

STREAMLINING THE FUTURE OF COMPLIANCE CERTIFICATION AT WIPP

S. C. Kouba

Washington Regulatory and Environmental Services
4021 National Parks Highway, Carlsbad, NM 88220

S. C. Casey, R. L. Patterson

U.S. Department of Energy, Carlsbad Field Office
4021 National Parks Highway, Carlsbad, NM 88220

ABSTRACT

The WIPP Land Withdrawal Act requires the U.S. Department of Energy (DOE) to submit the 2004 Compliance Recertification Application (CRA) to the U.S. Environmental Protection Agency (EPA) prior to March 26, 2004. The 2004 CRA is the first of several such renewal applications for the Waste Isolation Pilot Plant (WIPP). In contrast to the initial application, or the Compliance Certification Application (CCA), the CRA is a noticeably streamlined document. The nature of the 2004 CRA lends the regulatory process a hand in simplifying the type and amount of documentation that is utilized to demonstrate continued compliance. For example, by contrast, the size of the 2004 CRA is more than 60% smaller than the CCA by page count, and the content is more focused on addressing specific certification criteria, rather than describing the broad range of WIPP technical and regulatory topics. By comparison, the 2004 CRA still provides extensive information that covers the general, containment, and assurance requirements, as well as describing the programs that protect human health and water resources.

In planning future WIPP recertification efforts, DOE is dedicated to ensuring continued compliance while reducing the amount of documentation produced. There are two ways in which this is being addressed. First, by reducing the use and production of paper-intensive publications through implementation of electronic documentation and reporting systems, the regulatory reporting process can be more efficient. This will also help to ensure more timely notifications through modern delivery systems. Second, through restructuring and consolidating the framework of compliance applications, the supplied information is focused on directly responding to the EPA's standards for deep geologic disposal of radioactive waste. Use of these methods, along with the concurrence of the EPA will allow DOE to efficiently fulfill a broad range of requirements throughout the next several decades.

DISCUSSION

In 1996, the WIPP CCA (1) was the first document of its kind, in that it established the basis of the DOE approach to demonstrating compliance with the deep geologic, radioactive waste disposal standards (2). The CCA included extensive information on the regional hydrology and geology, conclusions from more than twenty years of scientific studies, details and results of repository performance assessments, facility information, and long-term stewardship program descriptions that will assure the reliability of the WIPP repository. The range in types of data varied as much as the dates in which the data were collected.

Reducing Compliance Documentation

The first compliance application for WIPP consisted of over 24,000 pages of technical, programmatic, and regulatory information organized into a compendium of nine chapters and fifty-six supporting appendices. EPA's original certification criteria, spelled out in 40 CFR, Part 194 (3), required that for referenced information that is not readily available, "10 copies of the referenced information are submitted to the Administrator" (§194.13). Adding this required reference material, at a total of 714 publications, the total page count sky rockets to over 70,000 pages. In less controversial regulatory matters, that quantity of information would have more than satisfied an army of conscientious questions. However, given the regulatory chore of trying to certify the stability of a disposal system for the next 10,000 years, the EPA did not want to miss anything. The next eighteen months, in between the submittal of the CCA and the EPA's decision to certify WIPP, produced enough documentation to nearly rival the CCA itself. Accumulating the requests from the EPA, the DOE responses, stakeholder comments, technical support and review documents, and the final rule, thousands of pages of documentation were produced. The left-most portion of Fig. 1 depicts this timeline.

