

Final

Volume 1: Summary

**Battelle Columbus Laboratories
Decommissioning Project**

Baseline, Revision 3

June 28, 2002

Volume 1—Summary

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BCLDP Baseline, Revision 3

Introduction

Mission Statement

The objective of the Battelle Columbus Laboratories Decommissioning Project (BCLDP) is to safely decontaminate and demolish the involved Battelle facilities, as well as remediate the associated grounds, to a condition that is suitable for use without radiological restrictions and to dispose of the associated radioactive waste, when generated, at a DOE-approved facility. In meeting this overall mission, the BCLDP will be conducted in such a manner as to (1) minimize adverse environmental, safety, and health impacts; (2) minimize costs; (3) achieve closure by the end of 2006, or sooner; (4) maximize project flexibility with respect to major programmatic changes; and (5) minimize disruptions to Battelle's ongoing business.

Final BCLDP Baseline, Revision 3

The objective of this Final BCLDP Baseline is to document a path forward to complete the BCLDP mission at the West Jefferson facilities. The effort to develop the details in this submittal began on December 28, 1999, when the DOE provided the first guidance letter (Section G). For the first draft (September 29, 2000) systems engineers and outside consultants experienced with baseline development for the DOE were employed to assist BCLDP staff in developing a systematic approach to defining activities required to decommission West Jefferson Buildings JN-1, JN-2, and JN-3 and the related external grounds (Section I). The same systems engineering approach was used for developing the Draft-Final BCLDP Baseline (July 31, 2001) and this Final BCLDP Baseline. The draft-final baseline incorporated comments and suggestions resulting from three in-depth reviews of the draft baseline: a Baseline Review conducted by the DOE Office of Environmental Management, Office of Project Management (EM-6), an Internal Battelle Corporate Review, and an Independent Challenge Team Review. The draft-final baseline was reviewed by the DOE Headquarters Independent Cost Estimate (ICE) Review team, and this final baseline results from incorporating the ICE team and the DOE Columbus Environmental Management Project (CEMP) review comments, which were received in February 2002. Throughout this process key assumptions were developed and refined (Section E) to establish parameters for pricing and scheduling purposes, and program regulatory and other requirements were identified (Section H).

For development of this final baseline, a joint BCLDP and CEMP team approach was used, with augmentation from other Battelle and outside contractor technical experts, to identify the best path forward to completing the project given the known constraints and available technology. Regular briefings on progress and critical strategies were discussed with the BCLDP and CEMP project managers. Input, output, and resource requirements were identified at each step, and the interrelationships among the activities and the flow

of outputs to inputs were documented. Finally, the estimates were priced and the schedule was balanced to establish the best fit within the DOE's anticipated funding constraints in Fiscal Year (FY) 2003 through FY 2006.

The result of this effort is documented in the following six volumes and summarized in this volume. The estimated total cost of this project from October 1, 2002, through completion totals \$86,711,807. All dollars are FY 2003 dollars without escalation. In accordance with the no-fee, cost-sharing agreement contained in the project contract, Battelle's cost share is estimated at \$8,480,121 and the DOE's cost share is \$78,231,686 (exclusive of contingency, which is an unbudgeted cost element and is addressed in Section L).

The critical path (Section N) for the project begins with completing the shipment of TRU waste for interim storage at the DOE's Hanford site, near Richland, Washington, early in FY 2003. This is essential to starting the decontamination of the remaining areas of Building JN-1 that are affected by the storage and management of the TRU waste within the facility. Because the Waste Isolation Pilot Plant (WIPP) is unable to receive remote-handled TRU waste in sufficient time, interim storage at a designated DOE site is absolutely essential to achieving BCLDP closure by the end 2006. **This remains the highest risk to the project.**

In addition to removal of TRU waste, significant risks exist in the unknown amount and degree of contamination that may be found on the site, primarily in Building JN-1 and in the External Areas soils. In addition, the incursion of groundwater during demolition of the underground structures poses a high risk. These are addressed in Section M of this volume.

Battelle continues to investigate alternative approaches throughout the project, through the application of new technologies and use of value engineering studies, to ensure the most effective and economical approaches are used to safely achieve the project mission described above.

BCLDP History

The Battelle Columbus Laboratories Decommissioning Project (BCLDP) is removing radioactive contamination from Battelle-owned facilities and grounds located in the Columbus, Ohio, area. In these Battelle facilities, nuclear research and development work was performed under federal government and some commercial contracts from the mid-1940s through the mid-1980s.

During the nuclear work, varying amounts of radioactive material became embedded in walls, ceilings, laboratory equipment, drains, sumps, and soils. Routine cleanup was performed after each research and development project. Complete decontamination was postponed until it was certain these facilities were no longer needed for nuclear research.

The objective of the project, which began in 1989, is to clean up the facilities and grounds and return them to Battelle for use without radiological restrictions. The costs are being shared by the U.S. Department of Energy (DOE) (90 percent) and Battelle (10 percent) because most of the nuclear research work that resulted in the contamination was conducted for the federal government. Battelle must adhere to requirements in the Decommissioning Plan approved by the U.S. Nuclear Regulatory Commission.



Early nuclear reactor at West Jefferson (circa 1960)

Two very different sites are involved. One is Battelle's main campus on King Avenue, in an urban neighborhood approximately two miles north of downtown Columbus, which has a metropolitan area population of 1.2 million people. The other is Battelle's research park located 16 miles west of Columbus, in a rural area near the village of West Jefferson (pop. 4,500).

Most of the D&D activities at King Avenue are complete, including removing contaminants from equipment, floor and wall surfaces, drain lines, and subfloor soil at the following buildings:



Building 9 Mechanical Engineering
Building 7 Chemistry
Building 6 Chemistry
Building 5 Machine Shop
Building 1 Foundry
Building 2 Metal Working
Building A Corporate Offices
Building 4 Radiochemistry
Building 3 Materials

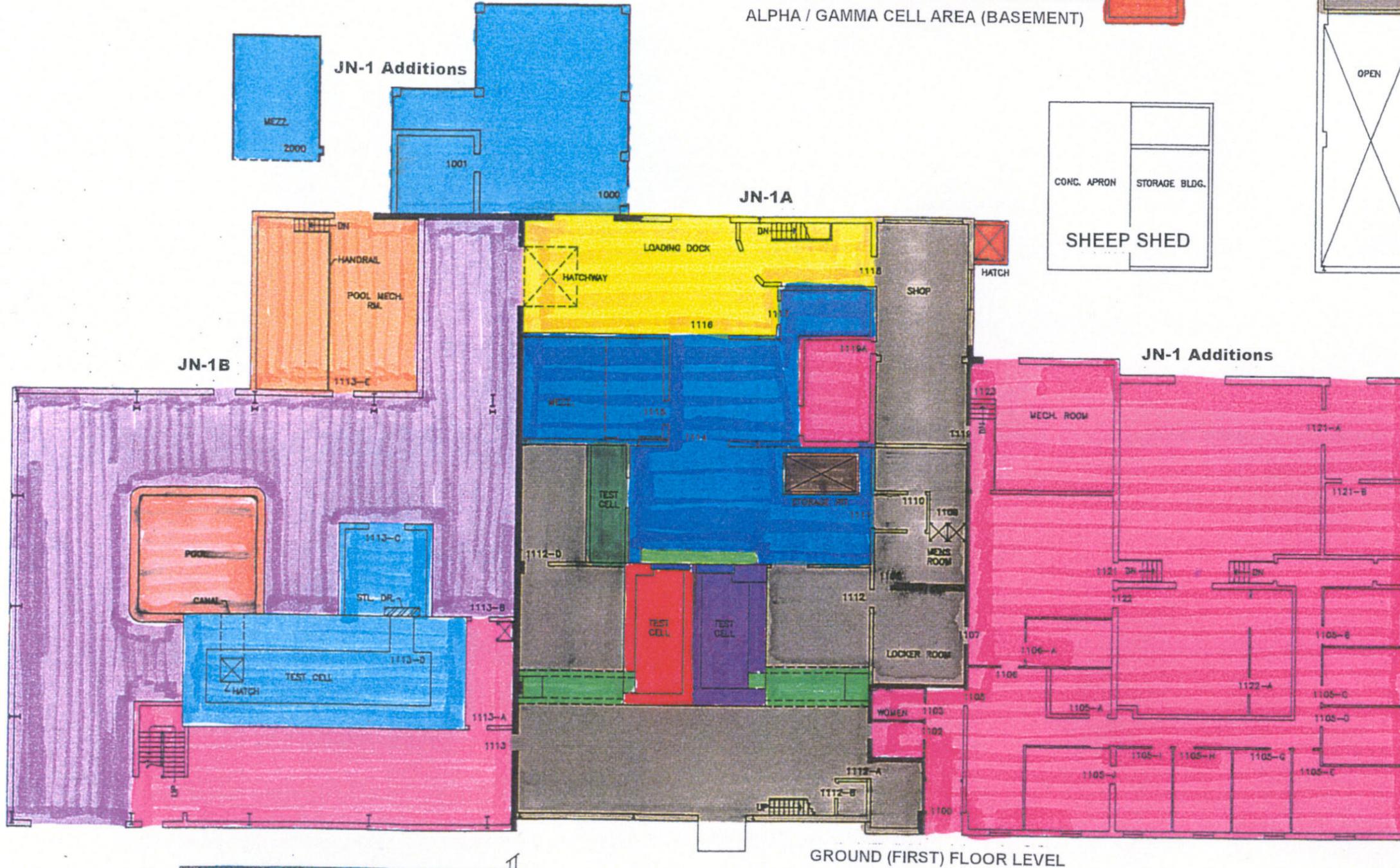
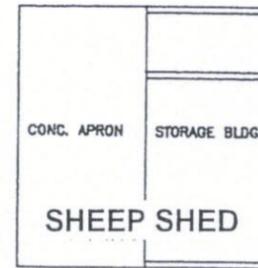
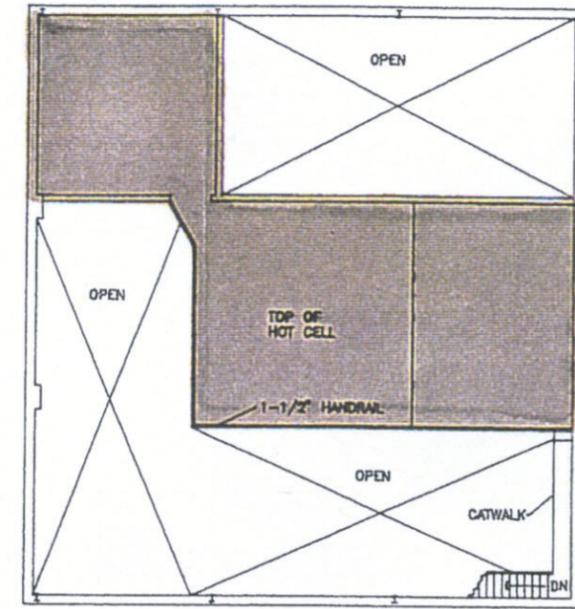
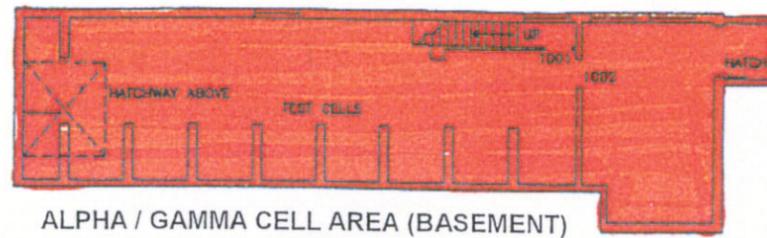
- Bldg 1 Foundry
- Bldg 2 Metal Working
- Bldg 3 Materials
- Bldg 4 Metallurgical Laboratory
- Bldg 5 Machine Shop
- Bldg 6 Chemistry
- Bldg 7 Chemistry
- Bldg A Corporate Offices
- Bldg 9 Mechanical Engineering.

King Avenue site

Three buildings at the West Jefferson South site with low levels of contamination were decontaminated in 1990. D&D continues at West Jefferson North, the former Nuclear Sciences Area, on three buildings and surrounding grounds, including filter beds and underground drain lines. In JN-1, which contains retired nuclear hot cells, contaminated materials were removed, contaminated equipment was cleaned, the fuel storage pool was cleaned, and the pool water was purified and evaporated. The biological shield and pool in the nuclear research reactor building (JN-3) are being decontaminated and prepared for disposal. This building was partially decommissioned prior to the BCLDP. JN-2, which formerly housed the critical assembly and radiochemistry laboratories now supports the cleanup of JN-1 and JN-3.



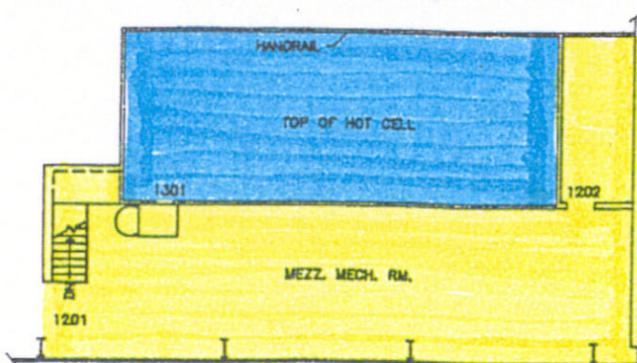
West Jefferson North, former Nuclear Sciences area

