

26) in which DOE decided that it would proceed with tank waste retrieval and treatment. In the ROD and subsequent supplemental analyses, DOE acknowledged that there were substantial technical uncertainties that required resolution. Nevertheless, to make progress while resolving the technical uncertainties, DOE decided to implement waste treatment using a phased approach as identified in the TWRS ROD. During the initial phase (Phase I), DOE planned to design, construct and operate demonstration-scale waste treatment facilities. Following the demonstration phase, DOE would construct full-scale facilities to treat the remaining tank waste (Phase II).

DOE's decision in the TWRS ROD was consistent with modifications to the Tri-Party Agreement contained in the M-62, "Complete Pretreatment, Processing and Vitrification of Hanford High-level (HLW) and Low-activity (LAW) Tank Wastes" series of milestones. Accordingly, DOE proceeded with plans to design, construct, and operate facilities that would separate waste into high-level and low-activity waste streams, vitrify the high-level waste stream and vitrify or similarly immobilize the LAW stream. These facilities are now under construction and are collectively referred to as the "Waste Treatment Plant" or WTP.

DOE's strategy for retrieving, treating and disposing of the tank waste and closing the tank farms has continued to evolve, based on information becoming available since the TWRS ROD was issued. New information and proposed changes to DOE's strategy include the following:

- Design of and preliminary performance projections for the WTP support DOE's proposal to extend operations beyond the original plan to operate the WTP for a ten-year period and to enhance throughput compared to facilities planned for in the 1997 ROD.

- New information indicates that deployment of large-scale treatment facilities in approximately 2012 to immobilize waste not processed by the WTP currently under construction, as identified in the TWRS ROD, may be prohibitively expensive (DOE/EIS-0189-SA-3).

- Under DOE Order 435.1 (Radioactive Waste Management), as applicable, DOE may determine that some tank wastes should be managed as low-level waste (LLW) and transuranic (TRU) waste, which may result in changes in how DOE may treat and dispose of portions of the SST and DST wastes from the HLW tank farms.

- DOE wants to consider non-vitrification treatment technologies for LAW and LLW, if these wastes could be immobilized and disposed of onsite or offsite, while providing protection to the human environment comparable to LAW and LLW immobilized by vitrification.

In developing its Performance Management Plan for the Accelerated Cleanup of the Hanford Site (PMP, DOE/RL-2000-47, August 2002), DOE stated its intent to meet its commitments under the Tri-Party Agreement, and identified its plan to complete tank waste retrieval, treatment and disposal by 2028, and to close all of the tanks and associated facilities, including the WTP, by 2033. DOE's current plans call for closing all of the SSTs by 2028.

DOE stated in the PMP that to achieve these objectives, increased capacity will be needed for the WTP, along with additional treatment capacity provided by other waste immobilization technologies, referred to herein as "supplemental" technologies (bulk vitrification, containerized grout, steam reforming, or sulfate removal are examples). Also in the PMP and in the Supplement Analysis for the Tank Waste Remediation System (DOE/EIS-0189-SA3, 2001), DOE concluded that its evolving strategy for treating and disposing of the tank wastes by 2028 and closing the SSTs by 2028 requires NEPA analysis of proposed tank waste retrieval, treatment and disposal, and proposed tank closure actions.

Further, under the TPA Milestone M-45, "Complete Closure of All Single-Shell Tank (SST) Farms," DOE and the Washington State Department of Ecology (Ecology) have identified a process to start discussing how SST closure would occur. An important part of the process DOE and Ecology have defined for closing tank systems is compliance with Washington State Dangerous Waste Regulations that require approval of a closure plan and modification of the Hanford Site Dangerous Waste Permit. Before Ecology can approve either a closure plan or modification of DOE's permit, the State of Washington must fulfill its State Environmental Policy Act (SEPA) requirements. As SEPA is very similar to NEPA, Ecology can adopt a NEPA document if it determines that the document is sufficient to meet SEPA requirements. Ecology has agreed to be a cooperating agency in preparing this EIS.

#### Need for Action

To meet its commitments under the Tri-Party Agreement and implement its plans to close the tank systems and

associated facilities in a timely manner to reduce existing and potential future risk to the public, site workers, and the environment, DOE needs to complete waste retrieval, treatment and disposal of the waste from the SST and DST systems by 2028 and close all SST systems by 2028.

Although DOE is addressing safety and environmental issues posed by tank wastes to minimize current potential risks to human health and the environment, DOE must also implement long-term actions to safely manage and dispose of waste from the tank waste systems, including waste associated with inactive miscellaneous underground storage tanks, and close the SST systems to reduce permanently the potential risk to human health and the environment. These long-term actions also are needed to ensure compliance with applicable Federal requirements regulating the management and disposal of radioactive waste, as well as Federal and Washington State requirements regulating hazardous and mixed waste.

#### Proposed Action

DOE proposes to retrieve waste from the 149 SST and 28 DST systems and close the SST tank farms in a manner that complies with Federal and Washington State requirements and protects the human environment. (Closure of the DSTs and closure of the WTP are not part of the proposed action because they are active facilities needed to complete waste treatment. Closure of the DSTs and WTP would be addressed at a later date, after appropriate NEPA analysis.) DOE proposes to immobilize the retrieved waste in the WTP and through supplemental treatment technologies such as bulk vitrification, grout, steam reforming and sulfate removal, and to package the immobilized waste for offsite shipment and disposal in licensed and/or permitted facilities or disposal onsite. DOE proposes to close the SST farms (including tanks, ancillary equipment and soils) within the tank farm area by 2028. The tanks would be filled with materials to immobilize the residual waste and prevent long-term degradation of the tanks and discourage intruder access. Associated support buildings, structures, laboratories, and the treatment facilities would be decontaminated and decommissioned in a cost-effective, legally compliant, and environmentally sound manner. Under the proposed action, DOE would use existing, modified, or, if required, new systems to assure capability to store and manage waste during retrieval and treatment.