Current Status of Operable Unit Investigations
April 17, 1990

1100-EM-1 (EPA Lead, CERCLA Process)

This operable unit contains an equipment and vehicle maintenance area as well as a landfill. Radioactive contamination is not a concern here, but contamination with such substances as battery acid, antifreeze, and various solvents is known to exist. The Remedial Investigation/Feasibility Study (RI/FS) Work Plan was approved in September 1989.

Status:

- Field activities for Phase I of the remedial investigation have been completed.
- A total of 22 vadose zone boreholes and 16 groundwater wells have been drilled and sampled.
- Groundwater flow at the landfill is generally to the east-northeast toward the 300 Area and away from North Richland.
- Trichloroethylene (a solvent) has been found in concentrations up to 92 parts per billion (ppb) (drinking water standard is 5 ppb) in monitoring wells on the east side of the Horn Rapids Landfill.
- Arochlor 1248, a polychlorinated biphenyl (PCB) has been found in a vadose zone boring on the southern edge of the Horn Rapids Landfill ranging in concentrations from 65,000 ppb just below the surface to 28 ppb at 14 feet down.
- A degradation product of the pesticide DDT was found in the same borehole in concentrations of 1200 ppb near the surface to 14 ppb at 8 feet down.
- The RI Phase I report is being prepared and work is proceeding on the feasibility study which will identify remedial action alternates.

200-BP-1 (EPA Lead, CERCLA Process)

The 200-BP-1 RI/FS operable unit is comprised of nine liquid cribs located in the northern portion of 200 East Area. This operable unit is the first of many operable units at Hanford that contain mixed radioactive and hazardous waste. Radioactive substances present in 200-BP-1 include cobalt, uranium, cesium, strontium, technitium, and plutonium. The principle hazardous substances of concern are cyanide and nitrate. Groundwater contamination attributed to 200-BP-1 has been observed in wells approximately two miles to the north between Gable Mountain and Gable Butte. At present, the extent of groundwater contamination is unknown, but it is known that concentrations of cobalt-60, technitium-99, cyanide, and nitrate exceed health based standards for drinking water. Due to this groundwater contamination, 200-BP-1 was considered a high priority operable unit.

The 200-BP-1 RI/FS Work Plan was approved on March 16, 1990.

200-BP-1 (continued)

Status:

- ❖ Groundwater well installation will begin in April 1990.
- ❖ Drilling through contaminated soil and waste sites is expected to begin in the first quarter of fiscal year 1991.

300-FF-1 (EPA Lead, CERCLA Process)

Adjacent to the Columbia River, the 300-FF-1 operable unit is located in the northeastern part of the 300 Area. 300-FF-1 contains 19 waste units that include burial grounds, retention basins, and both active process liquid disposal trenches and inactive disposal ponds.

Status:

- ❖ The RI/FS Work Plan was made available for public review and comment beginning April 6. Comments will be taken through May 5.
- ❖ A 300 Area topographic base map is being prepared.
- ❖ Sampling of vegetation (specifically asparagus) will be performed in and around the operable unit during the spring growing season. The samples will be analyzed for potential contaminants.
- ❖ Surface radiation surveys are being restarted. They were discontinued over the winter.

300-FF-5 (EPA Lead, CERCLA Process)

The 300-FF-5 operable unit consists of the groundwater and sediments beneath the 300-FF-1, 300-FF-2, and 300-FF-3 operable units. This operable unit represents the major pathway for contaminants to be transported from the 300-FF-1, 2, and 3 operable units to the Columbia River.

Status:

- ❖ The RI/FS Work Plan was made available for public review and comment beginning April 6. Comments will be taken through May 5.
- ❖ Field activities will begin in October 1990.

100-KR-1 and 4 (EPA Lead, CERCLA Process)

The 100-KR-1 operable unit consists of the major liquid disposal units in the 100-KE and 100-KW reactor areas, including the "mile-long K trench". The 100-KR-4 operable unit consists of the groundwater and sediments beneath the 100-K areas.

Status:

- ❖ The RI/FS Work Plans for these operable units are being prepared and will be submitted to DOE, EPA, and Ecology at the end of May for their parallel review.

100-BC-1 and 5 (EPA Lead, CERCLA Process)

The 100-BC-1 operable unit contains the major liquid disposal sites that services the 100-B reactor, while the 100-BC-5 operable unit corresponds to the extent of contaminant in the groundwater and surface water influenced by all sites in the 100-BC Area. The 100-BC Area is located on the Columbia River approximately 3 miles downstream from the Vernita Bridge.

Status:

- ❖ Draft RI/FS Work Plans for these two operable units were submitted for concurrent DOE and regulatory review on April 9, 1990.

100-HR-1 (Ecology Lead; RCRA Process)

This operable unit is located in the 100 Area, in the north-central part of the Hanford Site. It includes cribs, trenches, burial grounds and evaporation basins. These waste management units have received wastes from the following activities: process liquid waste transfer, treatment and disposal; reactor exhaust stack emissions; radioactive solid waste disposal, sanitary wastes transfer treatment and disposal; and N Reactor fuel fabrication liquid process waste treatment and storage. This unit also includes the H Reactor.

Contaminants of concern include radioactive substances, metals, non-metallic ions, and volatile organic compounds. There is confirmed soil and groundwater contamination with substances including: radionuclides, chromium, copper, lead, and tetrachloroethylene.

Status:

- ❖ The evaporation basins are being cleaned out and closed in accordance with RCRA and Washington State standards.
- ❖ Numerous meetings have been held with the U.S. Department of Energy (DOE), EPA and the Washington State Department of Ecology to resolve technical and programmatic issues. Many of the issues being discussed have site-wide applicability.
- ❖ Ecology has submitted technical and programmatic comments to DOE.
- ❖ Approval of the work plan is expected in early summer.

100-HR-3 (Ecology Lead, RCRA Process)

This "groundwater" operable unit is designed to provide a regional assessment of the environment in the north-central part of the Hanford Site. As such, it includes groundwater, surface water, sediments, and aquatic biota associated with the 100-HR-1 and -2 operable units, the 100-DR-1, -2 and -3 Operable Units, and the 100-IU-4 Operable Unit.

Status:

- ❖ Productive discussions among the parties on integrating the "source" operable units investigations continue. Strategy papers have been written.
- ❖ The integration strategy, with an emphasis on near-term remediation to protect the public health and environment, is being finalized for incorporation into the work plans.
- ❖ The 100-HR-1, 100-HR-3 and 100-DR-1 Work Plans are expected to proceed through the review cycle together.

100-DR-1 (Ecology Lead, RCRA Process)

This operable unit is also located in the 100 Area, in the north-central part of the Hanford Site. It includes numerous facilities associated with liquid waste disposal operations. These facilities include cribs, trenches, liquid storage basins. retention basins, process effluent pipelines, contaminated reactor ancillary facilities, sanitary wastes facilities, and many support facilities such as solvent storage tanks. This unit also includes the RCRA-regulated 100-D ponds, and the D Reactor.

These waste management units have received the following types of wastes: process liquid waste and sludge; reactor exhaust stack emissions; radioactive and non-radioactive solid wastes, hazardous wastes, other liquid wastes and sanitary wastes. Contaminants of concern include radioactive substances, corrosive chemicals, petroleum products, solvents, PCBs and metals. There is confirmed soil and groundwater contamination with substances including: radionuclides, chromium, and copper.

Status:

- ❖ Review of this work plan by Ecology was delayed to allow issues involving integration with the 100-HR-3 Work Plan to be further developed. Ecology is scheduled to submit its review and comments on this work plan to DOE on April 24, 1990.