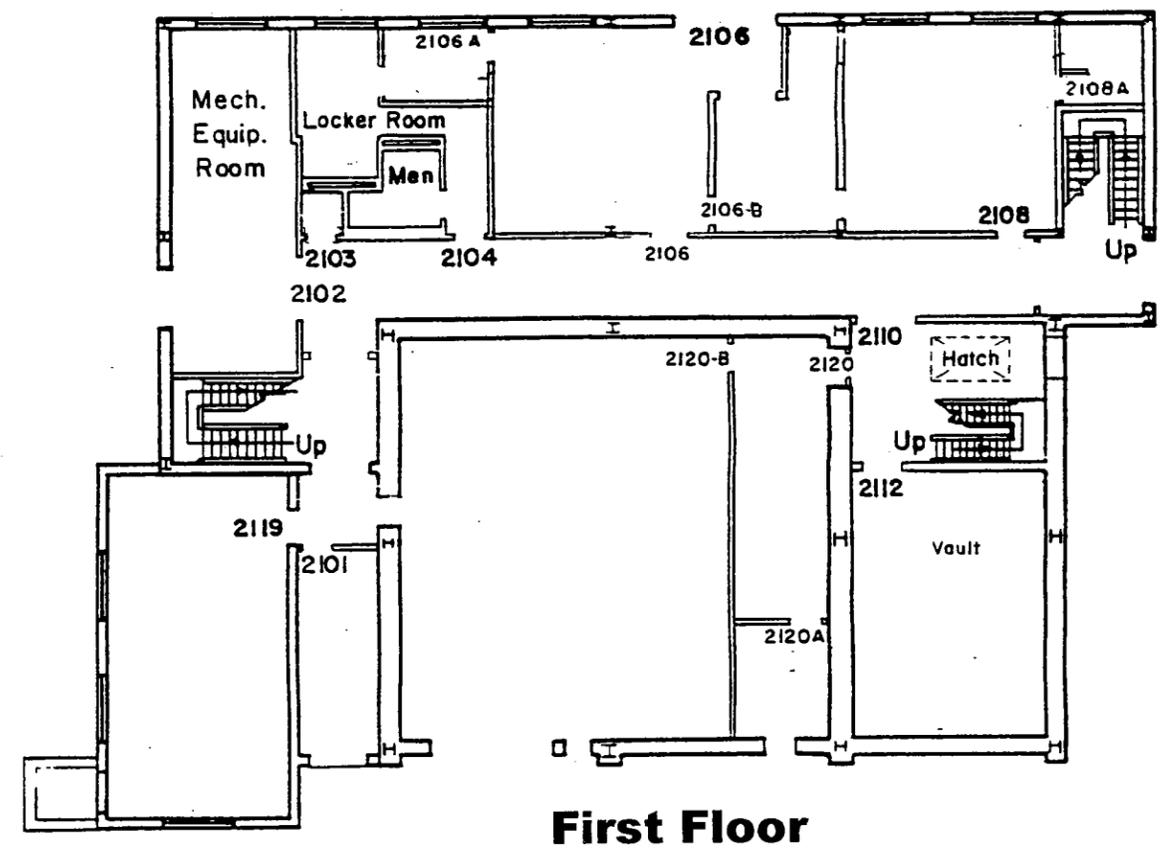
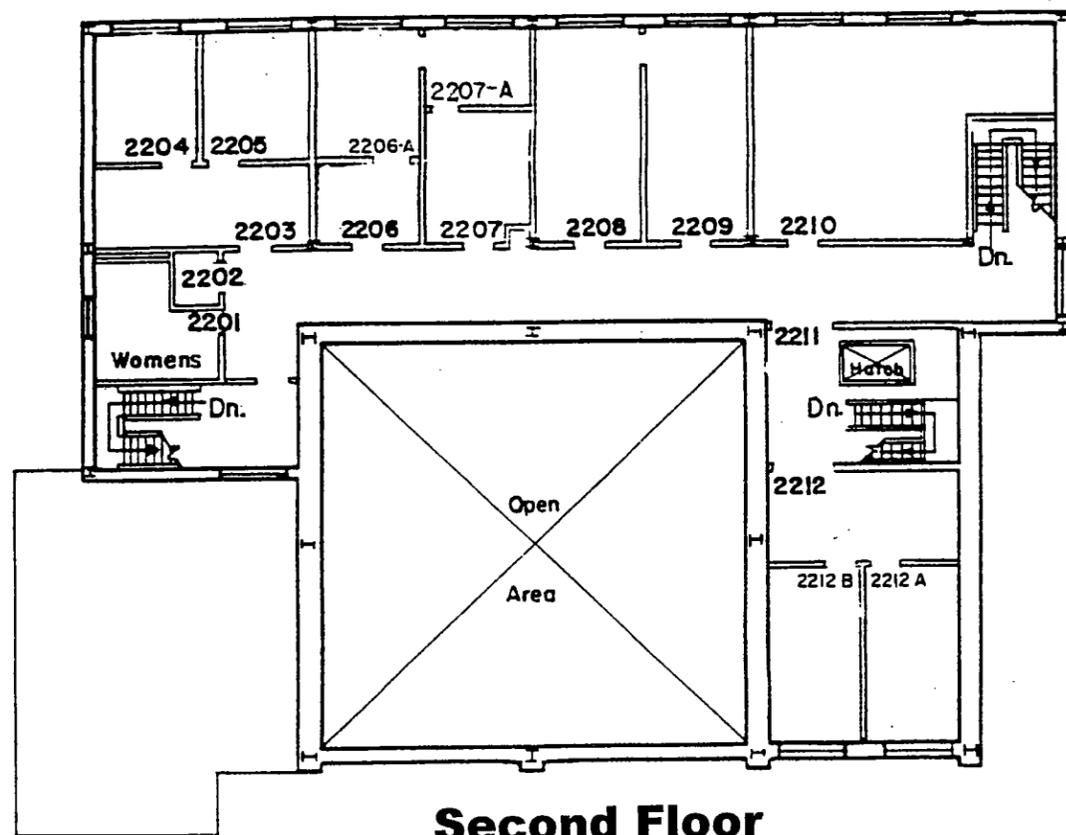


JN-1 Area Designations

- JN-1A**
- Alpha / Gamma Area
- Cask Sabotage Unit
- Cell Doors
- Charpy Room
- Controlled Access Area / Evaporator Room
- High Level Cell
- Hydraulic Room
- Loading Dock
- Low Level Cell
- Mechanical Test Cell
- Old Operations Area
- Subcells
- JN-1B**
- Fan Room
- HEC Operations Area
- High Bay Area
- High Energy Cell
- Pool
- Pump Room
- JN-1 Additions**
- Offices / Machine Shop Area
- Waste Storage Shed

