

REACH

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Groundwater/vadose zone science and technology program earns positive marks

Edye Jenkins, BHI

Hanford's groundwater/vadose zone science and technology program has earned positive marks after an 18-month review by the National Research Council, a part of the National Academy of Sciences. "This is the most positive NRC report about Hanford that I have seen," said Chris Whipple, NRC committee chairman.

The science and technology program, more commonly called the S&T program, is part of the Groundwater/Vadose Zone Integration Project managed by Bechtel Hanford for the U.S. Department of Energy. The Pacific Northwest National Laboratory is a partner with BHI and has the lead on the S&T program.

The goal of the S&T program is to provide new knowledge, data and tools for the cleanup and stewardship mission at Hanford. The program also seeks to improve the scientific basis for decisions on protecting the Columbia River and its ecological systems while preparing Hanford for the future.

The review was commissioned by DOE and conducted by the NRC's Committee on Environmental Restoration Science and Technology. The report notes that "...the work to be carried out under the S&T program appears on the surface to be technically meritorious and is likely, in at least some cases, to make important contributions to enhancing scientific knowledge."

"This report acknowledges the outstanding effort put forth by the entire Integration Project team," said John Morse of the DOE Richland Operations Office Groundwater/Vadose Zone Integration Project. "The roadmap continues to serve as the foundation of the Integration Project's S&T activities and has been used as the template for other sites and the national program. The success was a result of the cumulative efforts of all involved and, in particular, Dr. Michael Graham of BHI and Mark Freshley, Dr. John Zachara and Dr. Terri Stewart of PNNL," said Morse.

Good roadmap

"I think one of the main messages from this report is that the science and technology program is critical to cleanup," said Kevin Crowley, NAS study director. "The other main message is that the Integration Project is off to a good start with this program."

Crowley also noted that the report suggests some improvements. "The S&T program needs to be tied more explicitly to cleanup decisions that have to be made and it needs to improve the documentation and peer review of S&T projects," he said.

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In the report, the NRC committee notes that the S&T program has made positive strides in its work to address areas where research is needed. "The knowledge and technology needed to address the most difficult problems at the site do not yet exist, and advances will not be possible without continuing investments in S&T," the committee stated.

The 14-member panel suggests that the Integration Project's System Assessment Capability may be a useful tool to help set priorities. The System Assessment Capability is a suite of computer models and analytical methods that will provide information about the site-wide impacts of contaminants from past Hanford operations in current waste storage locations.

The report praises the Integration Project for its overall management of the program. "The committee also finds that, given the technical and organizational complexity of the task, the Integration Project has made a good start in creating an S&T roadmap, defining and initiating an S&T program, and fulfilling the promise of its mission."

Useful elsewhere

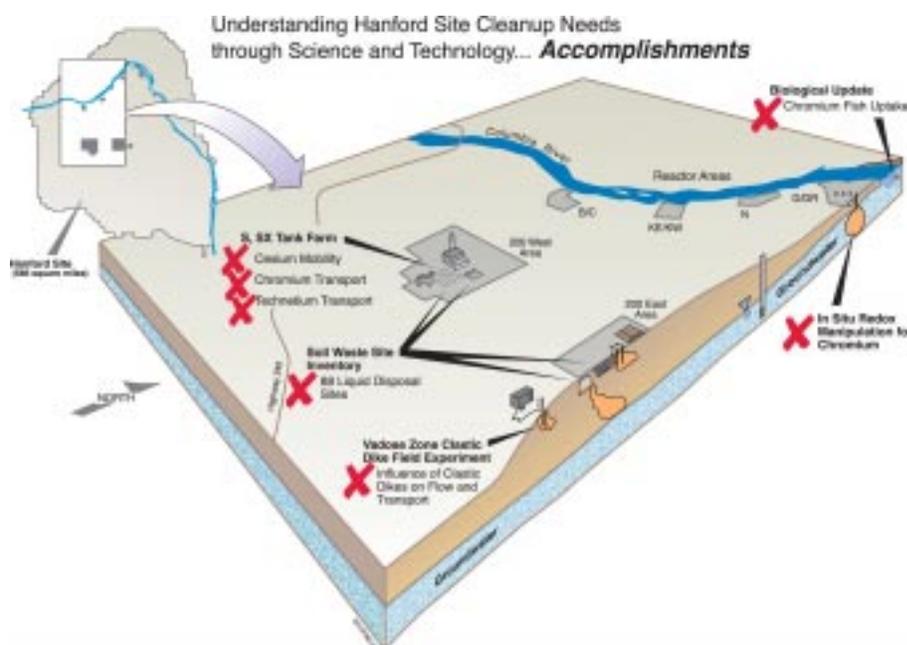
The NRC committee judged that many of the results of S&T work at Hanford potentially will be useful to other DOE sites and, in general, to any other contaminated sites in arid regions. The members found that the involvement of experts from national laboratories and other DOE sites in the Integration Project's planning made an important contribution to the S&T program.

