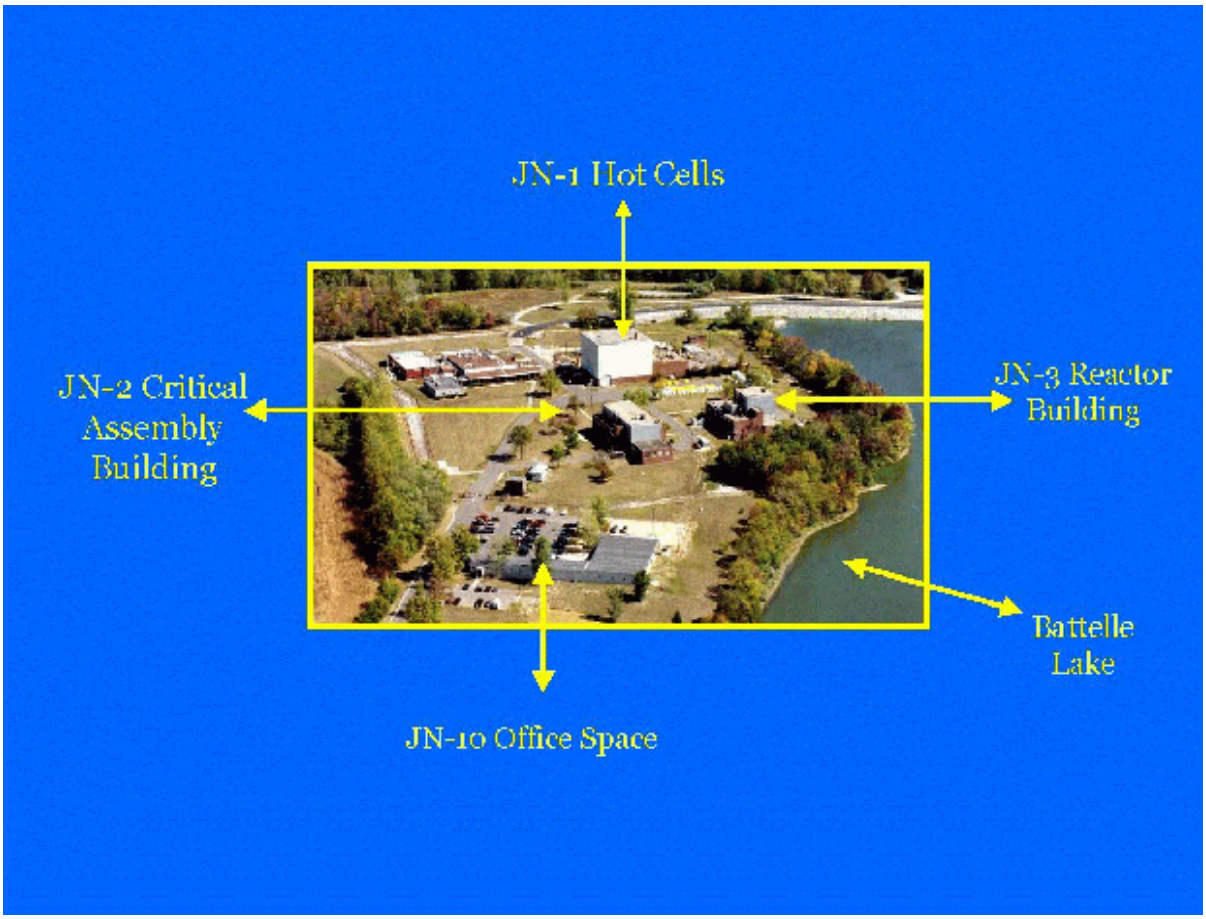
PREDECISIONAL DRAFT

OHIO FIELD OFFICE
ASHTABULA, OH • COLUMBUS, OH
FERNALD, OH • MIAMISBURG, OH
WEST VALLEY, NY

COLUMBUS ENVIRONMENTAL MANAGEMENT PROJECT



PERFORMANCE MANAGEMENT PLAN
FOR ACCELERATING CLEANUP
JULY 24, 2002

PREDECISIONAL DRAFT

Columbus Environmental Management Project

PERFORMANCE MANAGEMENT PLAN

Section 1 Purpose

A critical mission of the Department of Energy (DOE, or the Department) is the restoration of private facilities and sites contaminated during the course of work for the Federal Government. As part of this mission, a key activity is the safe and cost-effective decontamination and remediation of facilities owned by the Battelle Memorial Institute (BMI) in and near Columbus, Ohio. The purpose of this Performance Management Plan (PMP) is to provide a management-level synopsis of how the acceleration proposal for the Columbus Environmental Management Project (CEMP), submitted in May 2002 by the Ohio Field Office will be executed. The Plan documents an improved approach to accelerate the closure of the Battelle West Jefferson site by 3 years from 2009 to 2006 and reduce the life cycle baseline cost by $25 million.