Building JN-1



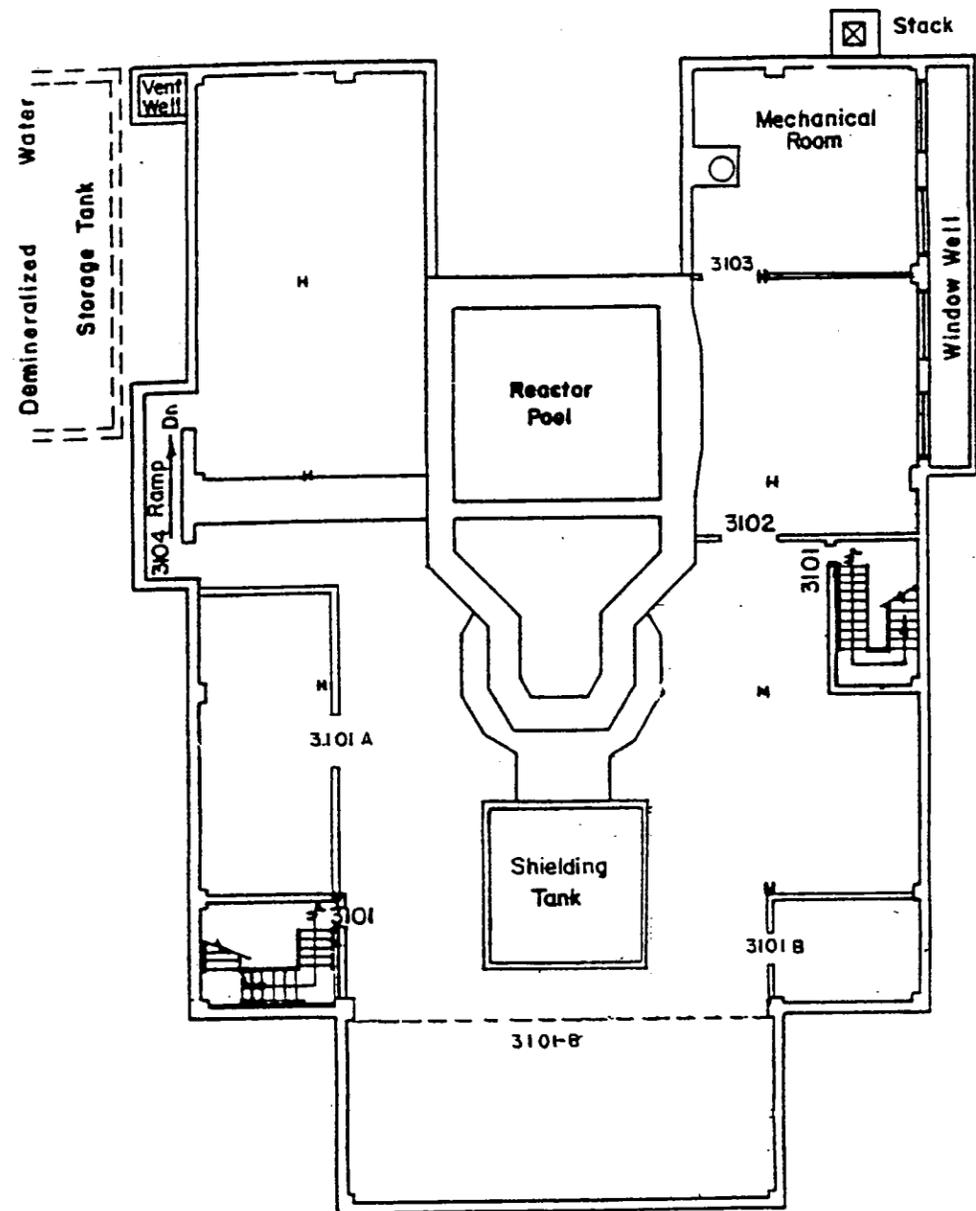


Building JN-2

Oil Sump

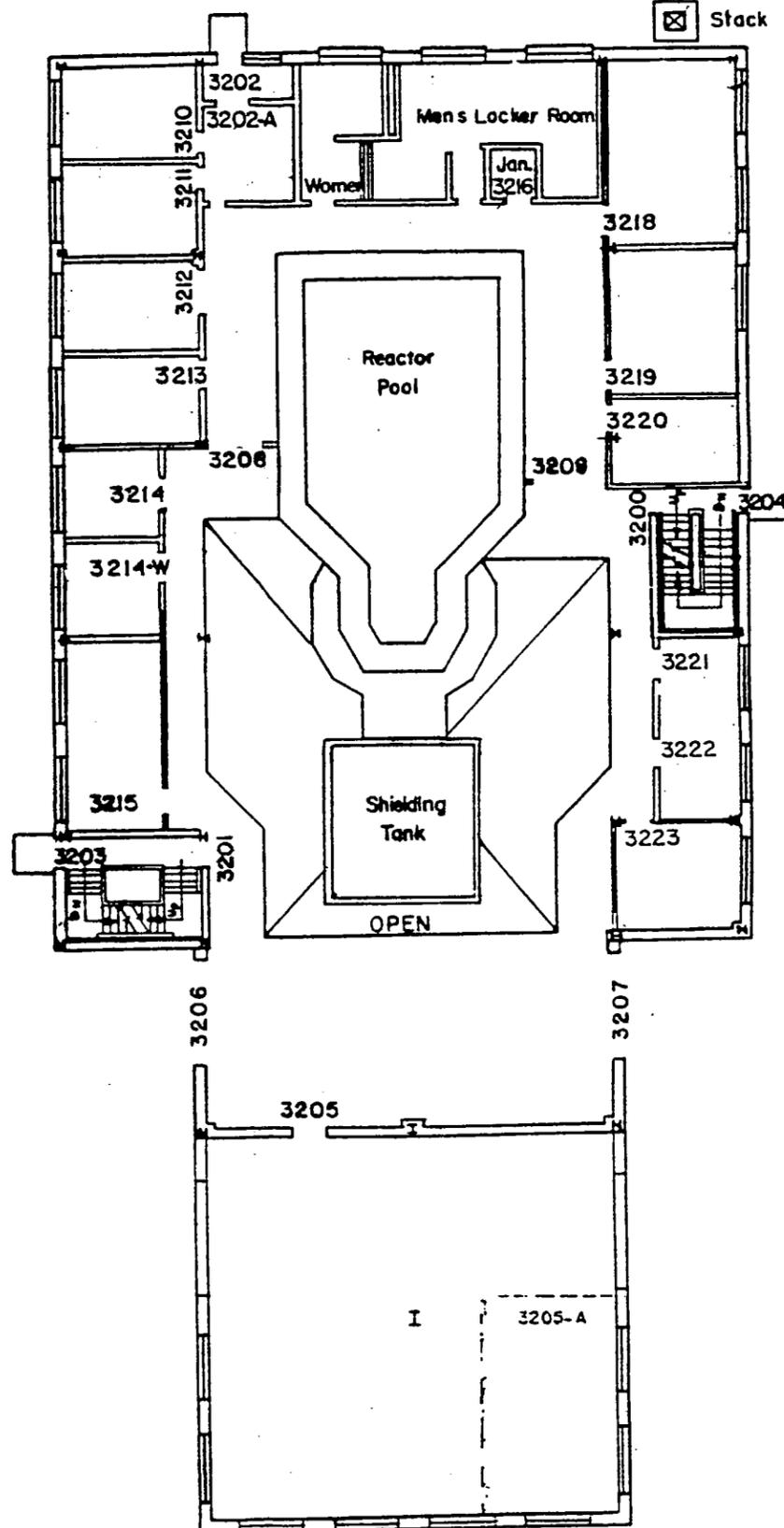


Stack

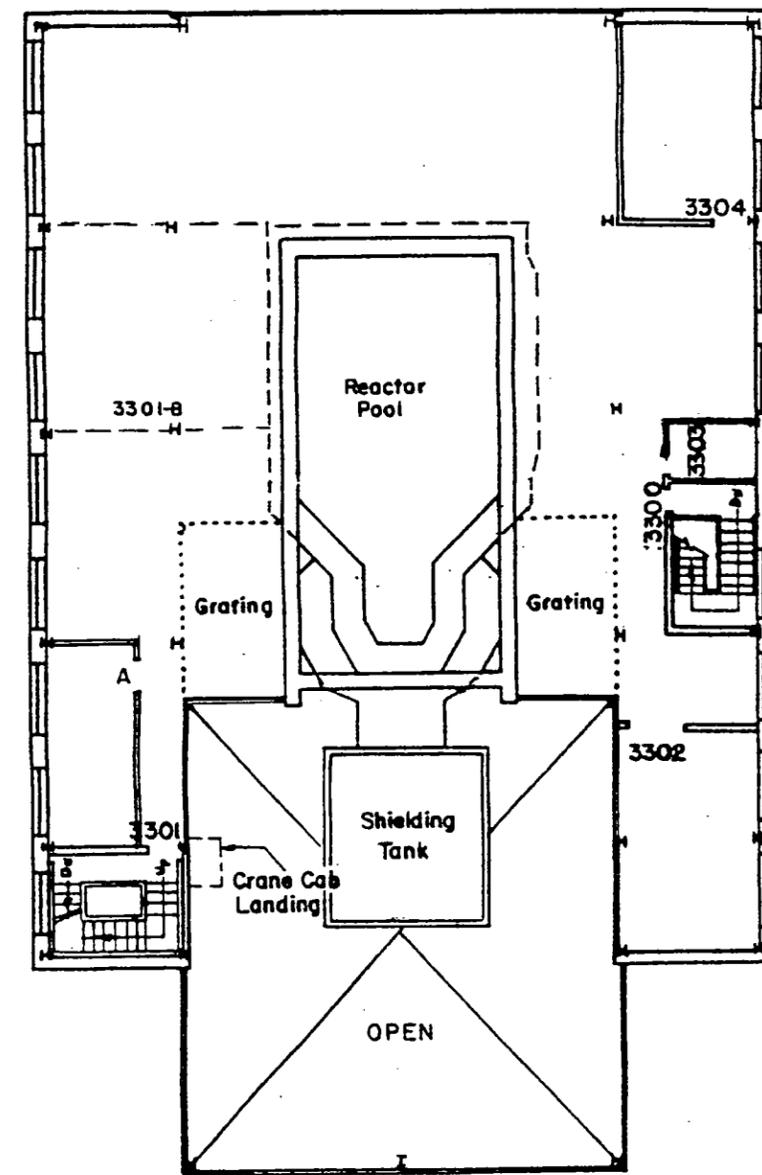


Basement

Stack



First Floor



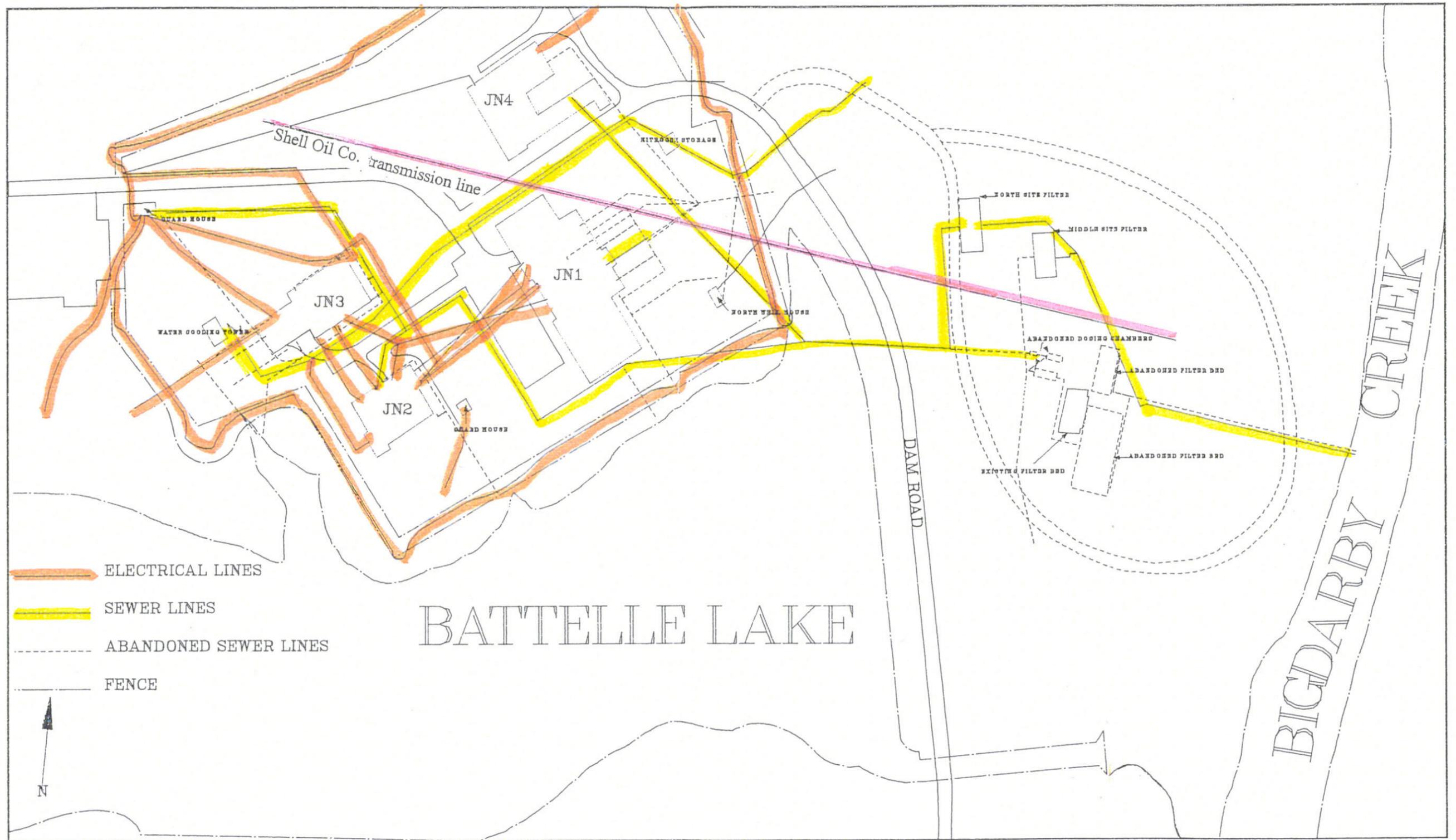
Second Floor

Building JN-3



- External Area Designations**
- D&D External Grounds within Affected Area**
- see filter map Abandoned Drain Discharge Pipe
 - see filter map Abandoned North Filter Beds
 - see filter map Old Middle Filter Bed
 - see filter map Active Middle Treatment System
 - see filter map Active North Filter Bed
 - JN-1 Back Apron
 - JN-1 Back Controlled Area
 - JN-1 Front of Building
 - JN-1 Diesel Fuel Storage Tank
 - JN-1 Dilution Sump
 - JN-1 Lake Outfall Line
 - JN-2 Underground Tank and Sump
 - JN-2 Diesel Tank
 - JN-3 Cooling Tower Area
 - JN-3 Reactor Coolant Pump Tank
 - JN-3 Sanitary Sump
 - see own map Storm and Sanitary Sewer Lines
 - Road
 - Remaining 11.47 Acres inside Fence
 - JN-1 Lake Outfall
 - JN-1 Front Apron
 - JN-10 Grounds
 - not on map

- External Area Designations**
- Remove Inventoried Material**
- JN-1 Diesel Tank
 - JN-1 Emergency Generator
 - Break Trailer
 - JN-2 Electric Substation
 - JN-2 Emergency Generator
 - not acquired yet
 - New Access Control Point Trailer
 - Sea/Lands
 - Temporary Transformer
 - Breathing Air System
 - JN-2 Transformer
 - JN-1 Boneyard
 - HICs
- Remove Waste Material**
- JN-1 Sheep Shed
 - Storage Trailer
 - Dosimetry Trailer
- D&D Facilities within Affected Area**
- North Well House
 - JN-6 Guardhouse & Emergency Generator
 - Old Guardhouse

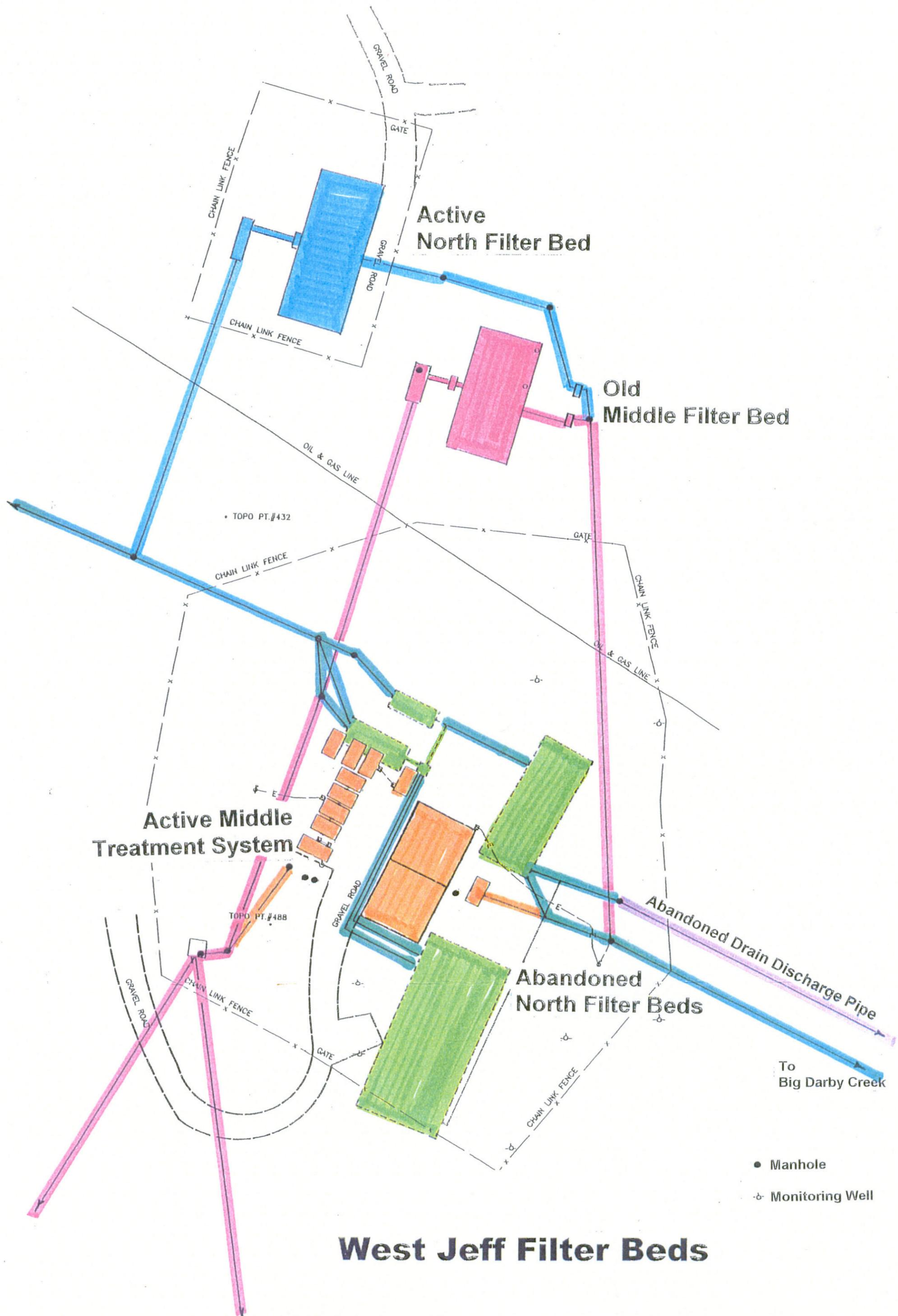


-  ELECTRICAL LINES
-  SEWER LINES
-  ABANDONED SEWER LINES
-  FENCE



BATTELLE LAKE

BIGDARBY CREEK



Active North Filter Bed

Old Middle Filter Bed

Active Middle Treatment System

Abandoned North Filter Beds

West Jeff Filter Beds

- Manhole
- ⊖ Monitoring Well

BCLDP Baseline, Revision 3

Project Photographs (CD Rom)

At the beginning of the process to define the baseline, resident experts performed a thorough walk-through of Buildings JN-1, JN-2, and JN-3 and the External Areas to photograph the areas in their pre-decommissioning state. The enclosed CD Rom contains the photographs along with a Microsoft Access database. The database lists description of various site locations that were photographed, and has links to the appropriate photograph. To view photographs, open the database, locate the building/area of interest, and “click” on the description column. The photograph will then be opened for viewing.

BCLDP Baseline, Revision 3

Assumptions

Per the DOE/CEMP Guidance letter from Mr. Tom Baillieul to Mr. N. Joseph Gantos, dated February 29, 2000, "The DOE envisions an end state closer to a 'greenfield' concept, but one where very low levels of contamination may remain. In keeping with project activities to date, the West Jefferson site will be remediated to levels of residual contamination allowing future use without radiological restrictions. These levels are defined in project technical basis documents and procedures, and have been approved by both the DOE and U.S. NRC."

For purposes of preparing the Baseline, Battelle assumes these levels are reached by the following:

- All underground drains, pipes, and utilities (conduit) below building JN-1 will be removed by trenching before the floors and soil are removed to avoid contamination of the soil.
- Assume 20% of the underground drains, pipes, and utilities (conduit) below building JN-2 will be removed by trenching before demolition and 80% will be removed after demolition.
- All underground drains, pipes, and utilities (conduit) below building JN-3 will be removed by trenching before demolition.
- JN-1: Assume removal of all floors, footers, grade beams, columns, and 2 feet of soil below 10% of the floor area, except in the pool area. In the pool area, the walls will be knocked down to a depth of 14 feet, caved into the pool, and then the pool will be filled with clean backfill to bring pool excavation up to grade.
- JN-2: Assume removal of floor and grade beams. Assume 5% of the area below the floor needs 2 feet of soil removed. Assume Battelle will dig 6 feet down the columns then snap them off.
- JN-3: Assume removal of floor, footers, grade beams, and columns (if any). Assume 5% of the area below the floor needs 2 feet of soil removed.
- External grounds:

Assume removal of JN-2 RAL waste tank and sump, as well as 500 cubic feet of soil. Assume removal of JN-1 dilution sump and 312 cubic feet of soil.

The scope of the BCLDP includes the decontamination and decommissioning (D&D) of utilities, as necessary, to remove radioactive contamination at or above release

limits and remove all utilities associated with Buildings JN-1, JN-2, and JN-3. The Pipe Explorer™, where possible, or alternate technique(s) will be used to identify which underground drainpipes must be removed as contaminated waste and which may be removed without radiological controls. Service lines (e.g., water, gas, electricity, phone/data lines), by definition, carry no internal contamination and are expected to be removable without radiological controls.

Assume utilities will be emptied, capped, made safe and left in place until removal at final site clearance effort.

Assume removal of the aprons and pads, and 2 feet of soil below the aprons. Assume removal of 10% of Front Apron. Assume 50% of the Back Apron.

Assume installation of a new road for JN-4 prior to removal of old road.

Assume installation of alternative utility connections to service non-BCLDP WJ North Facilities.

Assume the parking lot outside the fence and the parking lot lights remain for use by Battelle.

Assume removal of all structures specifically installed for use with JN-10.

- Abandoned Filter Beds Middle Area Waste Water Treatment: Assume a contaminated cube of soil beneath southeast corner of the active middle filter bed exists. Its size is estimated to be 2m x 2m x 2m into the bed. This equates to 282 cubic feet of contaminated soil to be remediated.
- Grounds: Assume 0.25% of the general area inside the fence will be removed down to a depth of 2 feet (~2500 cu. ft.). Assume removal of all walkways and drives.
- Other Miscellaneous Facilities:

Assume removal of the entire structure and foundation. (Note the soil below these structures is covered under Assumptions for Grounds.) Assume relocation and replacement of critical utility feeds.