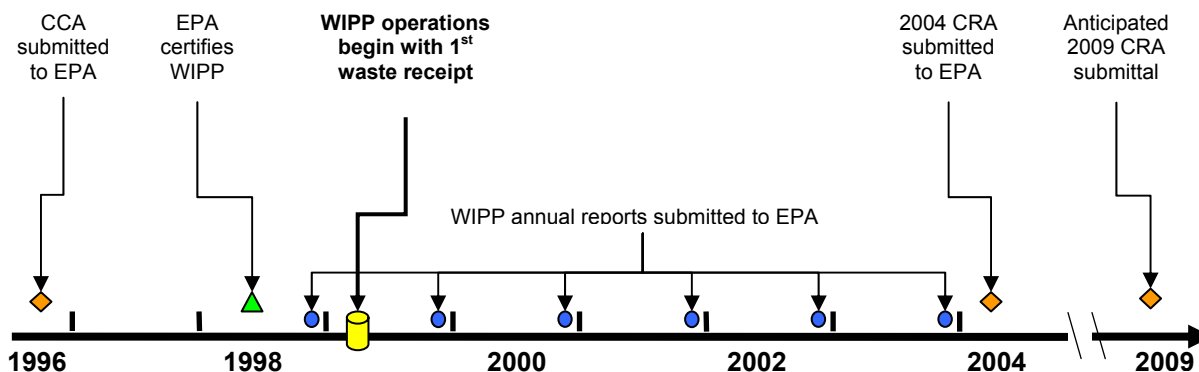


Fig. 1 WIPP Certification Timeline

After obtaining EPA-Certification, and clearing other legal issues, WIPP received the first shipment in the early morning of March 26, 1999. This started the clock for periodic recertification, as mandated by Congress in Section 8(f) of the WIPP Land Withdrawal Act (4). The act requires DOE to submit documentation of continued compliance every five years after the initial receipt of waste. In the criteria for certification, Title 40 CFR, Part 194 (3), EPA went onto define this type of documentation as a "compliance application."

When DOE started planning for recertification, it became obvious that efficiencies were necessary. Evaluating the basis of compliance became more and more difficult each year, as minor changes were submitted and approved. Since no single document contains all the information necessary to understand the compliance status, regulatory compliance with 40 CFR, Part 191 has to be assessed through the use of several documents. Deciphering the status of compliance often requires a person to have copies of the all the correspondence between DOE and the EPA, the entire set of CCA documentation (see Table I), results of the mandated

validation test of the performance assessment modeling (5), the EPA's technical support and compliance application review documents, and the final rule documenting EPA's decision to certify WIPP (6). This amounts to a very difficult method of documenting continued compliance. Therefore, DOE began working with the EPA on ways to simplify the approach for the 2004 CRA. In late 2000, the EPA published guidance on recertification. With that guidance and several technical exchange meetings, DOE decided to pursue a revised application containing information directly relevant to satisfying each criterion established by the EPA.

The result of the effort is a recertification application (7) that retains the same structure for the main volume, while consolidating the number of supporting appendices to eight. The portions of the initial application that remain valid were simply referenced, accounting for a total of twenty out of the original fifty-six appendices. Another three were eliminated, while the remaining thirty-three were updated and consolidated into eight appendices for the 2004 CRA. Table I shows the CCA as compared to the 2004 CRA, as well as the prediction for the 2009 CRA. DOE is planning additional streamlining of the CRA scheduled for submittal in 2009. This planned approach will focus on separating the accepted basis documentation from that which is required in any application. The basis documentation will be used as reference material for both the 2004 CRA and future applications.

Table I. Comparison between past, present, and future WIPP compliance applications

Compliance Application	Total Pages	Chapters	Volumes	Appendices	Provided References ^b
CCA – 1996	24,100	9	21	56	716
CRA – 2004 ^a	8,700	9	8	8	250
CRA – 2009 ^c	3,800	6	5	10	300

Note: a portion of the CCA documentation will remain unchanged for the life of WIPP operations

a – Estimated number of pages (+/-100) to be submitted

b – The 2004 CRA count does not include references previously provided to the EPA as part of the CCA

c – Estimate based on realigning the 2009 compliance application in tandem with 40 CFR 194 requirements

E-Documents

As part of the government wide initiative, known as the E-Government Act of 2002 (8), the DOE has created a variety of electronic record creation and retrieval systems, each suited to serve a specified area of business. The system created for WIPP certification documentation is known as the Compliance Recertification Electronic Library (CREL). The system was first launched in early 2002, and has been steadily improved since that time. Although different from the e-government initiative in functionality, the CREL system actually warehouses copies of files containing regulatory correspondence, technical documents, spreadsheets, graphics, design drawings, code output, reports, and extensive numerical data. The CREL system was set up to be accessed both internal to the WIPP facility computing network, and externally through a virtual private network. Although the library files are not publicly accessible, any documentation that has been submitted to the EPA can be made available to the public upon request.