In August 2001, the Assistant Secretary for Environmental Management created the Top-to-Bottom Review Team in response to the Secretary of Energy's direction that a review of the EM program be undertaken. In their February 4, 2002 report, *A Review of the Environmental Management Program*, the Top-to-Bottom Review Team emphasized that risk reduction, not risk management, is key to accelerating closure. It stressed that a sense of urgency is needed to accelerate closure. The Ohio Field Office agrees, and the proposal to accelerate completion of the CEMP focuses funding on risk reduction, site closure, and high mortgage reduction work. It demands a higher standard of performance and accountability from both DOE and the contractor, while relying on sound, proven technologies and project management systems. Although existing technologies are believed to be sufficient for achieving closure, new technologies can and will be considered and applied where beneficial. Furthermore, contingency plans currently are being formulated for priority work (e.g., alternative disposal options for waste streams).

The implementation challenges and risks associated with the CEMP are largely local and within the resolution capabilities of the Project Team. Even so, one significant issue will require senior DOE Headquarters direct support and involvement. This is the shipment to and temporary storage of project remote-handled Transuranic (RH-TRU) waste at an interim site until such time as WIPP receives an amended state permit to receive RH-TRU.

Document Organization

Section 2 of this PMP provides background information about the CEMP, setting the context for this acceleration initiative. Section 3 documents the cleanup end state, thus clearly defining the physical finish line for closure. Section 4 presents a comparison of project acceleration versus the reference case, the overall and critical path strategies, and lists key assumptions and risk management strategies. Section 5 is the Regulatory Framework, describing how the Project Team will function in concert with the governing regulatory authorities. Section 6 is the Management Framework, describing the approach that will be followed to assure that acceleration goals are met, including contractual and management approaches. The Government Furnished Services are also included in this section.

Section 2 Background

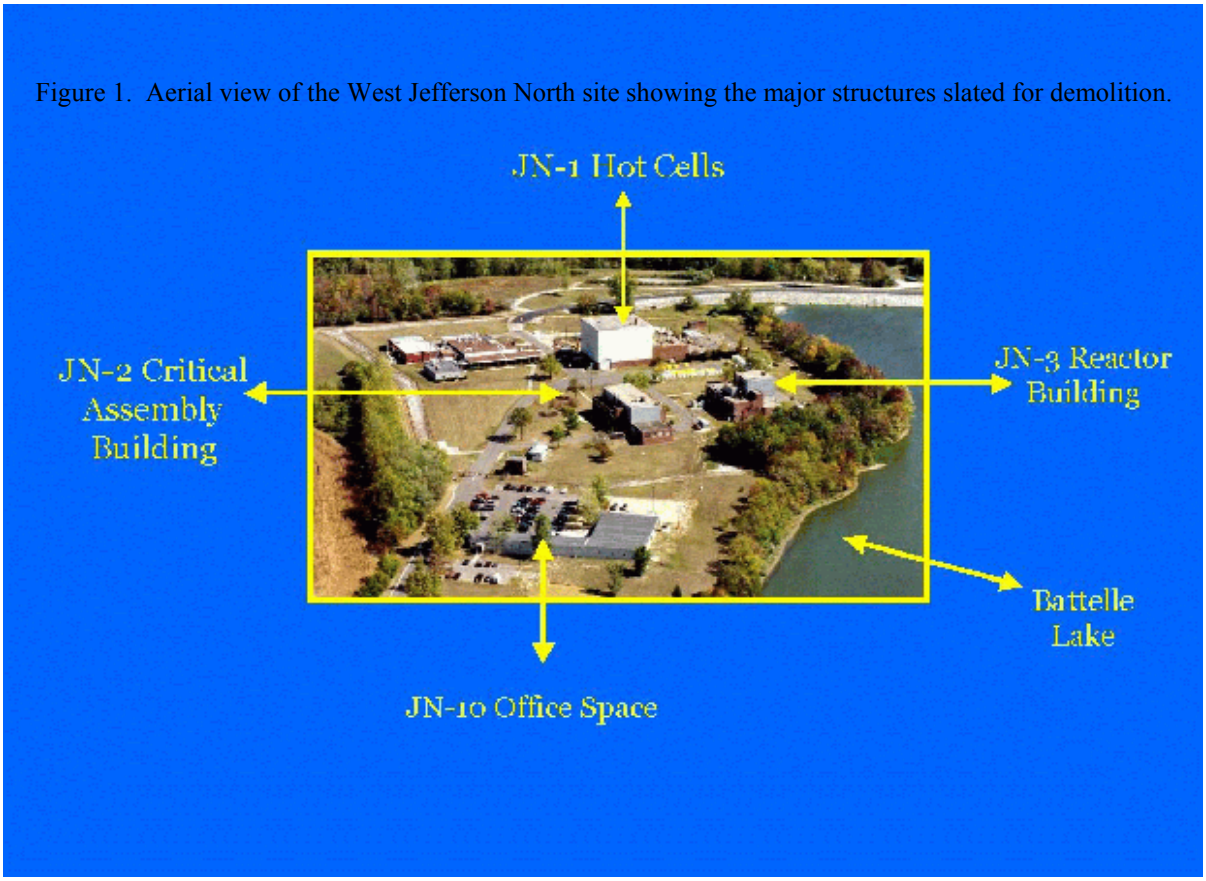
Battelle performed atomic energy research and development historically for the Department of Energy (DOE) and its predecessor agencies between 1943 and 1986 at its Columbus Laboratories sites. The nuclear research included fabrication of uranium and fuel elements; reactor development; submarine propulsion; fuel reprocessing; and safety studies of reactor vessels and piping as part of the government's fuel and target fabrication program. The Columbus Environmental Management Project (CEMP) was established in 1986 as a cost share venture (DOE contributing 90% and Battelle 10%) to decontaminate and decommission the Battelle facilities radioactively contaminated as a result of government sponsored nuclear research. Completion of the decontamination and decommissioning activities will discharge DOE's final obligation under contract W-7405-ENG-92.