Assume survey and release in place for the following until final site clearance effort:

Old Guard House
JNT-2
JN-6
North Well House

Assume survey and remove for the following:

JNT-1 (Dosimetry Trailer)
JNT-3 (Storage Trailer)
Sheep Shed
Diesel Tank
Generator (JN-1 and JN-2)
JN-2 Electric Substation
New Access Control Point Trailer
RAL Trailer

- Disposal of TRU Waste: Assume BCLDP will not have approval to ship TRU waste to WIPP by the time the JN-1 high bay is ready for D&D. Assume no further active management of TRU waste will be required (i.e. no repackaging will occur). Assume video log will provide sufficient information to WIPP such that TRU waste packages will not need to be reopened. Assume that the Hanford Site will begin receiving BCLDP TRU in FY-02 and that onsite storage will NOT be needed. Assume that the BCLDP will pay for all shipping costs and receipt costs.

BCLDP Baseline, Revision 3

Guiding Principles

The BCLDP baseline was developed to ensure an optimal decontamination and decommissioning (D&D) program at the West Jefferson Site. The decisions made by the participants were guided by a set of principles or objectives that were carefully considered and selected as the first step in the baseline development process. These principles were:

- Maximize Safety
- Minimize Risk
- Minimize Source Term
- Minimize Waste
- Minimize Need for New Facilities
- Minimize Cost
- Minimize Schedule
- Free Release the Site

The choice of scope, technical strategy, human resource levels and expertise, and the sequence of the activities/functions were examined repeatedly against these principles in the baseline development process. Assessing the trade-offs among the choices, iterative modifications were made to the baseline to achieve an optimized balance among the eight principles.



U.S. Department of Energy

Columbus Environmental Management Project
555 Metro Place North, Suite 415
Dublin, Ohio 43017

DEC 28 1999

December 28, 1999

Mr. N. Joseph Gantos, Manager
Decontamination and Decommissioning Operations
Battelle Memorial Institute
505 King Avenue
Columbus, OH 43201-2693

Dear Mr. Gantos:

**SUBJECT: BATTELLE COLUMBUS LABORATORIES DECOMMISSIONING
PROJECT (BCLDP) BASELINE, REVISION 3**

The current project baseline, approved in 1994, and amended through numerous change actions, is outdated. The technical approach to completing the project effort has evolved with the application of new technology, a revised end state for the West Jefferson site, and a better understanding of waste volumes and characteristics. A complete revision of the project baseline is required as part of the Current Year Work Plan.

The goal of the project continues to be the decontamination and decommissioning of Battelle facilities to levels allowing reuse without radiological restrictions. The revised baseline will set forth the technical approach and the schedule for project completion which results in the least cost to the government. Consideration should be given to demolition of buildings where this can simplify decontamination, reduce long term liabilities, and minimize life-cycle costs (restoration costs included). An opportunity and contingency analysis following the attached guideline is required to understand potential cost savings and avoidances, as well as areas of significant uncertainty and risk. Contract discussions are on going regarding possible additional scope at the King Avenue site (e.g., carbon-14 contamination, disposition of historical documents). Prior to a contractual agreement, any further King Avenue work should be addressed as part of the opportunity and contingency analysis.

The baseline revision should be developed consistent with the currently approved funding profile (government funds):

FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
\$15,973K	\$16,134K	\$16,570K	\$17,017K	\$19,000K	\$15,000K

The revised baseline will be subject to a validation by an independent team. Therefore, the technical approach, basis of estimate and all assumptions will need to be fully documented and readily available to support the validation review.

The following top level assumptions should be used in preparing the revised baseline:

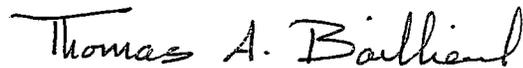
- Project-generated Transuranic (TRU) waste will be shipped offsite as characterization and packaging proceed, utilizing one or more of the following options:
 - Interim storage at either Oak Ridge, Hanford, or a commercial facility;
 - Disposal at WIPP using shielded overpacks

The cost estimate for storage will be based on the requirements of the receiving site (one option can be selected as the bounding case for estimating purposes).

- Mixed Transuranic waste will be shipped for either temporary storage or WIPP disposal without any specialized waste treatment.
- The project will pursue the most cost-effective approach to the use of subcontracted labor and services, including fixed-price subcontracts wherever feasible for discrete elements of the clean-up effort.
- 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. Payment for treatment and disposal services provided through the DOE will come from project funds.
- The 1990 Environmental Assessment and Finding of No Significant Impact 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 BCLDP Technical Basis Documents for surface and volumetric release.
- An Independent Verification Contractor (IVC) will evaluate the effectiveness of the remediation effort, using a technical approach which is consistent with the project's release criteria and procedures. The NRC will continue to accept the results of DOE's independent verification surveys. The IVC will continue to be a project cost.
- The estimates for building restoration at King Avenue and West Jefferson should continue to use the values developed for Revision 2 of the baseline. Once contract discussions related to restoration are complete, these estimates will be revised.

Questions regarding this guidance should be addressed to me (760-7371) or to Dennis Lin of my staff (760-7374).

Sincerely,



Thomas A. Baillieul, Director
Columbus Environmental Management Project

TAB/psr/C99-071

ENCL:

1. DOE Order 4700.1, Section II 5, Contingency

cc:

D. Lin, DOE/CEMP
S. Davis, DOE/CEMP
K. Hall, DOE/CEMP
B. Kain, DOE/OH-AAM
P. Greenwalt, DOE/OH-CFO
C. Theibert, Battelle
T. Thorpe, CEMP/Jason
J. Griffin, CEMP/TRW

3-6-87

- (6) Current Working Estimates. The basis for these cost estimates shall carefully define the purpose and scope of the estimate along with a complete list of all the considerations used to develop the estimate for actual costs to date and for data used to complete the projections.

5. CONTINGENCY.

- a. Contingency is defined as the sum of funds included within an estimate to cover materials, labor, conditions and risk situations which are an intrinsic part of the presently intended scope of work, but are not specifically allowed for elsewhere in the estimate, due to uncertainty either as to their existence, nature, likelihood of occurrence, or magnitude of effect. Such items and situations are likely to occur in the course of every project, but in uncertain combinations and magnitudes. Guidance on contingency is issued by the Headquarters Independent Cost Estimating staff.
- b. Several important concepts inherent in this definition should be emphasized:
- (1) Contingency funds are included within the project's total estimated cost and shall be considered part of that cost and not "extra."
 - (2) There is a statistical probability that such funds will be spent to complete the work, and methods of determining the magnitude of contingency shall consider such probability.
 - (3) Contingency is meant to cover only the scope of work as it is presently conceived and is not intended to provide for additions to scope or to require reduction of scope.
- c. Contingency is derived from a risk analysis of various aspects of the project. This analysis concerns cost, schedule, and technical risks as they apply to the project effort, underscoring the uncertainties that exist in each of the project elements. The amount of contingency is then reflected both as a total and on an individual element basis at whatever level is essential to produce an understandable cost estimate.
- d. A contingency analysis shall be performed on all project cost estimates. In most cases, a short, documented statement accompanying the estimate is appropriate. The statement should simply indicate what rationale or thought process the estimator used to reach the conclusions. On simple or preconceptual design projects, an overall bottom line percentage will suffice. For more complex, better detailed, or more expensive projects, individual cost elements or work breakdown structure elements should be evaluated and documented individually.

- e. The estimate types below are an indication of how well the estimator will be able to understand the scope of equipment, materials, and labor that make up the project being estimated.
- (1) Planning Estimate. Planning estimates are developed soon after potential projects are identified and described, and they record and describe quantitatively the scope of the project and the assumptions made for the estimate. These assumptions often force improvements in the project scope definition and provide a basis for assessing the magnitude of contingency.
 - (2) Budget or Conceptual Estimates. These estimates are based on conceptual designs which define major physical characteristics and focus on elements of the project that have significant impacts on cost. Such an estimate shall include all items of the project that the conceptual design implies, whether detailed in the conceptual design report or not, and shall be reviewed in detail by the designer for scope of work included.
 - (3) Title I Design Estimate. Title I design is performed in order to fix or freeze the project scope, to investigate alternative design directions within the overall project scope, and to establish project design criteria for final construction design. The resulting design information defines the project structures and equipment, and outlines their basic specifications.
 - (4) Title II Design Estimate. Title II design produces the detailed drawings and specifications by which procurement and construction are accomplished. As such, it provides the basis for a detailed estimate of the cost of the project.
- f. To ensure that contingency is properly managed during execution of the project, the project manager shall develop a contingency plan, which shall be an integral part of the project management plan.



U.S. Department of Energy

**Columbus Environmental Management Project
555 Metro Place North, Suite 415
Dublin, Ohio 43017**

Received 2/3/2000

January 28, 2000

Mr. N. Joseph Gantos, Manager
Decontamination and Decommissioning Operations
Battelle Memorial Institute
505 King Avenue
Columbus, OH 43201-2693

Dear Mr. Gantos:

SUBJECT: SUPPLEMENTAL BASELINE GUIDANCE

REFERENCE: 1. Letter, dated May 16, 1997, from L. Ermold to T. Baillieul

An essential element of the current effort to update the Project Baseline is the definition of the end state for the West Jefferson site. Ongoing discussions between the Department of Energy and Battelle over building value and restoration are expected to resolve the issue but may not be completed in a timely fashion. Battelle has stated that it foresees no future use for the West Jefferson buildings in their current configuration (Ref. 1). Also, based on experience at King Avenue, attempting to save a highly contaminated building and still meet established release criteria can double the initial cost estimate. Demolition also reduces uncertainty in meeting release criteria; creates flexibility in planning/sequencing activities; and reduces risk. Given these factors, you should assume a demolition end-state for the West Jefferson buildings.

Once contract discussions are complete, revisions to the Baseline will be made, where necessary. Completion of the Baseline using this assumed end state will also provide much of the information required to determine if it is more cost effective to leave any of the buildings in place.

Sincerely,

A handwritten signature in cursive script that reads "Thomas A. Baillieul".

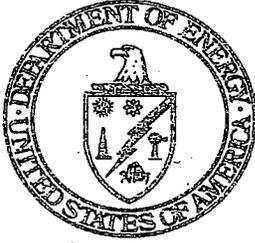
Thomas A. Baillieul, Director
Columbus Environmental Management Project

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cc:

B. Kain, DOE/OH-AAM
R. Holland, OH-OCC
R. Folker, OH-DM
K. Hall, DOE/CEMP

D. Lin, DOE/CEMP
S. Davis, DOE/CEMP
J. Griffin, CEMP/TRW
T. Thorpe, CEMP/Jason



U.S. Department of Energy

RECEIVED MAR 02 2000

Columbus Environmental Management Project
555 Metro Place North, Suite 415
Dublin, Ohio 43017

February 29, 2000

Mr. N. Joseph Gantos, Manager
Decontamination and Decommissioning Operations
Battelle Memorial Institute
505 King Avenue
Columbus, OH 43201-2693

Dear Mr. Gantos:

SUBJECT: END STATE DEFINITION FOR BASELINE PLANNING

The process to revise the project baseline continues to raise appropriate questions concerning the end state of the West Jefferson site. Some confusion exists over the terms "greenfield" and "brownfield", and how these may be applied to the remediation effort.

A **greenfield** state, as defined by U.S. EPA, is the condition of a site before any development has occurred (i.e. pristine environmental condition).

"**Brownfields**" are abandoned, idled, or under-used industrial and commercial facilities where expansion, redevelopment, or reuse is complicated by real or perceived environmental contamination. A brownfield site is one which can be reused for industrial purposes only with specific restrictions.

The DOE envisions an end state closer to a "greenfield" concept, but one where very low levels of contaminants may remain. In keeping with project activities to date, the West Jefferson site will be remediated to levels of residual contamination allowing future use without radiological restrictions. These levels are defined in project technical basis documents and procedures, and have been approved by both the DOE and U.S. NRC. Current project release criteria are derived from regulatory standards and risk-based analyses, and are completely protective of public health and safety.

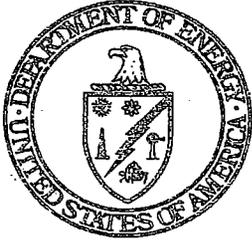
Sincerely,

A handwritten signature in cursive script that reads "Thomas A. Baillieul".

Thomas A. Baillieul, Director
Columbus Environmental Management Project

TAB/psr/C00-0010

cc:
K. Hall, DOE/CEMP D. Lin, DOE/CEMP
S. Davis, DOE/CEMP J. Griffin, CEMP/TRW
T. Thorpe, CEMP/Jason



U.S. Department of Energy

RECEIVED MAR 9 2000

Columbus Environmental Management Project
555 Metro Place North, Suite 415
Dublin, Ohio 43017

March 29, 2000

Mr. N. Joseph Gantos, Manager
Decontamination & Decommissioning Operations
Battelle Memorial Institute
505 King Avenue
Columbus, Ohio 43201-2693

Dear Mr. Gantos:

SUBJECT: CURRENT STATE DEFINITION FOR BASELINE PLANNING

The purpose of this correspondence is to require that the radiological Scoping Survey process be formally included in the approach used for development of the project baseline (revision 3), now underway. The benefits of the Scoping Survey have been discussed, particularly in the context of JN-3, at multiple meetings over the past few weeks without agreement to specifically include the survey as a mandatory activity. The ideal time to perform a Scoping Survey is before the D&D activities begin in a specific building or area. However, since D&D activities have already begun at West Jefferson North, this DOE/CEMP requirement is for incorporation of each Scoping Survey at an appropriate time to support definition of the current state of the buildings and external areas in order to provide an improved basis for development of the baseline (and for current/ongoing work).

It has been observed at the baseline meetings that a review of the types of radiological surveys typically employed in D&D efforts would be helpful to increase the awareness of the participants. A typical list of the types of surveys, in the order performed, follows:

- Historical Site Assessment
- Scoping Survey
- Characterization Survey
- D&D Support Survey
- Final Status Survey (FSS)
- Independent Verification Contractor (IVC) Survey

The purpose of a Scoping Survey is to expand upon the Historical Site Assessment by collecting biased samples in potential areas of concern. Biased samples are based on knowledge and judgement, rather than statistically based grid positions. For example, historical survey data exist for JN-2 and JN-3 and have been discussed at the baseline planning meetings for the purpose of identifying additional sampling such as in the JN-3 roof area. The objectives of a Scoping Survey include:

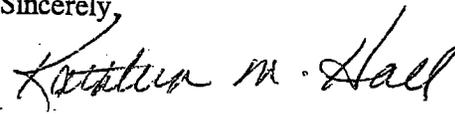
- Provide input to characterization survey design
- Support classification of site areas
- Identify site contaminants and their variability
- Identify non-impacted areas that may be suitable background references
- Provide preliminary information to evaluate D&D methodologies/activities
- Provide a basis for projecting waste streams
- Provide a basis for material removal & disposal methodologies (such as in JN-3)
- Provide a basis for contamination control plans (such as in the JN-1 High Bay Area)

In summary, the Scoping Survey is a critical step in estimating the initial technical conditions of the buildings and external areas in order to improve the basis for planning. It provides information for improved development of the activities required to proceed from the current state to the desired end state. By reducing significant uncertainties regarding the current state, the baseline scope, cost and schedule can be developed with more confidence.