DOE has been able to use the CREL system to share files with hundreds of project participants without having to utilize costly and timely transmittal methods. Another advantage of the CREL

system is the round the clock accessibility. CREL access is not limited to any one computer, given system access; users can download files from a computer with a web-browser and internet access. This allows users to retrieve documents from remote locations and during off-normal work hours. The system was used extensively by those responsible for preparing various portions of the 2004 CRA, for storing, sharing, and retrieving, and modifying draft documentation. The system continues to be used daily for storage and retrieval by staff involved in a range of on-going WIPP compliance topics. DOE staff and WIPP contractors are able to upload and download files without the reliance of another person to send them, and with added security of a trusted source. Access through the CREL has also helped to decrease the amount of email congestion through the use of text-limited notifications, and security-sensitive links to source files. In the later part of 2004, DOE will be pursuing the use of a website for public access of the 2004 CRA files.

More recently, the EPA has asked that the electronic versions of the compliance application, prepared parallel with printed versions, be tailored to meet the “Section 508” standards. These standards establish definitions and criteria that allow persons with disabilities (both Federal employees and the public) “to have access to and use of information and data that is comparable” to that provided to individuals without disabilities. The standards were prepared and put into effect as required by the 1998 Rehabilitation Act Amendments. The “Section 508” standards became effective in February 2001. ([9, 10](#))

Since then, DOE has applied the standards to information and documentation posted on the WebPages maintained under the control of each DOE facility. In nearly all cases, this information is manageable in terms of quantity of pages and complexity of the content. However, to our knowledge, there has not yet been an attempt by DOE to provide a massive technical document (over 3000 pages) that meets the “Section 508” standards in electronic format. Despite the difficulty of the challenge, DOE has agreed to EPA’s request and will make the compliance documentation comparable to the standard printed version. The electronically accessible 2004 CRA will set a new precedent in terms of technical complexity and quantity of information. Different from the CCA, the EPA has agreed to host the web site containing the 2004 CRA electronic files. From 1997 through 2002, the DOE WIPP web pages accommodated the composition of CCA files. Unfortunately, the CCA files were not protected from computer hackers. The files were eventually removed from the server due to security problems and to ensure preservation of information.

Reporting and Notifying EPA

With any compliance program, there are reporting requirements. Most often these are categorized into recurring periodic reports, and occurrence reports. The EPA requires that DOE provide both types of reports for activities and conditions pertaining to the WIPP disposal system. In addition, the EPA also requires that DOE provide notification of any planned changes with potential to impact the disposal system (even if deemed positive). In 1998, DOE submitted the first recurring report of its kind, known as the Annual Change Report (11), to the EPA. This report was published on paper and submitted in replicate, at the request of the regulator. Since it was the first time the report had been attempted, the EPA saw room for improvement and requested the inclusion of additional information in all future reports. Between 1998 and 2001,

the amount of information provided in the Annual Change Report expanded from nine pages to over a thousand pages. The expanded information is inclusive of complete reports on environmental monitoring, subsidence surveying, geotechnical monitoring, regional drilling surveillance, groundwater monitoring, and compliance monitoring parameter analyses.

Since 2001, the DOE and EPA have worked together to minimize the amount of paper resulting from the production of reports and notifications. Although, the amount of information, inclusive of attachments, averages around one-thousand pages, the annual reports are now published to compact disc, with a minimum of printed copies provided to EPA for record keeping and legal public dockets. ([12](#))

Another measure of progress is the decision by EPA to reduce the number of printed copies of compliance applications, as well as the decision to accept reference material in electronic format. This can be attributed to the cooperative approach that DOE and EPA have achieved when working on technical and administrative issues. In 2001, DOE requested consideration of submitting future compliance applications electronically (either whole or in part), in order to reduce the use of paper, reduce excessive costs of printing, and cut down on the tedious activities associated with publication of hundreds of copies. Based on the 1996 version of the Part 194 Criteria, the EPA required “30 copies of any compliance application, any accompanying materials, and any amendments thereto shall be submitted in a printed form to the Administrator” (§194.12). The EPA considered the request, and reacted with a proposal to reduce the requirement from thirty to fifteen copies, with at least five in printed format. Also proposed, the revised rule would allow copies of reference materials to be submitted in electronic format, with an equivalent number required.