A total of 15 buildings and surrounding land areas comprised the initial decommissioning project, located at two sites. Nine of the buildings are in the main Battelle complex in Columbus, Ohio (King Avenue site - KA). D&D of the KA facilities was completed in 2000, with all affected buildings released for reuse by Battelle without radiological restrictions. The remaining six buildings are located at the Battelle research area near West Jefferson, Ohio.

The West Jefferson Site is located approximately 15 statute miles west of downtown Columbus, Ohio. The entire West Jefferson site comprises a 1,183 acre tract, 500 acres of which are devoted to three research centers - north, middle, and south. The eastern site boundary is coincident with the channel of Big Darby Creek, a State and National Scenic River.

Three buildings in the South Materials Science Research Area of the West Jefferson site (WJS) were lightly contaminated by historic work with radioactive materials, and were completely remediated and released in 1989-90. The remaining buildings are part of former Nuclear Sciences Area (Figure 1.) which occupies an 11-acre fenced enclosure in the northern portion of the West

Figure 1. Aerial view of the West Jefferson North site showing the major structures slated for demolition.



Jefferson North (WJN) site. This enclosed facility consists of four major buildings, a guardhouse, and several smaller structures on a bluff overlooking Darby Creek and Battelle Lake. Three of the
major buildings and their support structures are the focus of the final phase of the decommissioning project. Outside of the fenced area, several active and abandoned filter beds, part of the site sanitary sewer system, are also included in the project.

Building JN-1, the hot cell laboratory, was originally constructed in 1954-55, and was added to over the years. As constructed, the building encloses one very large cell (the High Energy Cell); two large cells (high-level and low-level); several mechanical test cells; and a bank of 10 small alpha-gamma cells in a basement area. The High Energy Cell was designed to receive intact fuel assemblies from commercial power plants. A fuel transfer pool measuring 20' X' 20' X 48' deep connects to the High Energy Cell by means of a canal. Supporting facilities included areas for cask handling, solid and liquid waste disposal, contamination control, equipment decontamination, and related operations. All cells were designed for remote manipulation and have several operating stations. Each station had a lead-glass oil-filled viewing window.

All of the cells in JN-1 have very high radiation fields as a result of extensive research related to spent fuel examination; post-irradiation examination of reactor components; source encapsulation; destructive testing of shipping containers; and studies of irradiated materials/structures. Although all intact fuel elements were removed and shipped to the DOE's Idaho National Engineering Laboratory (INEL) in 1986, the cells still contain an estimated 6,000 - 10,000 curies of activity in the form of metallurgical samples; contaminated equipment; fuel pieces; filters from the storage/transfer pool system; and distributed contamination on interior cell surfaces. Radionuclides of concern include uranium (enriched, natural and depleted); thorium; transuranics (Pu, Np, Am, Cf); activation products (Co-60); and mixed fission products (Sr-90, Zr-95, Nb-95, Ru-106, Cs-134/137, Ce-144). Radiation fields within the cells themselves are on the order of tens to hundreds of R/hr, with lower levels (less than 2 mR/hr) in operating areas. Specific items in the cells have been found which exceed 5,000 R on contact. Within the hot cells, surface contamination as high as 1.2 x 10 exp 6 dpm/100 cm2 has been measured.

In 1996, the water in the fuel transfer pool was removed. The pool is currently being used to store packaged TRU waste. Between 1998 and 2001, all loose material and equipment in the different hot cells was removed and staged for processing. Through an aggressive program of waste sorting, field screening, and decontamination, over 90% of the material removed was packaged for disposal as low-level waste. The remaining material is being packaged in the High Energy Cell as TRU waste. In 1999-2000, the 10 alpha-gamma cells were emptied and removed. As of mid-2002, the low- and high-level cells and the mechanical test cells have been emptied, and gross decontamination has reduced internal dose rates significantly. Cell windows and manipulators have been removed, and the cells have been put into a stable radiological condition awaiting final demolition.

Building JN-2 is a two story, steel-frame, concrete block, and brick structure with an attached high bay. The high bay area covers about one-fourth of the first floor and extends beyond the second story roof. It was designed and used for criticality studies and also housed a plutonium laboratory and special nuclear materials vault. The building currently houses the project's radioanalytical laboratory. Contamination is minor and is found in three contiguous laboratories on the first floor, in the vault, and in a laboratory drain system connecting to an underground holding tank.