Please assure that time is scheduled at one of the baseline meetings to communicate to the participants the purpose of the Scoping Survey, within the sequence of radiological surveys, and how the Scoping Survey can be beneficially applied to the BCLDP. Subsequent to this orientation, it is anticipated that the Scoping Survey process can be formally incorporated in to the baseline planning process.

Overall, the baseline planning process being used appears to be very effective. I am confident that the resulting baseline will be significantly improved as a result of this process coupled with the teamwork within your organization.

Sincerely,

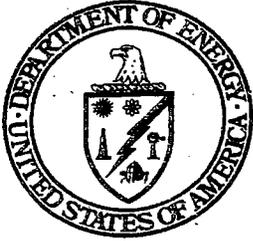
for 

Thomas A. Baillieul, Director
Columbus Environmental Management Project

TAB/KH/DL/JG/lah/C00-0018

cc:

B. Kain, DOE/OH-AAM
C. Theibert, Battelle
K. Hall, DOE-CEMP
S. Davis, DOE-CEMP
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U.S. Department of Energy

**Columbus Environmental Management Project
555 Metro Place North, Suite 415
Dublin, Ohio 43017**

June 20, 2000

Mr. J. N. Gantos, Manager
Decontamination & Decommissioning Operations
Battelle Memorial Institute
505 King Avenue
Columbus, OH 43201-2693

Dear Mr. Gantos:

SUBJECT: ASSUMPTIONS FOR BASELINE PLANNING

The purpose of this correspondence is to encourage you to continue documenting assumptions as necessary in order to enable the baseline planning process to be completed efficiently. It is my intent to continue supporting this approach for the purpose of developing Baseline Revision 3 in a timely manner even though the assumptions will be revisited subsequently in light of actual information that becomes available as the BCLDP progresses. It is my understanding that the baseline facilitators are tracking assumptions which appear to be significantly uncertain.

In anticipation that the actual implementation may differ from the assumptions, DOE/CEMP baseline meeting attendees will also track significant uncertainties. For example, assuming that a new waste water treatment facility will be installed for the middle area will enable an approach to be established and estimated for the baseline, but such a facility is not known to be necessary or cost effective. Also, the DOE/CEMP-provided assumption that the JN-2 and JN-3 end state of "demolition" is not to be interpreted as a firm decision for actual implementation, but only as a means to enable development of the baseline.

Please pass on to your team that I appreciate the significant progress which has been achieved on the baseline planning thus far.

Sincerely,

Thomas A. Baillieul

Thomas A. Baillieul, Director
Columbus Environmental Management Project

TAB/psr/C00-0030

cc:

C. Theibert, Battelle
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BCLDP Baseline, Revision 3

Program Requirements

The decontamination and decommissioning (D&D) program at the West Jefferson Site is driven by numerous requirements. These requirements are the primary source of the plans and procedures developed and adopted by the BCLDP for guiding its activities. The technical and programmatic justification and bases for the planned activities in the baseline are directly traceable to these plans and procedures and to the source requirement documents with which the BCLDP must comply. The specific plans and procedures applicable to the activities in the baseline are cited on individual data templates. The mechanism for tracing those plans and procedures to their related source requirement documents are furnished in the following list and table.

The attached Source Requirements Documents list identifies the source requirement documents applicable to the BCLDP. The subsequent Relationship of BCLDP Procedures/Plans with Requirements Sources table lists the BCLDP plans and procedures and is cross-referenced to the document numbers identified in the Source Requirements Documents list. By tracing the specific plans and procedures identified in the data templates to the attached list and table, the reader can identify the specific requirements with which each activity in the baseline must comply.

Source Requirements Documents

1. 10 CFR 19 – Reports to Workers
2. 10 CFR 20 – Radiation Protection
3. 10 CFR 21 – Reporting Defects
4. 10 CFR 30, 40, 70 – Materials Licenses
5. 10 CFR 50.59 – Changes
6. 10 CFR 50, App. B – QA
7. 10 CFR 50, App. E – Emergency Plan
8. 10 CFR 61 – Waste Disposal
9. 10 CFR 71 – Transportation
10. 10 CFR 73 – Safeguards/Security
11. 15 CFR 285 – NVLAP
12. 29 CFR 1904 – Reporting Incidents
13. 29 CFR 1910/1926 – OSHA
14. 40 CFR 61 - NESHAPS
15. 40 CFR 82 – HFCs
16. 40 CFR 112 – Spill Control
17. 40 CFR 172 – Emergency Information
18. 40 CFR 260–270 – Hazardous Waste
19. 40 CFR 273 – Universal Waste
20. 40 CFR 279 – Used Oil
21. 40 CFR 302 – Reportable Quantities
22. 40 CFR 355 – Emergency Notification
23. 40 CFR 761 – PCBs
24. 40 CFR 1501-1507 - NEPA
25. 49 CFR 171–180 – Transportation
26. 50 CFR 17 – Endangered Species
27. OAC 1301 – Fire Code/UST
28. OAC 3701 – ODOH

29. OAC 3745 – OEPA
30. OAC 3750 – Emergency Planning
31. OAC 4101 – Building Code
32. OAC 4121 – Industrial Safety
33. OAC 5501 – Transportation
34. WAC 173-303 – Hazardous Waste

35. SNM-7 NRC License
36. NPDES Permit
37. PTL/PTO Exemption

38. WIPP QAPD – QA
39. WIPP WAC – Waste Criteria
40. WIPP WAP – Waste Characterization
41. WIPP TRUPACT II SARP – Transportation
42. WHC-EP-0558 – Type A Packaging
43. Hanford WAC – Waste Criteria
44. NTS WAC – Waste Criteria
45. Envirocare WAG – Waste Criteria
46. GTS WAC – Waste Criteria
47. Alaron RMAC – Waste Criteria
48. Oak Ridge WAP – Waste Criteria

49. DOE O231.1(5400.1) – ESH Reporting
50. DOE O414.1A – Quality Assurance
51. DOE O435.1 – Waste Management
52. DOE O451.1A - NEPA
53. DOE O1540.1 – Transportation
54. DOE O5400.3 – Mixed Waste
55. DOE O5400.5 – Rad Protection
56. DOE O5480.1A – Rad Protection
57. DOE O5480.3 – Hazardous Materials
58. DOE O5480.6 – Training
59. DOE O5480.11 – Rad Protection

60. DOE O5480.15 – DOELAP
61. DOE O5484.1 – ESH Reporting
62. DOE O5820.2A(O435.1) – Waste Mgmt
63. DOE/CH-9401 – Material Surveys
64. DOE/EH-0026 – DOELAP
65. DOE/EH-0027 – Dosimetry Testing
66. DOE/EH-0053 – Environmental Survey
67. DOE/EH-0173T – Effluent Monitoring
68. DOE/EH-256T – Radcon Manual
69. DOE/ID-10500 – Hoisting/Rigging
70. DOE-STD-1054 – Calibration

71. DOT 5800.6 – Emergency Response

72. EO 12856 – Toxic Chemical Releases
73. EO 12873 - Recycling

74. EPA 600/R-92/088 – Pollution Prevention
75. EPA 400-R-92-001 – Protective Actions
76. EPA 520/1-75-001-A – Protect. Actions
77. EPA OSWER 9950.1 – RCRA Monitoring
78. EPA SW-846 – Waste Test Methods
79. EPA Env Field Sampling Manual

80. NRC FC 83-23 – License Termination
81. NRC IN 81-26 – Dosimetry Placement
82. NRC IN 91-39 – Reporting Defects
83. NRC IN 92-37 – Deliberate Misconduct
84. NRC IN 92-62 – Shipping Emergencies
85. NRC RG 1.86 – Release Limits
86. NRC RG 3.67 – Emergency Plans
87. NRC RG 4.15 – Quality Assurance
88. NRC RG 8.4 – Dosimeters
89. NRC RG 8.8 – ALARA

90. NRC RG 8.9 – Bioassay Program
91. NRC RG 8.10 – ALARA
92. NRC RG 8.11 – Uranium Bioassay
93. NRC RG 8.13 – Prenatal Rad Exposure
94. NRC RG 8.15 - Respiratory Protection
95. NRC RG 8.25 – Air Sampling
96. NRC RG 8.29 – Exposure Risks
97. NRC DG4006 – License Termination
98. NUREG-0041 – Respiratory Protection
99. NUREG-0654 - Emergency Planning
100. NUREG-1400 – Air Sampling
101. NUREG/CR-4884 – Bioassay
102. NUREG/CR-5212 – Emergency Sampling
103. NUREG/CR-5849 – Radiation Surveys

104. ANSI 1330.20 – Crane Safety
105. ANSI 1356.1 – Low/Highlift Trucks
106. ANSI A10.3 – Explosive Fastening Tools
107. ANSI A10.6 – Demolition Safety
108. ANSI A10.8 – Scaffolding
109. ANSI A10.18 – Fall Protection
110. ANSI A10.28 – Suspended Work Platforms
111. ANSI A10.38 – Health/Safety
112. ANSI A13.1 – Piping System Labels
113. ANSI A14.2 – Metal Ladders
114. ANSI A14.5 – Plastic Ladders
115. ANSI A92.2 – Manlift Vehicles
116. ANSI/ANS 3.3 – Security
117. ANSI/ANS 3.7.1 – Emergencies
118. ANSI/ANS 3.8.x – Emergencies
119. ANSI/ANS 40.35 – Volume Reduction
120. ANSI B7.1 – Abrasive Wheels
121. ANSI N3.1 – HP Personnel Requirements
122. ANSI N13.1 – Airborne Rad Sampling

123. ANSI N13.11 – Dosimetry
124. ANSI N13.12 – Material Release
125. ANSI N13.15 – TLDs
126. ANSI N13.27 – Alarming Dosimeters
127. ANSI N13.30 – Radiobioassay
128. ANSI N13.41 – Multiple Dosimetry
129. ANSI N42.17A – Rad Instrumentation
130. ANSI N42.17B – Airbourne Rad Monitoring
131. ANSI N42.17C – Portable Rad Instruments
132. ANSI N42.18 – Effluent Monitoring
133. ANSI N319 – Neutron Dosimeters
134. ANSI N322 - Dosimeters
135. ANSI N323A – Rad Inst. Calibration
136. ANSI N510 – Testing Air Systems
137. ANSI N1342 – Dosimetry
138. ANSI Z9.2 – Local Ventilation Systems
139. ANSI Z49.1 – Cutting/Welding
140. ANSI Z87.1 – Eye Protection
141. ANSI Z88.2 - Respiratory Protection
142. ANSI Z88.6 – Respirator Use
143. ANSI Z89.1 – Head Protection
144. ANSI Z117.1 – Confined Spaces
145. ANSI Z244.1 – Lockout/Tagout
146. ANSI Z358.1 – Emergency Eyewash
147. ANSI Z540.1 – Calibration of Instruments
148. ASME B30.xx – Cranes/Slings/Hooks
149. ASME B56.1A – Highlift Trucks
150. ASME NQA – 1 – Quality Assurance
151. CGA G.7 – Respirable Air
152. CGA G-7.1 – Breathing Air Quality
153. HASL 300 – Env Monitoring
154. ICRP 26
155. ICRP 30 – Intake Limits
156. ICRP 54 – Monitoring Intakes

157. ICRP 55 – RP Decision-Making
158. NCRP 65 – Personnel Decontamination
159. NCRP 87 – Bioassay
160. NCRP 91 – Exposure Limits
161. NCRP 106 – Hot Particles
162. NFPA 10 – Fire Extinguishers
163. NFPA 25 – Water-Based FP
164. NFPA 51B – Cutting/Welding
165. NFPA 70 – Electrical Code
166. NFPA 70E – Electrical Safety
167. NFPA 24 – Fire Mains
168. NFPA 801 – Fire Protection
169. NFPA 1962 – Fire Hoses
170. NIOSH 87-116 - Respiratory
171. Water Jetting Guidelines
172. ICRP 23 – Dosimetry
173. ANSI N542 – Sealed Sources
174. NRC IN 93-30 – Sources
175. ANSI N13.5 – Pocket Dosimeters
176. ANSI Z41 – Protective Footwear
177. EPA-600/4-80-032 – Env Monitoring
178. EPA-600/7-700-088 – Lab QC
179. DOE/LLW-217 – Waste Treatment
180. 10 CFR 835 – Rad Protection
181. 40 CFR 141 – Drinking Water
182. CGA P-1 – Compressed Gas
183. NUREG-1140 – Emergency Prep.
184. EPA-530-R-94-024 – Haz Waste
185. DOE/EM-0246 – Decommissioning
186. ICRP 37 – ALARA
187. ANSI N2.1 – Rad. Symbol
188. ANSI N542 – Leak Testing
189. NRC RG 10.1 – Medical Use

Relationship of BCLDP Procedures/Plans with Requirements Sources

BCLDP Procedure/Plan	Requirement Sources in Table G-1
DD-AP-05.0	13, 31, 32, 111
DD-CP-002	6, 13, 50 103, 108, 109, 113, 114, 115, 135, 144,147, 150
DD-CP-004	6, 13, 50, 103, 108, 109, 113, 114, 115, 135, 140, 142, 143, 144, 147, 150
DD-CP-007	6, 13, 50, 59, 103, 108, 109, 113, 114, 115, 135, 140, 142, 143, 144, 147, 150
DD-CP-010	6, 13, 50, 103, 108, 109, 113, 114, 115, 124, 135, 140, 142, 143, 144, 147, 150
DD-CP-015	6, 13, 50, 103, 108, 109, 113, 114, 115, 135, 140,

	142, 143, 144, 147, 150
DD-CP-020	6, 13, 50, 103, 108, 109, 113, 114, 115, 135, 140, 142, 143, 144, 147, 150
DD-CP-025	6, 13, 50, 103, 108, 109, 113, 114, 115, 135, 144, 147, 150
DD-CP-030	6, 13, 50, 103, 108, 109, 113, 114, 115, 135, 144, 147, 150
DD-OP-020	2, 6, 13, 32, 50, 55, 111, 113, 114, 115, 136, 140, 143, 150
DD-OP-025	6, 13, 32, 50, 140, 150
DD-OP-029	6, 13, 32, 50, 55, 85, 94, 98, 105, 139, 140, 141, 142, 145, 150, 164
DD-OP-030	6, 13, 32, 50, 69, 104, 109, 140, 143, 148, 150
DD-OP-035	6, 13, 32, 50, 69, 104, 109, 140, 143, 148, 150
DD-OP-065	2, 6, 13, 32, 50, 59, 136, 140, 150
DD-OP-075	6, 13, 27, 31, 32, 50, 55, 63, 69, 85, 94, 98, 103, 104, 105, 107, 108, 109, 110, 111, 113, 114, 115, 120, 124, 138, 139, 140, 141, 142, 143, 144, 145, 148, 149, 150, 164, 166, 168, 171
DD-OP-076	6, 13, 32, 50, 98, 109, 110, 113, 114, 115, 138, 141, 142, 144, 146, 150
DD-OP-077	6, 13, 32, 50, 150
DD-OP-090	6, 13, 32, 50, 69, 104, 140, 143, 148, 150
DD-OP-102	6, 13, 32, 50, 105, 113, 114, 140, 143, 145, 148, 149, 150
DD-OP-110	6, 13, 27, 31, 32, 50, 105, 107, 108, 113, 114, 115, 140, 143, 144, 145, 149, 150
DD-OP-116	6, 13, 32, 50, 105, 107, 108, 109, 113, 114, 115, 140, 143, 144, 145, 149, 150, 166
DD-OP-195	6, 13, 32, 50, 98, 107, 108, 109, 113, 114, 115, 120, 140, 141, 142, 143, 144, 150