The report also provides recommendations to improve the S&T program. "The committee's suggestions primarily focused on the need to strengthen our methods for prioritizing and documenting the efforts of the S&T program," said Michael Graham, Integration Project manager. "The panel also recommends several areas that are not within the scope of the S&T program but should be made a high priority. These primarily deal with the development of new technologies and methods for characterizing and cleaning up contaminants."

Mark Freshley of PNNL, who manages the S&T program, said the team is reviewing the committee's recommendations to identify the best way of implementing them. "We will implement many of the technical and management suggestions in it," he said. "We also will use the committee's comments as we update our planning document, called the Science and Technology Roadmap."

DOE established the Integration Project in 1997 as its centerpiece for near- and long-term water resources protection in the Hanford Site's cleanup mission. The project's purpose is to inform and influence cleanup decisions by assessing the risks and effects of the Hanford Site's activities on the many users of the Columbia River.

The report will be available in September on the Internet at www.nap.edu. ♦



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Groundwater/vadose zone science and technology program earns positive marks, cont.

Renowned experts make up NRC committee

The National Research Council Committee on Environmental Remediation Science and Technology brought together 14 experts from government, private industry and academia who worked for 18 months to review Hanford's science and technology program. The NRC is part of the National Academy of Sciences.

Committee members include Kevin D. Crowley, National Academy of Sciences, study director; Chris G. Whipple, ENVIRON International Corporation, committee chairman; D. Wayne Berman, Aeolus Inc.; Sue B. Clark, Washington State University; John C. Fountain, State University of New York; Lynn W. Gelhar, Massachusetts Institute of Technology; Lisa C. Green, Lucent Technologies; Robert O. Hall, University of Wyoming; Edwin E. Herricks, University of Illinois; Bruce D. Honeyman, Colorado School of Mines; Salomon Levy, Levy and Associates; James K. Mitchell, Virginia Polytechnic Institute and State University (retired); Leon T. Silver, California Institute of Technology (retired); Leslie Smith, University of British Columbia; and David A. Stonestrom, U.S. Geological Survey. ♦

S&T roadmap aids cleanup

The first Hanford site-wide science and technology "roadmap" is linking cleanup needs with science and technology projects.

"The roadmap describes the objectives, scope and outcome of Hanford science and technology activities related to the Integration Project and provides the basis for detailed work plans for science and technology activities," said Mark Freshley of Pacific Northwest National Laboratory.

Freshley manages the science and technology program, which is part of DOE-RL's Groundwater Vadose Zone Integration Project managed by Bechtel Hanford.

The roadmap was developed through a series of meetings that included representatives of DOE's national laboratories, site remediation contractors, regulators, tribal nations and local stakeholders. The first version of the roadmap was issued in June 1999.

The Science and Technology Roadmap is available on the Internet at www.bhi-erc/projects/vadose/sandt.htm. ♦