Construction of the reactor facility in Building JN-3 began in 1955 and the reactor became operational in 1956. Building JN-3 is 131 feet long and 66 feet wide. It is constructed of cement block faced with brick and aluminum siding. The building is serviced by a 10-ton crane and a drive-through truck port. A 2-½ story bioshield was situated in a large, open high bay enclosure where it surrounded the swimming pool type reactor. The 2-megawatt Battelle Research Reactor was designed to provide an intense source of neutrons and gamma rays for irradiation of various materials during experimentation. The core of the MTR-type aluminum fuel assemblies was suspended in demineralized water, 25 feet below a mobile bridge crane. The reactor operations ended in 1974. After the reactor fuel was shipped for reprocessing and the reactor pool was

drained, initial reactor decontamination and dismantling operation took place over a 9-month period beginning January, 1975. This included removal of the primary coolant pumps, associated piping, and the reactor pool liner. The bioshield was sealed with paint to eliminate smearable contamination. In FY 2001, the 700-ton bioshield was removed by sectioning the reinforced concrete with a diamond wire saw. Shipment of the bioshield concrete for disposal reduced the radioactive inventory in the building by 95%. The remaining activities include removal of contaminated sub-floor piping, and spot surface decontamination. The building will be held available for temporary storage of TRU wastes from the hot cell clean-up effort, and will eventually be demolished along with the other major site structures.

The External Areas comprises 11.5 acres of grounds surrounding the above buildings and includes the underground drain system. Also included in the external area are a series of sand filter beds - part of the site sanitary sewer system - which became lightly contaminated during the decades of active research operations.

Section 3 End State

General

This description of the end state for the West Jefferson North site has been incorporated (in more detail) into the DOE request for a completion contract proposal issued to Battelle. Buildings JN-1, JN-2, and JN-3 will be demolished and the areas between these buildings will show minimal evidence of the current facilities. Support buildings, slabs, and site utilities will be removed as defined in the contract. Areas where buildings have been removed, or where contaminated materials have been excavated, will be backfilled, compacted to a degree that will enable future construction, and covered with grass.

Known contamination will be removed as necessary, in accordance with project release criteria. The project release criteria is based on Nuclear Regulatory Commission (NRC) regulatory requirements for obtaining release of the West Jefferson North buildings and related grounds for use without radiological restrictions. As such, meeting the release criteria will minimize any potential risk to human health and the environment. Exceptions, such as decontaminating or excavating areas to below release criteria or partially excavating areas above release criteria will be on a case-by-case basis by mutual agreement between DOE and Battelle; such decisions will be based on “as low as reasonably achievable” (ALARA) requirements and full consideration of any increased risks to human health, worker safety, and the environment. Once the project is complete, all DOE liability for the West Jefferson site will be eliminated.

Specific

Building JN-1

JN-1 will be demolished and disposed of both as LLW and, to the extent practical, as free-released material. Floor slabs, foundations, and footers will be removed. The former fuel transfer pool walls (from the top to approximately 14 feet below grade) are expected to be included in the demolition. The lower portion of the pool walls (from approximately 14 feet below grade to the bottom) and the pool bottom are expected to be filled in and abandoned in place. The stainless steel pool liner will be removed prior to demolition.

Buildings JN-2 and JN-3

After JN-2 and JN-3 above-grade structures are decontaminated to the extent necessary to remove radiation controls and satisfy release limits, they will be demolished as clean structures. Subsurface slabs and foundations will be removed to expose the subsoils for radiological surveying and sampling to verify that the soils satisfy release criteria.

Building JN-6

JN-6, the Guard House and Emergency Command Center (ECC), will be surveyed and is expected to be free released. Although JN-6 is included in the project, it is not expected to be demolished until site security and emergency command functions are no longer required. Additionally, Battelle may request that JN-6 be left in place depending upon future site usage. The activity is not on the critical path and there would be no impact on the closure date.

Buildings JN-10 & JN-11

The JN-10 & JN-11 modular structures were acquired for the project. They will be placed on the DOE excess property list and removed from the site unless Battelle requests that one or both remain. Since JN-10 & JN-11 were called into service only for this project, the JN-10/11 site will be returned to a condition as though the modular units had never been there. When JN-10/11 are removed from the existing location, the support columns, sanitary tank, and utilities will be removed and the site restored to its original condition. Battelle may prefer to leave some items in place such as parking lot areas and lights. The activity is not on the critical path and there would be no impact on the closure date. Also, it is necessary to assure that JN-10/11 utilities are not disrupted when JN-1, JN-2, and JN-3 are demolished since JN-10 & JN-11are expected to be removed last.

Site Utilities

Tanks and sumps will be removed, and any radioactive contamination in the soil will be remediated to or below release criteria based on survey results. Diesel fuel oil tanks are considered part of the buildings since each was installed to serve a specific building. The CEMP effort includes draining the fuel oil, removing/disposing of the tanks. However, the scope of the project does not include remediation of fuel oil spills or EPA closure reports, unless a spill occurs

as a consequence of D&D operations. Disposition of the reactor coolant pump tank north of JN-3 will be based on the results of contamination surveys. If it is contaminated, it will be decontaminated prior to its removal in conjunction with the demolition of Building JN-3.