DD-OP-215	6, 13, 32, 50, 120, 140, 150
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DD-OP-217	6, 13, 32, 50, 140, 150
DD-OP-218	6, 13, 32, 50, 140, 150
EM-AP-01.0	6, 50, 150
EM-AP-02.0	2, 3, 6, 14, 50, 150
EM-AP-03.0	2, 6, 50, 55, 150
EM-AP-04.0	6, 50, 150
EM-OP-001	6, 13, 32, 50, 135, 140, 150, 189
EM-OP-002	2, 6, 13, 32, 50, 55, 140, 150
EM-SP-001	2, 6, 14, 50, 66, 67, 150, 153
EM-SP-002	2, 6, 13, 32, 50, 66, 67, 140, 150, 153
EM-SP-003	2, 6, 50, 66, 67, 150, 153
EM-SP-004	2, 6, 50, 66, 67, 150, 153
EM-SP-005	2, 6, 49, 50, 55, 150, 153
EM-SP-006	2, 6, 49, 50, 55, 150, 153
EM-SP-007	2, 6, 50, 56, 67, 150, 153
EM-SP-008	2, 6, 14, 49, 50, 55, 67, 150
EM-SP-009	6, 14, 18, 49, 50, 66, 67, 77, 150
EM-SP-011	2, 6, 50, 56, 66, 67, 150, 153
EP-AP-01.0	6, 7, 13, 50, 86, 99, 150, 162
EP-IP-001	6, 7, 50, 86, 116, 117, 118, 121, 150
EP-IP-002	6, 50, 75, 76, 86, 99, 150
EP-IP-003	2, 6, 7, 12, 16, 17, 18, 21, 25, 50, 75, 86, 99, 150
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EP-IP-005	6, 7, 21, 22, 30, 50, 75, 76, 86, 99, 118, 150
EP-IP-006	2, 6, 50, 68, 75, 86, 99, 150
EP-IP-007	2, 6, 7, 50, 99, 118, 150

EP-IP-008	6, 50, 150
EP-IP-009	2, 6, 50, 59, 68, 75, 86, 99, 150
EP-IP-010	6, 50, 99, 116, 117, 118, 121, 150
EP-IP-011	6, 13, 50, 150
EP-IP-012	2, 6, 7, 50, 99, 150
EP-IP-013	6, 7, 50, 99, 150
EP-IP-014	4, 6, 9, 25, 50, 62, 71, 84, 150
HL-OP-005	6, 13, 16, 32, 50, 140, 150
HL-OP-006	6, 13, 32, 50, 140, 145, 150
HL-OP-015	6, 13, 32, 50, 150
HL-OP-030	6, 13, 32, 50, 150
HL-OP-040	6, 13, 32, 50, 136, 140, 150
HL-OP-050	6, 13, 32, 50, 150
HL-OP-055	6, 13, 32, 50, 150
HP-AP-01.0	2, 6, 50, 59, 68, 121, 150
HP-AP-02.0	1, 2, 6, 49, 50, 93, 150
HP-AP-04.0	2, 6, 50, 64, 65, 68, 150
HP-AP-05.0	1, 2, 6, 35, 49, 50, 101, 127, 150, 154, 159, 160, 172
HP-AP-05.1	2, 6, 50, 150
HP-AP-06.0	6, 50, 64, 68, 127, 150
HP-AP-07.0	2, 3, 4, 6, 9, 10, 25, 35, 50, 82, 83, 150
HP-AP-08.0	2, 6, 50, 89, 91, 96, 97, 150
HP-AP-08.1	2, 6, 50, 68, 96, 150, 157
HP-AP-08.2	2, 6, 50, 68, 150
HP-AP-09.0	2, 6, 50, 68, 150
HP-AP-10.0	2, 6, 50, 68, 89, 150, 157
HP-AP-11.0	2, 6, 50, 59, 95, 100, 122, 150

HP-AP-13.0	6, 50, 121, 150, 158, 161
HP-AP-14.0	2, 6, 49, 50, 150
HP-AP-15.0	2, 6, 50, 59, 68, 150
HP-AP-17.0	2, 6, 50, 150
HP-AP-19.0	6, 50, 68, 150
HP-AP-21.0	6, 50, 55, 59, 68, 150
HP-AP-23.0	2, 6, 50, 150
HP-AP-29.0	6, 35, 50, 70, 126, 135, 147, 150
HP-AP-31.0	2, 6, 50, 150
HP-AP-35.0	1, 2, 6, 49, 50, 64, 127, 150
HP-AP-36.0	5, 6, 50, 150
HP-OP-001	2, 6, 49, 50, 68, 81, 128, 150
HP-OP-011	2, 6, 50, 55, 63, 85, 103, 121, 150
HP-OP-012	2, 6, 50, 59, 68, 150
HP-OP-013	2, 6, 13, 50, 68, 94, 141, 150, 170
HP-OP-014	2, 4, 6, 9, 50, 150
HP-OP-017	2, 6, 50, 59, 68, 150
HP-OP-018	2, 6, 50, 88, 134, 150
HP-OP-019	2, 6, 50, 59, 121, 150
HP-OP-022	2, 4, 6, 25, 28, 35, 50, 121, 150, 173, 174
HP-OP-023	6, 13, 32, 50, 136, 150
HP-OP-024	6, 50, 140, 150
HP-OP-027	2, 6, 13, 32, 94, 98, 50, 140, 141, 142, 150, 151, 152, 170
HP-OP-032	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-100	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-101	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-102	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-104	6, 13, 32, 50, 121, 135, 147, 150

HP-OP-105	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-106	2, 6, 18, 23, 25, 34, 35, 50, 55, 59, 121, 150, 153
HP-OP-107	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-109	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-110	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-111	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-112	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-113	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-115	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-117	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-119	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-122	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-123	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-124	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-125	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-127	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-131	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-141	6, 13, 32, 50, 88, 121, 135, 147, 150, 175
HP-OP-149	6, 13, 32, 50, 121, 135, 147, 150
HP-OP-201	2, 6, 50, 59, 150, 161
HS-AP-02.0	13, 32, 111
HS-AP-04.0	13, 32, 108, 113, 114
HS-AP-05.0	13, 32, 140, 143, 176
HS-OP-001	6, 13, 32, 50, 150
MA-AP-20.1	50

MA-AP-20.2	50
PR-AP-17.1	6, 50, 150
QD-AP-02.1	6, 50, 150
QD-AP-02.2	6, 50, 150
QD-AP-02.4	6, 50, 150
QD-AP-03.1	6, 50, 150
QD-AP-03.2	6, 50, 150
QD-AP-03.3	6, 50, 150
QD-AP-04.1	2, 3, 6, 50, 55, 59, 150
QD-AP-05.1	6, 50, 150
QD-AP-05.2	6, 50, 150
QD-AP-06.1	6, 50, 150
QD-AP-07.1	6, 50, 150
QD-AP-10.1	6, 50, 150
QD-AP-15.1	6, 50, 150
QD-AP-16.1	6, 50, 150
QD-AP-18.1	6, 50, 150
QD-AP-18.2	6, 50, 150
QD-AP-19.1	6, 50, 150
QD-AP-19.2	6, 50, 150
QD-AP-19.3	50
RC-AP-01.0	6, 50, 150
RC-AP-02.0	6, 50, 150
RC-AP-03.0	6, 50, 150
RL-AP-01.0	6, 50, 150
RL-CP-009	6, 13, 32, 50, 121, 135, 147, 150
RL-CP-010	6, 13, 32, 50, 121, 135, 147, 150, 177
RL-CP-012	6, 13, 32, 50, 121, 135, 147, 150
RL-CP-022	6, 13, 32, 50, 121, 135, 147, 150

RL-TP-005	6, 50, 140, 150, 177
RL-TP-007	6, 50, 140, 150
RL-TP-020	6, 50, 140, 150
RL-TP-025	6, 50, 140, 150
RL-TP-026	6, 50, 140, 150, 177
RL-TP-030	6, 50, 140, 150, 177, 178
RL-TP-035	6, 50, 140, 150, 177
RL-TP-040	6, 50, 140, 150
RL-TP-054	6, 50, 140, 150
RL-TP-056	6, 50, 78, 140, 150
RL-TP-057	6, 50, 78, 140, 150
RS-AP-01.0	2, 6, 13, 25, 32, 50, 94, 98, 141, 142, 150, 152
RS-OP-002	6, 13, 32, 50, 141, 150, 170
RS-OP-008	2, 6, 13, 32, 50, 98, 141, 150, 170
RS-OP-012	6, 13, 25, 32, 50, 68, 98, 141, 150, 152
RS-OP-014	6, 13, 32, 50, 150
RS-OP-016	6, 50, 141, 150, 151, 152
RS-OP-020	6, 50, 150
SC-SP-004.1	6, 50, 103, 140, 150
SC-SP-004.2	6, 13, 32, 50, 103, 140, 150
SC-SP-006	6, 13, 32, 50, 103, 140, 150
SC-SP-015	6, 13, 32, 50, 150
SM-AP-01.0	6, 40, 50, 147, 150
SM-CP-001	6, 13, 32, 50, 140, 150
SM-OP-001	6, 13, 27, 31, 32, 50, 69, 104, 105, 106, 109, 112, 113, 114, 115, 136, 140, 144, 146, 148, 149, 150, 162, 163, 165, 167, 168, 169
SM-OP-003	6, 13, 32, 35, 50, 55, 140, 149, 150
SM-OP-005	6, 13, 27, 32, 35, 50, 150, 165, 166

SW-AP-01.0	6, 50, 150
SW-AP-02.0	6, 50, 150
SW-AP-03.0	6, 50, 150
TC-AP-01.1	6, 38, 39, 40, 50, 150
TC-AP-01.1.1	6, 18, 38, 39, 40, 41, 50, 150, 179
TC-AP-01.1.2	6, 38, 39, 40, 50, 150
TC-AP-01.2	6, 38, 39, 50, 150
TC-AP-01.3	6, 38, 39, 50, 150
TC-AP-01.4	6, 38, 39, 50, 150
TC-AP-01.5	6, 38, 50, 150
TC-AP-03.1	6, 18, 23, 38, 39, 40, 41, 50, 150, 179
TC-OP-01.1	6, 18, 23, 50, 62, 150
TC-OP-01.2	6, 9, 39, 50, 140, 150
TC-OP-01.3	6, 50, 140, 150
TC-OP-01.4	6, 18, 23, 25, 38, 39, 50, 150, 180
TC-OP-01.5	6, 50, 150
TC-OP-01.6	6, 50, 150
TD-AP-01.0	6, 50, 150
TD-AP-02.0	6, 50, 150
TD-AP-03.0	6, 50, 150
TD-AP-04.0	6, 50, 59, 68, 121, 150
TD-AP-05.0	1, 6, 35, 50, 68, 150, 180
TR-OP-001	6, 13, 14, 18, 32, 33, 50, 53, 150
TR-OP-002	6, 13, 14, 18, 32, 33, 50, 57, 150
TR-OP-003	2, 6, 9, 13, 25, 32, 33, 42, 50, 84, 150
TR-OP-004	2, 6, 9, 13, 25, 32, 33, 42, 50, 84, 150
TR-OP-005	2, 6, 13, 18, 25, 32, 33, 34, 43, 45, 46, 50, 150
TR-OP-006	6, 9, 25, 43, 50, 150

TR-OP-007	6, 18, 25, 33, 50, 150
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WA-OP-036	6, 50, 150
WA-OP-037	6, 50, 150
WA-OP-038	6, 50, 150
WA-OP-039	6, 50, 150
WA-OP-040	6, 50, 150
WA-OP-041	6, 50, 150
WA-OP-060	6, 43, 50, 140, 146, 150
WA-OP-061	6, 13, 23, 50, 150
BCLDP-90-1	6, 9, 25, 34, 43, 45, 50, 78, 150
BCLDP-90-2	6, 43, 45, 46, 50, 53, 57, 62, 68, 72, 73, 74, 150
DD-90-01	6, 50, 150
DD-90-02	2, 6, 25, 50, 59, 85, 150, 186, 187, 188
DD-92-02	6, 13, 32, 50, 140, 146, 162, 150, 182
DD-92-04	2, 6, 50, 150, 185
DD-93-02	6, 50, 55, 59, 68, 85, 121, 135, 150
DD-93-03	2, 6, 50, 55, 59, 68, 80, 121, 135, 150
DD-93-04	1, 2, 4, 6, 13, 18, 25, 28, 32, 35, 50, 58, 115, 121, 141, 150
DD-93-05	6, 50, 150
DD-93-07	6, 50, 86, 99, 150, 183

DD-93-09	1, 2, 4, 6, 49, 50, 90, 92, 95, 100, 101, 127, 137, 150, 155, 156
DD-93-10	1, 2, 4, 6, 11, 49, 50, 60, 123, 125, 128, 150, 161
DD-93-11	2, 6, 8, 9, 13, 18, 25, 43, 45, 46, 47, 50, 62, 68, 150
DD-93-15	50
DD-93-19	2, 3, 6, 25, 43, 50, 55, 59, 68, 85, 98, 135, 150, 161
DD-94-01	6, 50, 103, 150
DD-97-01	6, 50, 103, 135, 150
DD-97-02	6, 50, 103, 135, 150
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DD-98-04	6, 38, 43, 50, 62, 150
RL-QAP-01.0	6, 9, 50, 87, 150
RC-WP-006	6, 50, 150
TCP-98-01	6, 39, 50, 150
TCP-98-01.1	6, 38, 50, 150
TCP-98-01.2	6, 41, 50, 150
TC-98-01.2.1	6, 9, 41, 50, 150
TCP-98-02	6, 40, 50, 150
TCP-98-03	6, 18, 29, 38, 39, 40, 50, 150, 184
TCP-98-03.1	6, 50, 150
TCP-98-03.1.1	6, 18, 23, 25, 50, 150
TCP-98-03.1.2	6, 18, 23, 25, 50, 150
TCP-98-03.1.3	6, 18, 23, 25, 50, 150
TCP-98-04	6, 41, 50, 150
TCP-98-05	6, 38, 50, 150

Approach Taken to Develop the Baseline

A systems engineering approach was used to develop the BCLDP Baseline by:

- (1) implementing a systematic, logical process
- (2) developing a comprehensive model for managing functions, requirements, strategies, issues, and risks
- (3) identifying realistic project risks and contingencies.