CONCLUSION

The advances and lessons learned in the past five years of operating the WIPP have propelled the DOE to pursue the safest, least impactful, and most efficient methods of demonstrating regulatory compliance with EPA’s radioactive waste disposal standards. Use of electronic documentation and reporting, web-based records access, and streamlining future WIPP compliance applications are the first steps in efficient compliance programs. As the Nation’s leader in energy alternatives and conservation, the DOE will continue to proactively engage in more proficient implementation practices to ensure both the long-term durability of the WIPP disposal system, and the most efficient use of limited resources. By working closely with the EPA and WIPP stakeholders, DOE expects to fulfill regulatory requirements in an increasingly effective manner throughout the next several decades. Our next challenge is right around the corner.

REFERENCES

- 1 U.S. Department of Energy (DOE), 1996. *Title 40 CFR 191, Compliance Certification Application for the Waste Isolation Pilot Plant*; (CCA). DOE/CAO 1996-2184. Carlsbad Area Office.
- 2 U.S. Environmental Protection Agency (EPA), 1987. *Title 40 CFR, Part 191. Environmental Radiation Protection Standards for the Management and Disposal of Spent*

- Nuclear Fuel, High-Level and Transuranic Radioactive Wastes*, 58 FR 66398-66416, December 20, 1993.
- 3 U.S. Environmental Protection Agency (EPA), 1996. Title 40 CFR, Part 194. *Criteria for the Certification and Recertification of the Waste Isolation Pilot Plant's Compliance With the 40 CFR Part 191 Disposal Regulations*. 61 FR 5224, February 9, 1996.
 - 4 Public Law 102-579, 110 Statute 2422, Waste Isolation Pilot Plant Land Withdrawal Act, 1992; and subsequently to Public Law 104-201, Subtitle F; 1996.
 - 5 U.S. Environmental Protection Agency (EPA), 1997. Performance Assessment Validation Test (PAVT)
 - 6 U.S. Environmental Protection Agency (EPA), 1998. *Criteria for the Certification and Recertification of the Waste Isolation Pilot Plant's Compliance with the Disposal Regulations: Certification Decision*; Final Rule, Federal Register, Volume 63, pages 27354 through 27406, May 18, 1998, Radiation Protection Division, Washington, D.C.
 - 7 U.S. Department of Energy (DOE), 2004. *Title 40 CFR 191, Subparts B and C, Compliance Recertification Application*; (CRA). DOE/WIPP 04-3231. Carlsbad Field Office, February 2004.
 - 8 Public Law No: 107-347, Electronic Government Act, December 17, 2002.
 - 9 Public Law No: 105-220, Workforce Investment Act, Amendment to Section 508 of the Rehabilitation Act (29 U.S.C., 794d), August 7, 1998.
 - 10 Architectural and Transportation Barriers Compliance Board, 2000. Title 36 CFR, Part 1194, Electronic and Information Technology Accessibility Standards. December 21, 2000.
 - 11 U.S. Department of Energy (DOE), 1998. Letter from K. Klein (DOE) to L. Weinstock (EPA) transmitting the Title 40 CFR 194.4(b)(4), WIPP Annual Change Report. Carlsbad Area Office, November 10, 1998.
 - 12 U.S. Department of Energy (DOE), 2003. Letter from I. Triay (DOE) to F. Marcinowski (EPA) transmitting the Title 40 CFR 194.4(b)(4), WIPP Annual Change Report. Carlsbad Field Office, November 13, 2003.