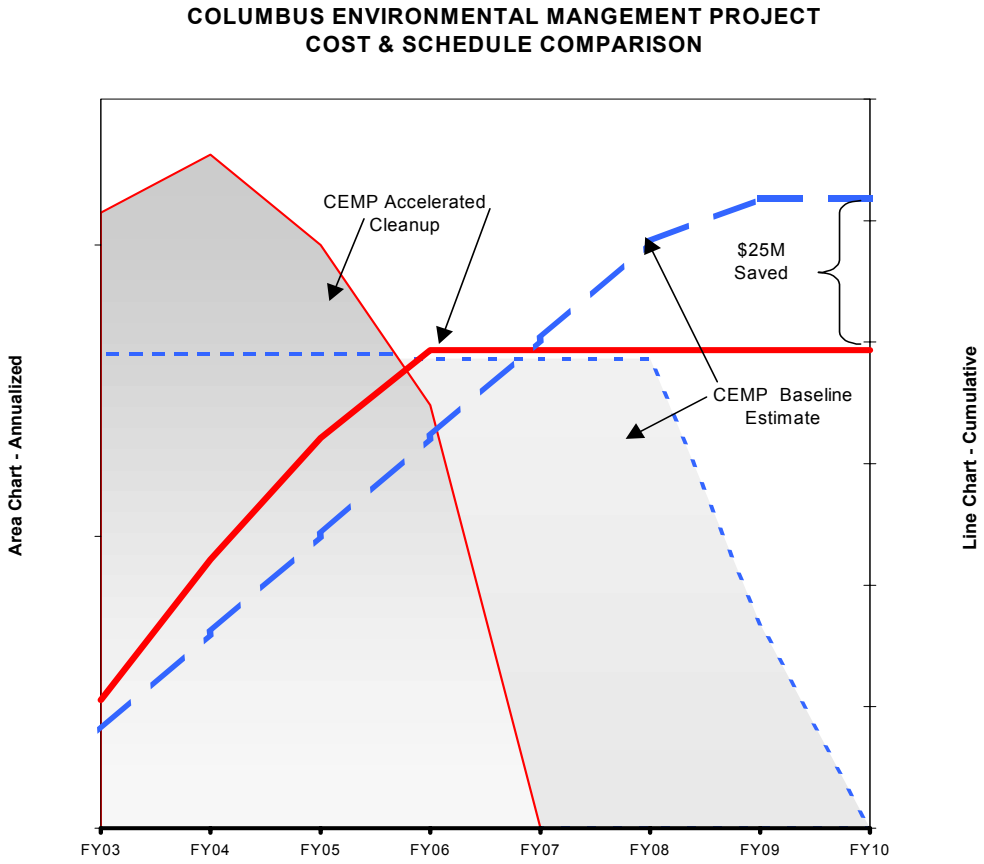
Additional utilities to be removed include: a chemical waste sewer associated with a former reactor-cooling tower west of Building JN-3; the sanitary sewer lines leaving Buildings JN-1, JN-2, JN-3, and JN-4 and the line carrying sewage to the Active North Filter Bed; rainwater conductors; transformers and electrical lines which served each of the buildings to be demolished (once power is no longer required); material storage, radiological control, and crew trailers utilized as part of the clean-up; several small out-buildings; gas, water, and communications service lines.

Filter Beds

The filter bed areas will be remediated as necessary to remove known contamination in accordance with established release criteria, based on survey and sampling data. Exceptions to project guidelines, such as excavation of areas below release criteria or partial excavation, abandonment of areas above release criteria (e.g., the section of sanitary sewer that runs under the dam will be left in place and filled with a grout material to fix the contamination and render the pipe unusable), will be on a case-by-case basis by mutual agreement between DOE and Battelle. The final state of excavated areas will include backfill and grass cover.

Section 4 Baseline Acceleration

Base case vs. accelerated case



Overall Strategy for Risk Reduction

During FY 2001, the BCLDP was reengineered to develop a strategy for accelerating site closure from 2009 to 2006 and reducing life-cycle costs and risks. Using schedule optimization approaches, a number of work elements were identified that could be accomplished concurrently rather than sequentially with the added benefit of removing them from the critical path. Notable among these are the acceleration of Building JN-3 demolition by 18 months to May 2004, the acceleration of Building JN-2 demolition by 50 months to July 2004, and the acceleration of external areas remediation by 27 months to September 2006. Accelerating these major project elements and keeping them off of the critical path could reduce project risks in two primary

ways. First, the period of time that these contaminated buildings and grounds contribute to the overall site risk is significantly reduced by nearly two years in the case of Building JN-2 and by more than four years in the case of Building JN-3. Secondly, by completing these elements earlier in the project as non-critical path activities, the inevitable surprises that occur on such projects can be dealt with more effectively without affecting site closure, and the lessons learned can be applied to the demolition of Building JN-1 to help mitigate similar risks to the critical path.

A key element of the reengineered strategy is associated with accelerating off-site disposal of transuranic waste. The previous strategy was to transfer the waste to Building JN-3 until it could be shipped to the WIPP site for permanent storage. That strategy made it possible to complete the decontamination activities and start the demolition activities for Building JN-1 sooner, but in return it put Building JN-3 on the critical path with a complete dependency on the WIPP site obtaining their permit to store remote-handled TRU waste in time for the BCLDP to meet a 2006 closure. The decision to store the TRU waste at an approved interim off-site location eliminates the potential risks posed by highly radioactive wastes to human health, workers, and the environment more than four years sooner than under the previous strategy.

Critical Path Strategy

Accelerated TRU Waste Shipments - Approval to ship packaged remote-handled TRU waste to an interim site for temporary storage has been delayed for a variety of reasons, with the result that the time frame available for early removal of this material has shrunk. The only Type B shielded shipping cask certified for inter-site shipments of RH-TRU - the CNS 10-160B - is in short supply. In addition to the one cask purchased jointly by the project and WIPP, and one cask which is available for commercial lease, the strategy now being pursued is to borrow a third cask from the U.S. Navy for a three-month period. Using three casks, it will be possible to remove the inventory of RH-TRU waste from the West Jefferson site by the end of FY 2003. Acceleration funds will make it possible to provide the Navy with an offsetting shipment capability for the time period that their cask is in use by the project while avoiding delays in other critical path activities.