A structured process, based on hierarchical decomposition, was used to identify, define and analyze the decontamination and decommissioning (D&D) needs of each building and area within the West Jefferson North site. The basic approach was to apply the F-R-A (functions-requirements-architecture) process for functional analysis. Functions (F) define what must be done, requirements (R) specify how well it must be done, and architecture (A) identifies the preferred strategy for accomplishing it. This step-wise, hierarchical approach reduces the complexities with which the BCLDP Project would otherwise be faced when developing an integrated baseline.

Figure 1 illustrates the sequential F-R-A approach that was implemented in a series of workshops with a team of technical experts representing each of the technical disciplines required of the BCLDP Project. The first step was to explicitly state the mission of the BCLDP,

To decontaminate and decommission the West Jefferson North site to a condition that is suitable for use without restrictions and to dispose of or store the associated radioactive waste at a suitable DOE-approved facility.

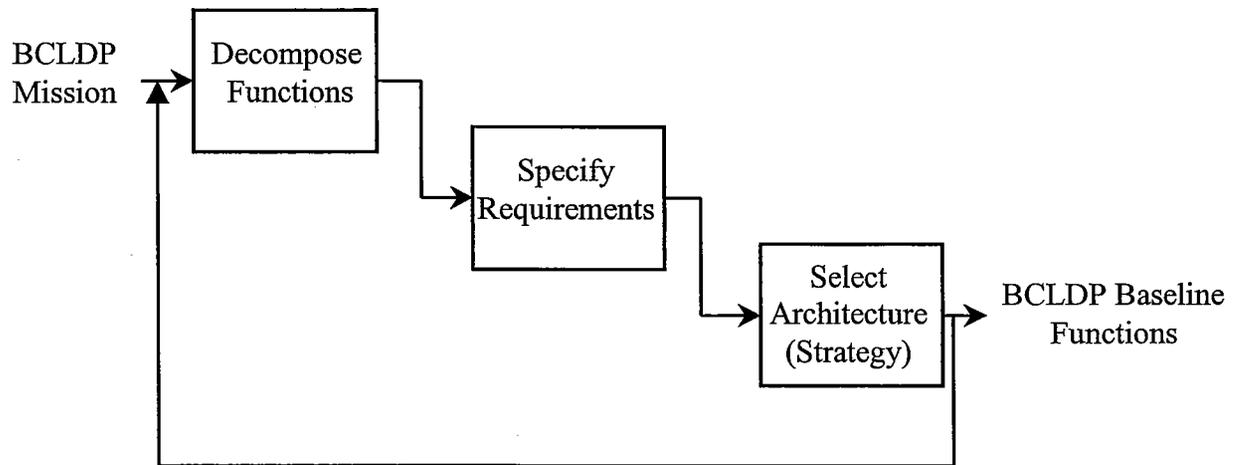


Figure 1. Functional Analysis Approach

The technical experts further decomposed the top level BCLDP mission into a set of functions that they determined to be both necessary and sufficient to satisfy the mission (Figure 2). Using

CORE®, a systems engineering support tool produced by Vitech Corporation, a project model was built that captures the complete set of BCLDP functions, requirements, and strategies. The model is also used to track the flow of materials, wastes, samples, and data between functions, ensuring project integration.

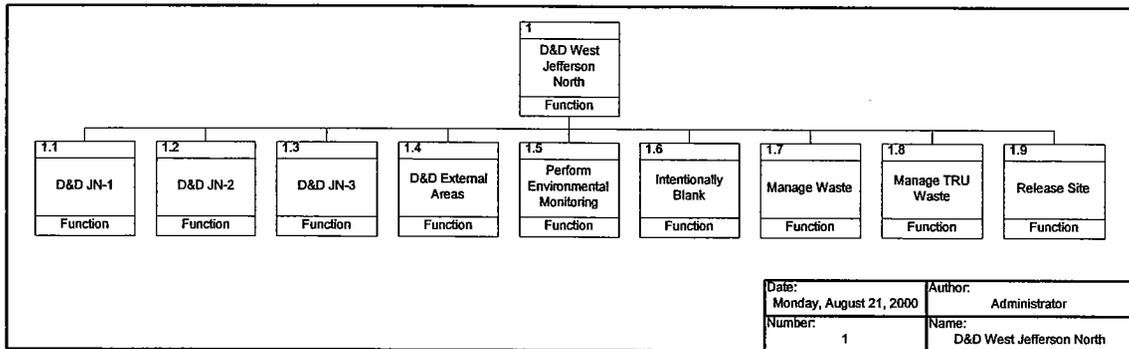


Figure 2. Hierarchy of Functions for Completing the BCLDP Mission

Each of the 2nd level functions in Figure 2 was further decomposed by team members to a level of detail consistent with the needs of a sufficiently comprehensive baseline. Internal procedures containing requirements that specify how well each of the functions must be accomplished were identified and assigned to each function. Finally, a preferred technical strategy that could perform each function and satisfy its complete set of requirements was selected.

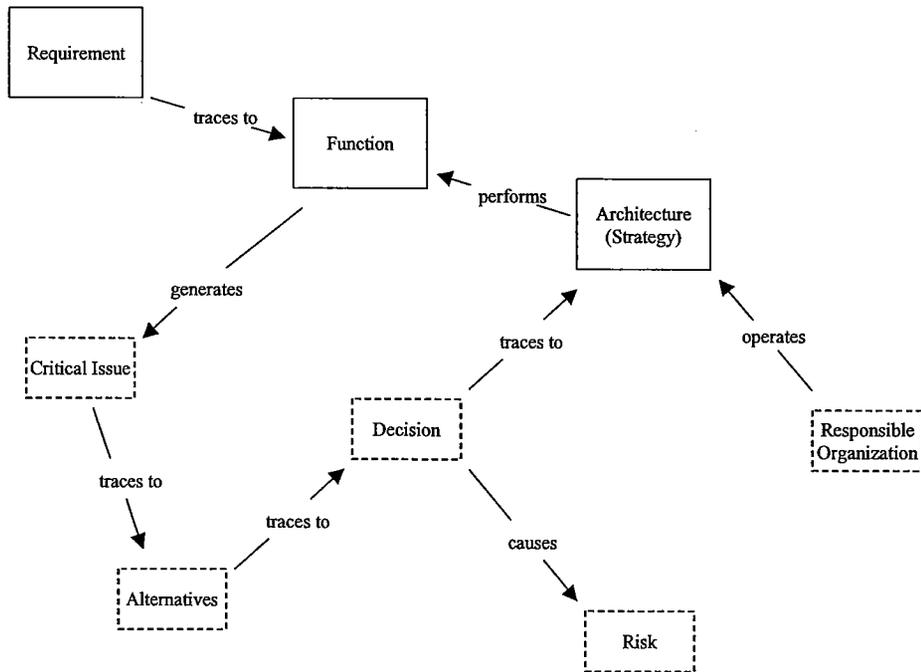


Figure 3. Traceability Schema for the Program Development Logic

Figure 3 illustrates the schema that was used to apply and document this approach. At the top-level, a set of *functions* is identified that needs to be performed, subject to applicable *requirements*, to satisfy the mission. A function, in turn, generates a *critical issue* which essentially asks the question, “how will the function be performed?” This leads to a set of *alternatives*, one of which is selected to perform the function. The preferred alternative, or *decision*, is then expressed as a *strategy* that will be operated by the *responsible organization* in order to perform the relevant function. The decision may also cause one or more programmatic *risks* that must be managed. The complete set of information is captured on individual data templates for each function (see Table 1).

The technical experts also provided cost estimates and durations for individual functions. The functions were then scheduled by level-loading the expenditures over the expected time to complete the entire project. This defined the baseline cost and schedule to completion.

Table 1. Data Template

JN-1 JN-2 JN-3 Ext. Area Env. Mtr. Samples TRU/Waste Release Site

Function Number: enter the function # from the function tree model; e.g., 1.2.1.2

Activity Number: enter the activity #

Work Package Number: enter the work package #

Function Name: enter the function title from the function tree model; e.g. Remove 2nd Floor Material

Component Name: enter the building #, the area, etc.; e.g., 2nd Floor of JN-2 or North Well House

Function Description: enter a brief description (1-4 sentences) of what will be done as a part of this function; i.e., the entire scope of the function, including planning, preparation of work instructions, performing the work, etc.

Basis of Estimate

Strategy for Accomplishing Function: enter a brief description of the strategy selected to perform the work and, if applicable, a list of alternative strategies considered

Applicable Requirements/Procedures:

1. enter a list of the applicable requirements and BCLDP Procedures that prescribe how well the work must be performed; note, by entering a carriage return after each requirement the list will automatically continue

Input Descriptions:

1. enter a list of the necessary inputs to begin and complete the entire scope of this function; e.g., characterization data, 2nd floor minus M&E equipment, etc.

Output Descriptions:

1. enter a list of the expected outputs from the entire scope of this function; e.g., Work Instructions, # of various samples, waste volumes by type, 2nd floor minus surface contamination, etc.

Assumptions: enter a list of the important assumptions that were made to allow the entire scope of this function to be planned; e.g., based on present information the amount of contaminated underground pipe is estimated to be x ft, 4% of the floor is expected to be contaminated, etc.

1. an assumption should be the assumed productivity rate, if appropriate; e.g., vacuuming @ 200 sq. ft. per day, with a crew of 2 manipulator operations based on similar experience at...

Estimated Time to Plan the Work (Including Review and Approval): enter the elapsed time expected to be necessary to properly plan the work, including the time necessary for review and approval of the plan (i.e., work instructions)

Estimated Resources Required to Plan the Work

In the following table, for each appropriate labor type enter the # of Persons involved in planning the activity, the # of Days (full or partial) they will be involved, and the total # of person-Hours necessary to plan the work, e.g., 2/5/36

Table 1. Data Template (continued)

Labor Type	Code	Persons/Days/Hours
Manager/Senior Staff	HBB	
Technical Advisors	HBTA	
Project Manager/HP Manager	HBPM	
Task Leader	HBTL	
Secretary/Clerical	HBS	
Support Professional	HBP	
Bartlett Health Physics	HRH	

Estimated Time to Perform the Work: enter the elapsed time expected to be necessary to actually perform the work

Estimated Resources Required to Perform the Work

In the following table, for each appropriate labor type enter the # of Persons working on the activity, the # of Days (full or partial) they are involved, and the total # of Hours necessary to actually perform the work; the PPE/Laundry Group to be used during the performance of the work; and the Total # of Jumps; e.g., 4/20/640 Group 1 160

Labor Type	Code	Persons/Days/Hours	PPE/Laundry Group	Total Jumps
Program Manager	HBA			
Manager/Senior Staff	HBB			
Technical Advisors	HBTA			
Project Manager/HP Manager	HBPM			
Task Leader	HBTL			
Battelle Technician	HBT			
Battelle Technician O/T	HBTO			
RAL Staff	HBL			
Support Professional	HBP			
Secretary/Clerical	HBS			
Decon Ops Hourly	HBH			
BCO Support	HBCO			
BCO Skilled Laborer	HCE			
BCO Skilled Laborer O/T	HCEO			
BCO Facility Manager	HCF			
Bartlett Technician	HRD			
Bartlett Maint Specialist	HRDS			
Bartlett Health Physics	HRH			
Bartlett Admin Support	HRA			

Subcontract/Purchased Service: enter the cost of any special subcontracts or services that are expected to be purchased to complete the work

Special Equipment/Material: enter the cost of any special equipment or material that is expected to be required to complete the work

Comments/Explanations: enter any information that you believe is necessary to explain special circumstances associated with this function

Completed by: enter your name

Date: enter date form completed/revised

Rev. No.: 0,1,2

Volume 1—Summary

- A. Letter of Transmittal (separate volume)
- B. Introduction
- C. Brief History of Project
- D. Project Photographs (CD Rom) (separate CD)
- E. Key Assumptions
- F. Guiding Principles
- G. DOE Letters
- H. Program Requirements
 - 1. Approach
- J. Outline of Volumes
- K. Cost by Year (separate volume)
- L. Contingency
- M. Risk Management Plan
- N. Critical Path
- O. Master Schedule
- P. Logic Network
- Q. WBS
- R. Organization Chart
- S. Abbreviations/Acronyms

Volume 2—JN-1, Hot Cell Facility

- A. Outline of Volume
- B. Approach
- C. Cost by Year (separate volume)
- D. Schedule
- E. Logic Networks
- F. Pricing Sheets (separate volume)
& Data Templates

Volume 3—JN-2, Critical Assembly Building

- A. Outline of Volume
- B. Approach
- C. Cost by Year (separate volume)
- D. Schedule
- E. Logic Networks
- F. Pricing Sheets (separate volume)
& Data Templates

Volume 4—JN-3, Research Reactor Building

- A. Outline of Volume
- B. Approach
- C. Cost by Year (separate volume)
- D. Schedule
- E. Logic Networks
- F. Pricing Sheets (separate volume)
& Data Templates

Volume 5—External Areas

- A. Outline of Volume
- B. Approach
- C. Cost by Year (separate volume)
- D. Schedule
- E. Logic Networks
- F. Pricing Sheets (separate volume)
& Data Templates

Volume 6—Other Areas—WBS 1.2 , 1.5, 1.6, and 1.7.8

- A. Outline of Volume
- B. Approach
- C. Cost by Year (separate volume)
- D. Schedule
- E. Logic Networks
- F. Pricing Sheets (separate volume)
& Data Templates

