing maintenance operations or remedial actions at a site, controlling or cleaning up releases from a site, or monitoring parameters related to disposal system performance.” Section 194.41 requires AICs to be maintained for as long a period of time as is practicable after disposal; however, contributions from AICs for reducing the rate of human intrusion in the PA may not be considered for more than 100 years after disposal.

41.1 REQUIREMENTS

(a) “Any compliance application shall include detailed descriptions of proposed active institutional controls, the controls' location, and the period of time the controls are proposed to remain active. Assumptions pertaining to active institutional controls and their effectiveness in terms of preventing or reducing radionuclide releases shall be supported by such descriptions.”

(b) “Performance assessments shall not consider any contributions from active institutional controls for more than 100 years after disposal.”

41.2 1998 CERTIFICATION DECISION

To meet the requirements for Section 194.41, the U.S. Environmental Protection Agency (EPA or Agency) expected the Compliance Certification Application (CCA) to describe in detail the proposed AICs and their location and function, and to identify the period of time they are expected to remain active. EPA also expected the U.S. Department of Energy (DOE or Department) to provide detailed information regarding implementation of the controls, any assumptions pertaining to the effectiveness of active controls, a justification for any credit for AICs used in performance assessments (PA), and the methodology for determining the credit. EPA specified that PAs could not assume that AICs would be effective for a period longer than 100 years after disposal.

In Chapter 7 and Appendix AIC of the CCA, DOE described their plan for AICs, including constructing a fence and roadway around the surface footprint of the repository, posting warning signs, routine patrols and surveillance. DOE stated that the AICs will be maintained for 100 years after closure of the WIPP facility and would effectively prevent human intrusion during that time.

EPA reviewed DOE's proposed plans for AICs in connection with the types of activities that may be expected to occur in the vicinity of the WIPP site during the first 100 years after disposal (i.e., ranching, farming, hunting, scientific activities, utilities and transportation, ground water pumping, surface excavation, potash exploration, construction and hostile or illegal activities.) EPA also examined the assumptions made by DOE to justify the assertion that AICs will be completely effective for 100 years.

Because DOE adequately described the proposed AICs and the basis for their assumed effectiveness and did not assume in the PA that AICs would be effective for more than 100 years, EPA found DOE in compliance with Section 194.41

A complete description of EPA's 1998 Certification Decision for Section 194.41 can be obtained from EPA Air Docket, A-93-02, Items V-A-1 and V-B-2.

41.3 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 of the 2004 Compliance Recertification Application (2004 CRA) (2004 CRA p.7-1 to 7-24) contains all the changes related to AICs since 1998. DOE reported that CCA Appendix AIC is unchanged since 1998.

41.3.1 EVALUATION OF COMPLIANCE FOR THE 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 in the planning and execution of the DOE's AICs plan since the 1998 Certification Decision.

2004 CRA adequately described, in detail, the proposed AICs and their location and function, and identified the basis for their assumed effectiveness. EPA confirmed that DOE's 2004 CRA performance assessment (Performance Assessment Baseline Calculations, PABC04) used the maximum allowable credit for AICs against human intrusion (100 years). EPA continued to find reasonable DOE's assertion that AICs will completely prevent human intrusion for 100 years.

In the 2004 CRA, DOE accurately described EPA's approval to remove Appendix LMP from recertification applications. Information from Appendix LMP was not used as a basis for EPA's 1998 Compliance Decision on Section 194.41 (A-98-49, Item II-B2-27). Since it did not directly support compliance demonstrations for EPA's disposal regulations, its removal was not significant nor did it affect our evaluation on continued compliance for 2004 CRA.

EPA did not receive any public comments on DOE's continued compliance with the AICs requirements of Section 194.41.

41.3.1 2004 RECERTIFICATION DECISION

Based on a review and evaluation of the 2004 CRA, CCA Appendix AIC (1998), and supplemental information provided by DOE (FDMS Docket ID No. EPA-HQ-OAR-2004-0025, Air Docket A-98-49), EPA determined that DOE continued to comply with the requirements for Section 194.41.

41.4 CHANGES IN THE 2009 COMPLIANCE RECERTIFICATION APPLICATION (2009 CRA)

DOE did not report any significant changes to the information on which EPA based the 1998 Certification or the 2004 CRA decisions. DOE 2009 CRA Section 41 documents that no changes have taken place to AICs since 1998 and 2004. DOE reported that CCA Appendix AIC and 2004 CRA Appendix AIC are unchanged since 1998 and 2004.

41.4.1 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 in the planning and execution of the DOE's AICs plan since the 1998 Certification Decision or 2004 CRA.

2009 CRA adequately describes the proposed AICs and their location and function, and identified the basis for their assumed effectiveness. EPA confirms that DOE's 2009 CRA performance assessment and the 2009 Performance Assessment Baseline Calculations (2009 PABC) uses the maximum allowable credit for AICs against human intrusion (100 years). EPA continues to find reasonable DOE's assertion that AICs will completely prevent human intrusion for 100 years.

EPA did not receive any public comments on DOE's continued compliance with the AICs requirements of Section 194.41.

41.4.2 2009 RECERTIFICATION DECISION

Based on a review and evaluation of the 2009 CRA, 2004 CRA, CCA Appendix AIC (1998), and supplemental information provided by DOE (FDMS Docket ID No. EPA-HQ-OAR-2009-0330, Air Docket A-98-49), EPA determines that DOE continues to comply with the requirements for Section 194.41.