Removal of Hot Cell Walls - This effort will be done as a competitively-bid, fixed price sub-contract, utilizing the diamond-wire saw technology proven in the size reduction/removal of the JN-3 Reactor bioshield. Acceleration funding will allow the total contract price to be obligated up front, as opposed to being funded incrementally. This will result in lower overall bids from the offeror(s). Also, by bidding the work as a single package, compared to bidding each cell separately, there will be more opportunities for efficiency in terms of:

- Reduced set-up costs
- Shared equipment
- Multiple simultaneous cutting operations
- Consolidated cooling water management
- Reduced management and administration

Sequenced building demolition – The accelerated case allows the project to remove the two non-critical path buildings early with the benefit of:

- Avoiding site congestion caused by trying to demolish all 3 large buildings simultaneously (this has significant implications for safety).
- Evaluating the nature and magnitude of ground water infiltration during foundation removal of a clean structure (Building JN-3) prior to finalizing bid specifications for removal of the contaminated hot cell building (JN-1). This will result in more complete and lower cost bids, and less likelihood of follow-on change orders.
- Earlier reduction of the site "footprint" requiring access and radiological controls.
- Early recognition of any soil contamination beneath the foundations of Buildings JN-2 and JN-3, permitting remediation without compromising the critical path schedule.
- Improved access to and support of the most complex demolition effort, that of the JN-1 hot cell facility.

JN-1 Fuel Pool Removal - the 48-foot deep fuel pool and transfer canal to the High Energy Cell will not be removed completely. The stainless steel pool and canal liner will be removed under a fixed-price sub-contract, and any contamination on the concrete wall so exposed will be remediated. Once the pool is determined to be clean, the parapet and underlying wall - down to 14 feet - will be toppled into the pool and the whole backfilled to grade level. Limited pool removal will avoid the need for the extensive water control measures that accompanied the original excavation.

Filter Bed Remediation - subsurface contamination in and around two abandoned filter beds will be removed through an in-situ pump and treat process (the WIDE System), being deployed as an EM-50 funded technology initiative. If successful, this approach will avoid a costly excavation effort on the flood plain of a National Scenic River (Big Darby Creek). Contingency plans include spot excavation guided by the project's cone penetrometer, and/or re-evaluation of the release criteria for this area of the site based on a RESRAD evaluation of pathways and allowable public dose.

External Area Characterization and Release - grid sampling and analysis of soil within the fenced area of the site has been completed. Surface scans necessary to make final determinations of the radiological condition of the external areas have been hampered by the elevated background ("shine") from the hot cell building. The project will deploy a recently developed and proven industry approach to gamma-ray spectral analysis coupled with statistical data integration to identify areas which can be free-released. This will result in early reduction of the site footprint needing to be held under radiological controls.

If additional funds were available, the following prioritized list opportunities for further acceleration could be implemented:

1. 10-12 hour days, weekend and second shift work schedules on critical path activities;
2. Relocate West Jefferson North site utilities ($20K);
3. Remediation of active north ($240) and old middle area filter beds ($200K);
4. Remediation of storm lines ($530K) and JN-1 lake outfall line ($20K) plus engineering controls, and
5. Remediate selected JN-1 external areas.

Top-to-Bottom Initiatives

The following initiatives are being implemented to accelerate completion and reduce costs:

- **Improve Contract Management** – Enhanced definition of scope in the revised baseline, quantitatively defined end points, and incorporated objective performance incentives on completion of the project.
- **Accelerated, Risk-Based Cleanup Strategy** – Ship TRU waste off site to RL-Hanford to accelerate critical path cleanup activities, enhance safety, reduce risk, save money, and consolidate activities that require safeguards and security. The 10-160B shipping cask reduces the number of required shipments by two thirds, and will benefit projects DOE wide.
- **Mortgage Reduction** – With a relatively small additional investment, the CEMP can be completed 3 years earlier and reduce the Total Estimated Cost by $25 million.
- **Near-term Application of Technology** – WIDE system is being installed to reduce the cost of remediating the inactive filter beds by chemically removing cesium from the ground which will reduce required soil excavation.

Key Assumptions

- Project-generated Transuranic (TRU) waste will be shipped to an interim site for temporary storage until such time as WIPP is ready to begin RH-TRU disposal.

- The project will pursue the most cost-effective approach to the use of subcontracted labor and services, including fixed-price subcontracts wherever feasible.

- Low-level and mixed low-level waste management will include a combination of DOE and commercial sites for treatment and disposal to minimize total waste management costs.

- There will be no NEPA-related delays in any activity. The 1990 Environmental Assessment and Finding of No Significant Impact (re-affirmed in 2002) will continue to remain in effect for the duration of the project.

- Release criteria for buildings, materials, equipment, and land areas will be consistent with the project's approved Technical Bases for Surface and Volumetric Release.

- An Independent Verification Contractor (IVC) will evaluate the effectiveness of the decontamination effort following Battelle's final status surveys. The U.S. NRC will continue to accept the results of DOE's independent verification surveys.

- Contract closeout costs beyond release of the site to Battelle, removal of DOE-furnished equipment, and records turnover, are not included in the baseline estimate.

- Once clean-up goals are reached, no long-term monitoring or surveillance of the site will be required.

Risk management

The project's schedule is totally dependent on unrestricted access to off-site waste treatment, storage, and disposal facilities and services. There is no capacity on-site for storage of radioactive waste beyond accumulation of economic shipment quantities. Also, Battelle does not hold a RCRA permit (Part A or B) for mixed waste storage. As committed in the project's Site Treatment Plan, all mixed waste must be shipped within 90 days of generation for treatment and/or disposal. DOE is not liable for hazardous waste without associated radioactivity.

Critical to the project's overall schedule is the processing of the 369 m^3 of highly contaminated material and equipment in the JN-1 Hot Cell Facility. Demolition and site release cannot take place until the inventory of highly contaminated materials within several hot cells are packaged and shipped off site. An aggressive program of waste sorting, characterization and decontamination has resulted in a much smaller volume of waste (~25 m^3) that must be controlled as remote-handled TRU waste. Of the now estimated 100-120 drums of newly generated TRU, between 3 and 5 percent will carry hazardous waste codes. All TRU waste from the project has been confirmed by the National TRU Program as "defense co-mingled", and eligible for disposal in the Waste Isolation Pilot Plant (WIPP).

WIPP will not be permitted and ready to begin receiving RH-TRU for disposal until after 2004. This date is too late to support the West Jefferson closure schedule. In order to meet the requirements of the Closure Site schedule, and to remove DOE liability for a privately owned facility, it is necessary to place the West Jefferson TRU waste into temporary storage at a site with capabilities to handle such waste. Several options studies over the past decade have consistently identified the DOE Hanford site in Washington State as preferred for storage of this material.

Section 5 Regulatory Framework

Battelle, as the owner of the West Jefferson North Area Nuclear Sciences Facility, is licensed by the Nuclear Regulatory Commission. In 1977, following decommissioning of the Battelle Research Reactor, the license was converted from operation to possession only. The license was further modified in 2001; the portion of the license related to ongoing research utilizing radioactive materials and sources was transferred to the Ohio Department of Health; NRC, however, retains authority over the decommissioning component of the license (as it relates to West Jefferson North only).

A decommissioning plan approved by the U.S. NRC in December 1993 initially committed Battelle to completion of the West Jefferson cleanup by September 30, 2000. The D&D effort at Battelle's facilities is viewed by the U.S. NRC as a license termination action; therefore, all license termination requirements apply. The U.S. NRC has published a revised rule (the Timeliness Rule) requiring that D&D at facilities under material licenses, such as West Jefferson, be completed within two years of approval of a D&D plan unless a specific waiver is granted. This plan is comparable to a compliance agreement issued by U.S. EPA or a state regulatory agency. Battelle must petition the U.S. NRC for permission to extend the project's schedule beyond the currently approved date. Under its regulations, NRC has the authority to grant such an extension for specific circumstances. However, as NRC has noted in recent communications with DOE: "The regulations (10 CFR 70.38) do not address funding issues as an acceptable basis warranting major alteration of the approved schedule. In such a case, Battelle may be directed to access alternative funding in order to maintain the approved cleanup schedule." Should DOE funding not materialize consistent with the requirements of the completion baseline, and NRC issue an enforcement direction, the DOE would be presented with a liability where the contractor (Battelle) performs work against the defined contract scope but for which appropriated funds have not been made available.

In January 2002, the DOE Ohio Field Office and representatives of NRC's Region 3, met to renew their understanding of each agency's role in directing and overseeing the remediation of the West Jefferson site. As a result of this meeting, the two organizations agreed to work more closely together to assure that the D&D effort precedes as efficiently and safely as possible. This includes:

- NRC will place DOE OFO on distribution for all Battelle license correspondence, and inspection plans and reports.
- NRC inspectors will routinely meet with DOE representatives during NRC inspections.
- DOE staff will provide periodic (e.g., quarterly) briefings to the NRC regarding budget and West Jefferson project status. DOE will promptly inform NRC should there be potential funding conflicts, which could significantly delay the D&D effort so that NRC management can consider appropriate options.
- DOE will provide NRC with copies of their weekly project surveillance reports. DOE-CEMP staff will work with the NRC inspectors in identifying safety related trends and concerns.
- The NRC will work closely with the DOE should any issue regarding license authorization arise which could involve the need for NEPA (or other) review.

A letter of intent signed by DOE and NRC in 2002, commits both agencies to seek accelerated project completion by fostering improved work practices, expediting regulatory reviews, sharing technical resources, and improving communication at all levels. Agreement has been reached with the NRC that once the primary source term (TRU waste) is removed from JN-1 and gross decontamination of the High Energy Cell is complete, the license should be amended to down-grade the facility from a nuclear to radiological status. That will allow us to make significant reductions in Quality Assurance and Surveillance and Maintenance costs.

The CEMP also maintains a mixed-waste Site Treatment Plan (STP) pursuant to the Federal Facilities Compliance Act. This plan, approved by the Director of the Ohio EPA, identifies current and projected inventories of mixed wastes as well as the options proposed for treating each mixed waste stream to meet Land Disposal Restrictions. As Battelle, a large quantity generator under RCRA, does not possess a Part A or B permit for storage of hazardous waste, all mixed wastes generated by the project must be shipped to a permitted treatment, storage, or disposal facility within 90 days of generation. The STP and accompanying [OEPA] Director's Findings and Orders specify the steps to be followed should this time frame for removal of mixed wastes not be possible.

Battelle, as a private facility owner, is bound by all other applicable Federal, state and local regulations. Battelle Memorial Institute is a non-government organization and thus primary support for many of the safety and health functional areas is provided by the owner's corporate organization. The principal safety and health drivers for the project are the radiation protection standards promulgated by the U.S. NRC (e.g., 10 CFR 20) and the general industry, construction safety, and hazardous waste operations standards of OSHA (29 CFR). As a result, DOE formally decided to not impose DOE Orders where such orders would duplicate existing regulations that the project already is required to follow.

Section 6 Management Framework

Management Systems

For the effort to complete the West Jefferson cleanup, detailed scope definition under the project work breakdown structure followed a systems engineering approach. Functional requirements were broken down into individual work activities with interfaces and dependencies defined. Activity managers then prepared data templates for each lower level activity, identifying staffing needs (i.e., crew size, skill mix), determining productivity factors, listing needed equipment, materials, and any specialty subcontracts. From this a cost and schedule estimate was built.

The data templates become the basis for developing an integrated logic for the project. This sequence of activities is iterated with the activity managers to remove redundancies, identify resource conflicts, and to confirm activity duration. Required resources (funding, equipment, and personnel) are leveled, and an initial project critical path and controlling set of assumptions are defined.

For the CEMP, several internal and external reviews were conducted of the baseline to challenge the technical approach, the assumptions, the duration of activities, and their sequencing. From these reviews the technical approach was validated, the key project risk elements confirmed, and recommendations were made for moving uncertainties out of the base cost estimate and into a DOE-held contingency pool.

The project has had a formal baseline change control procedure in place since its inception. Modifications to this procedure have occurred as changes to approval thresholds have been made in the governing DOE Orders (O 413.3). A Change Control Board (CCB) provides disposition of requested changes to the cost, schedule, or scope baselines within the approval thresholds.

The responsibilities of the CCB include: reviewing and providing disposition of requested changes to project baselines, and assuring that overall requirements in the area of environment, safety, health, quality assurance, and security are met for requested changes. Traceability of actions and decisions is provided by utilization of the CCB Change Disposition Record, which documents decisions and reviewers' comments.

Earned value reporting is utilized to track project performance. A monthly Cost Performance Report is issued to address current month and cumulative cost and schedule variances. Monthly Project Review meetings are conducted to discuss issues, trends, and corrective actions for unfavorable variances. Short interval activity schedules are utilized for the execution of the baseline to enhance daily work planning and performance measurement. The Latest Revised Estimate (LRE) for current year costs and comments is utilized to optimize use of available funds. A monthly funding/Estimate to Complete (ETC) analysis will be performed to optimize utilization of funds. Each additional available dollar will be spent to improve the critical path schedule.

Contracting Strategy

The DOE Ohio Field Office contracts administration group is executing the BCLDP contract administration and specific legal functions. In 1988, Battelle agreed to participate in a cost-sharing arrangement for the project. DOE concluded that it is in the best interest of the Government to have Battelle self perform the cleanup of the site. This is based on the nature of the action under Contract No. W-7405-ENG-92, the cost-sharing arrangement with Battelle, the agreement on no fee for Battelle services, the logistics of the physical situation (i.e., facility owned, operated and licensed by Battelle), the complicated nature of the joint liability of Battelle and the Government, and agreement with Battelle to maximize use of subcontractors as appropriate. Cost savings incentives will be added to the contract for completing the project by 2006 under the target cost.

Battelle utilizes a number of commercial contractors to perform work more efficiently. The most significant subcontractor is Bartlett Nuclear Services, Inc., which provides most of the hourly labor needed to conduct D&D work. Battelle uses a number of commercial contractors to perform tasks that require specific expertise that does not exist in BCLDP. An example is the contract for sawing and size reduction of the reactor bioshield, which was bid as a fixed-price

effort. A subcontract plan is being developed for demolition of the 3 major buildings (JN-1, JN-2, and JN-3) through competitively bid subcontracts. The project also has agreements with various DOE offices for use of low-level waste disposal contracts.

Government-Furnished Services and Information

No.	Government Furnished Service/Information	Responsible Party	Due Date(s)
1	Treatment and disposal of low-level radioactive mixed waste, and disposal of low-level waste.	Envirocare of Utah	FY 2002-2006
2	Identify an interim storage site for transuranic waste, and disposal of low-level waste not meeting the acceptance criteria for Envirocare.	DOE-HQ	7/2002
3	Mixed-waste treatment/disposal	DOE-CH	FY 2002-2006
4	Shipping cask additional certification	DOE-OAK	By FY 2003
5	Independent Verification Contractor for completion of the site D&D work.	Oak Ridge Institute of Science and Engineering	FY 2003-2006
6	TRU waste storage vaults	DOE-ORO	FY2002
7	Inter-site transportation support	WIPP	FY2002/3