Volume 7—Waste Management WBS 1.1

G. Outline of Volume

H. Approach

C. Cost by Year (separate volume)

J. Schedule

K. Logic Networks

L. Pricing Sheets (separate volume)

& Data Templates

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
Building JN-1		
C052	7C2-B01	Survey & Monitor Pool/Transfer Canal
C052P	7C2-B01	PLAN: Survey & Monitor Pool/Transfer Canal
C073	7C2-B02	Survey & Monitor JN-1A/JN-1B Underground
C073P	7C2-B02	PLAN: Survey & Monitor JN-1A/JN-1B Underground
C177	7C2-B03	Survey & Monitor JN-1 Building Exterior (Office & Machine Shop Area)
C177P	7C2-B03	PLAN: Survey & Monitor JN-1 Building Exterior (Office & Machine Shop Area)
C141	7C2-B04	Survey and Monitor JN-1 Office & Machine Shop Area Underground after demo
C141P	7C2-B04	PLAN: Survey and Monitor JN-1 Office & Machine Shop Area Underground after demo
C096	7C41-B04	Remove High Level Cell/Low Level Cell Walls and Mezzanine using Diamond Wire
C096P	7C41-B04	PLAN: Remove High Level Cell/Low Level Cell Walls and Mezzanine using Diamond Wire
C150	7C41-B04	Remove Roof Section for HLC/LLC Wall removal
C150P	7C41-B04	PLAN: Remove Roof Section for HLC/LLC Wall removal
C079A	7C41-B05	Finish Removing Material from Hydraulic Room
C082	7C41-B06	Decon/Stabilize Hydraulic Room Surfaces
C082P	7C41-B06	PLAN: Decon/Stabilize Hydraulic Room Surfaces
C089	7C42-B01	Remove Material from Charpy Room
C089P	7C42-B01	PLAN: Remove Material from Charpy Room
C090	7C42-B02	Remove Charpy Room Utilities
C090P	7C42-B02	PLAN: Remove Charpy Room Utilities
C091	7C42-B02	Decon/Stabilize Charpy Room Surfaces
C091P	7C42-B02	PLAN: Decon/Stabilize Charpy Room Surfaces
C106	7C43-B01	Remove Alpha/Gamma Area Equipment and Utilities
C106P	7C43-B01	PLAN: Remove Alpha/Gamma Area Equipment and Utilities
C152	7C43-B01	Remove Top Layer of Floor and Drains/Sump in Alpha/Gamma Area
C152P	7C43-B01	PLAN: Remove Top Layer of Floor and Drains/Sump in Alpha/Gamma Area
C153	7C43-B01	Remove HEPA/Ductwork from Alpha/Gamma Area
C153P	7C43-B01	PLAN: Remove HEPA/Ductwork from Alpha/Gamma Area
C154	7C43-B01	Decon/Stabilize Alpha/Gamma Area
C154P	7C43-B01	PLAN: Decon/Stabilize Alpha/Gamma Area
C013	7C44-B02	Finish Removing Utilities from High Energy Cell and Cask Washdown Room
C014	7C44-B02	Decon/Stabilize High Energy Cell and Cask Washdown Room Surfaces
C014P	7C44-B02	PLAN: Decon/Stabilize High Energy Cell and Cask Washdown Room Surfaces
C155	7C44-B02	Remove Shielding Windows from the HEC
C155P	7C44-B02	PLAN: Remove Shielding Windows from the HEC
C156	7C44-B02	Remove Cranes from HEC
C156P	7C44-B02	PLAN: Remove Cranes from HEC
C157	7C44-B02	Remove HEC Door
C157P	7C44-B02	PLAN: Remove HEC Door
C185	7C44-B02	Stabilize/Modify HEC Ventilation System
C185P	7C44-B02	PLAN: Stabilize/Modify HEC Ventilation System
C188	7C44-B02	Isolate HEC Floor.Pool.Transfer Canal
C188P	7C44-B02	PLAN: Isolate HEC Floor.Pool.Transfer Canal
C108	7C44-B03	Remove High Energy Cell and Cask Washdown Room Walls using Diamond Wire
C108P	7C44-B03	PLAN Finish: Remove High Energy Cell & Cask Washdown Room Walls using Diamond Wire
C133	7C44-B04	TRU Packaging Location Removal
C133P	7C44-B04	PLAN: TRU Packaging Location Removal
C092	7C45-B02	Remove Material from CAA
C092P	7C45-B02	PLAN: Remove Material from CAA
C176	7C45-B02	Remove Material from Old Back Dock
C176P	7C45-B02	PLAN: Remove Material from Old Back Dock
C094	7C45-B03	Remove CAA Utilities
C094P	7C45-B03	PLAN: Remove CAA Utilities
C095	7C45-B03	Decon/Stabilize CAA Surfaces

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
C095P	7C45-B03	PLAN: Decon/Stabilize CAA Surfaces
C135	7C45-B04	Remove Evaporator Room Utilities
C135P	7C45-B04	PLAN: Remove Evaporator Room Utilities
C136	7C45-B04	Decon/Stabilize Evaporator Room Surfaces
C136P	7C45-B04	PLAN: Decon/Stabilize Evaporator Room Surfaces
C134	7C45-B05	Remove Material from Evaporator Room
C134P	7C45-B05	PLAN: Remove Material from Evaporator Room
C158	7C45-B06	Install new Water Processing System in High Bay Pump Room
C158P	7C45-B06	PLAN: Install new Water Processing System in High Bay Pump Room
C183	7C45-B06	Design new Water Processing System
C109	7C46-B01	Remove Staged Area and Miscellaneous Material from High Bay Area
C109P	7C46-B01	PLAN: Remove Staged Area and Miscellaneous Material from High Bay Area
C186	7C46-B01	Remove Manipulator Support Material from High Bay
C186P	7C46-B01	PLAN: Remove Manipulator Support Material from High Bay
C187	7C46-B01	Remove TRU Support Material from High Bay
C187P	7C46-B01	PLAN: Remove TRU Support Material from High Bay
C111	7C46-B02	Remove Utilities from High Bay Area
C111P	7C46-B02	PLAN: Remove Utilities from High Bay Area
C112	7C46-B02	Decon/Stabilize High Bay Area Surfaces
C112P	7C46-B02	PLAN: Decon/Stabilize High Bay Area Surfaces
C159	7C46-B02	Remove Lighting from High Bay Area
C159P	7C46-B02	PLAN: Remove Lighting from JN-1B High Bay Area
C048	7C46-B04	Remove Material and Stainless Steel Liner from Pool
C048P	7C46-B04	PLAN: Remove Material and Stainless Steel Liner from Pool
C160	7C46-B04	Remove Stainless Steel Liner from Transfer Canal
C160P	7C46-B04	PLAN: Remove Stainless Steel Liner from Transfer Canal
C162	7C46-B04	Decontaminate Pool Surfaces
C162P	7C46-B04	PLAN: Decontaminate Pool Surfaces
C163	7C46-B04	Decon/Stabilize Transfer Canal Surfaces
C163P	7C46-B04	PLAN: Decon/Stabilize Transfer Canal Surfaces
C190	7C46-B04	Stabilize Pool and Transfer Canal
C190P	7C46-B04	PLAN: Stabilize Pool and Transfer Canal
C054	7C46-B05	Perform Pool/Transfer Canal Decon Completion Survey
C036	7C46-B06	Remove Utilities from Pump Room
C036P	7C46-B06	PLAN: Remove Utilities from Pump Room
C037	7C46-B06	Decon/Stabilize Pump Room Surfaces
C037P	7C46-B06	PLAN: Decon/Stabilize Pump Room Surfaces
C165	7C46-B06	Remove Tanks from Pump Room
C166	7C46-B06	Remove new Water Processing System from Pump Room
C166P	7C46-B06	PLAN: Remove new Water Processing System from Pump Room
C191	7C46-B06	Remove Asbestos from Pump Room
C191P	7C46-B06	PLAN: Remove Asbestos from Pump Room
C145	7C46-B08	Remove Compaction Equipment from Pump Room
C145P	7C46-B08	PLAN: Remove Compaction Equipment from Pump Room
C029	7C47-B01	Remove Asbestos from Loading Dock and Alpha/Gamma Areas
C029P	7C47-B01	PLAN: Remove Asbestos from Loading Dock and Alpha/Gamma Areas
C030	7C47-B01	Remove Utilities, Piping, HVAC, Electrical and Crane Rails from Loading Dock Area
C030P	7C47-B01	PLAN: Remove Utilities, Piping, HVAC, Electrical and Crane Rails from Loading Dock
C033	7C47-B01	Remove Ventilation System from Loading Dock Area
C033P	7C47-B01	PLAN: Remove Ventilation System from Loading Dock Area
C098	7C47-B02	Remove Material from Old Operations Area
C098P	7C47-B02	PLAN: Remove Material from Old Operations Area
C099	7C47-B03	Remove Asbestos from Old Operations Area
C099P	7C47-B03	PLAN: Remove Asbestos from Old Operations Area

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
C100	7C47-B03	Remove Utilities from Old Operations Area
C100P	7C47-B03	PLAN: Remove Utilities from Old Operations Area
C101	7C47-B03	Remove Ventilation from Old Operations Area
C101P	7C47-B03	PLAN: Remove Ventilation from Old Operations Area
C169	7C47-B03	Remove Main Power Distribution Panel from Old Operations Area (COLD DARK BUILDING)
C169P	7C47-B03	PLAN: Remove Main Power Distribution Panel from Old Operations Area (COLD DARK BUILDING)
C103	7C47-B04	Remove Underground Drains from JN-1A Area
C103P	7C47-B04	PLAN: Remove Underground Drains from JN-1A Area
C115	7C47-B05	Remove Asbestos from JN-1B Area
C115P	7C47-B05	PLAN: Remove Asbestos from JN-1B Area
C116	7C47-B05	Remove Utilities and Stabilize Fan Room
C116P	7C47-B05	PLAN: Remove Utilities and Stabilize Fan Room
C040	7C47-B06	Remove Material from HEC Operations Area
C040P	7C47-B06	PLAN: Remove Material from HEC Operations Area
C042	7C47-B07	Remove Utilities from HEC Operations Area
C042P	7C47-B07	PLAN: Remove Utilities from HEC Operations Area
C118	7C47-B08	Remove Underground Drains from JN-1B Area
C118P	7C47-B08	PLAN: Remove Underground Drains from JN-1B Area
C170	7C47-B10	Remove Material from Mechanical Room
C170P	7C47-B10	PLAN: Remove Material from Mechanical Room
C171	7C47-B11	Remove Asbestos from Mechanical Room
C171P	7C47-B11	PLAN: Remove Asbestos from Mechanical Room
C174	7C47-B11	Finish Removing Underground Drains & Sump from Offices & Machine Shop Area
C056	7C47-B13	Remove Utilities from Waste Storage Shed
C056P	7C47-B13	PLAN: Remove Utilities from Waste Storage Shed
C175	7C47-B13	Remove Vault Door and Shield Walls from Waste Storage Shed
C175P	7C47-B13	PLAN: Remove Vault Door and Shield Walls from Waste Storage Shed
C070	7C47-B15	Remove NESHAPS Material from JN-1 Office and Machine Shop Area External Building
C070P	7C47-B15	PLAN: Remove NESHAPS Material from JN-1 Office and Machine Shop Area External Building
C071A	7C47-B16	Dismantle JN-1A/JN-1B Building and the Waste Storage Shed above grade and slab
C071AP	7C47-B16	PLAN: Dismantle JN-1A/JN-1B Building and the Waste Storage Shed above grade and slab
C071C	7C47-B16	Dismantle JN-1 Office & Machine Shop Area above grade and slab
C071CP	7C47-B16	PLAN: Dismantle JN-1 Office & Machine Shop Area above grade and slab
C180	7C47-B16	Dismantle JN-1 Office & Machine Shop Area below grade
C180P	7C47-B16	PLAN: Dismantle JN-1 Office & Machine Shop Area below grade
C181	7C47-B16	Stabilize JN-1 Office & Machine Shop Area after dismantle
C181P	7C47-B16	PLAN: Stabilize JN-1 Office & Machine Shop Area after dismantle
C182	7C47-B16	Dismantle JN-1A/JN-1B Building and Waste Storage Shed below grade
C182P	7C47-B16	PLAN: Dismantle JN-1A/JN-1B Building and Waste Storage Shed below grade
C075A	7C47-B17	Excavate JN-1A/JN-1B Underground
C075AP	7C47-B17	PLAN: Excavate JN-1A/JN-1B Underground
C075C	7C47-B17	Excavate JN-1 Office Area Underground
C075CP	7C47-B17	PLAN: Excavate JN-1 Office Area Underground
C076	7C47-B18	Perform JN-1A/JN-1B Underground Material Decon Completion Survey
C130	7C47-B19	JN-1 Office & Machine Shop Area Final Status Surveys before Dismantle
C178	7C47-B20	Decontaminate JN-1 Building Exterior (Office & Machine Shop Area)
C178P	7C47-B20	PLAN: Decontaminate JN-1 Building Exterior (Office & Machine Shop Area)
C179	7C47-B21	Perform JN-1 Building Exterior Completion Survey (Office & Machine Shop Area)
C142	7C47-B22	Perform JN-1 Office & Machine Shop Area Underground Remediation Completion Survey
CS007	7C5-B01	Prepare JN-1 Areas Characterization and Final Status Report
CS008	7C5-B01	Conduct JN-1 Areas IVC
CS008P	7C5-B01	PLAN: Conduct JN-1 Areas IVC
C131	7C5-B02	Conduct JN-1 Office & Machine Shop Area IVC before Dismantle
C131P	7C5-B02	PLAN: Conduct JN-1 Office & Machine Shop Area IVC before Dismantle

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
C140	7C5-B03	Prepare JN-1 Office & Machine Shop Area Characterization & Final Status Report
Building JN-2		
D006	7D2-B01	Survey & Monitor 2nd Floor
D006P	7D2-B01	PLAN: Survey & Monitor 2nd Floor
D020	7D2-B02	Survey & Monitor 1st Floor
D063	7D2-B03	Survey & Monitor External Building Surfaces (including Roof)
D067	7D2-B04	Prepare JN-2 Characterization and Final Status Report
D074	7D2-B05	Survey & Monitor Underground
D074P	7D2-B05	PLAN: Survey & Monitor Underground
D002	7D4-B01	Remove 2nd Floor Material
D002P	7D4-B01	PLAN: Remove 2nd Floor Material
D003	7D4-B02	Remove 2nd Floor Utilities, Hoods, Ducts and Piping
D003P	7D4-B02	PLAN: Remove 2nd Floor Utilities, Hoods, Ducts and Piping
D004	7D4-B02	Remove 1st and 2nd Floor Asbestos Material
D004P	7D4-B02	PLAN: Remove 1st and 2nd Floor Asbestos Material
D012	7D4-B03	Decontaminate 2nd Floor Surfaces
D012P	7D4-B03	PLAN: Decontaminate 2nd Floor Surfaces
D014	7D4-B04	Perform 2nd Floor Decon Completion Survey
D016	7D4-B06	Remove 1st Floor Material
D016P	7D4-B06	PLAN: Remove 1st Floor Material
D017	7D4-B07	Remove 1st Floor Utilities, Hoods, Ducts and Piping
D017P	7D4-B07	PLAN: Remove 1st Floor Utilities, Hoods, Ducts and Piping
D031	7D4-B07	Remove 1st Floor Boiler and Utilities
D031P	7D4-B07	PLAN: Remove 1st Floor Boiler and Utilities
D026	7D4-B08	Decontaminate 1st Floor Surfaces
D026P	7D4-B08	PLAN: Decontaminate 1st Floor Surfaces
D027	7D4-B08	Remove Underground Drains
D027P	7D4-B08	PLAN: Remove Underground Drains
D028	7D4-B09	Perform 1st Floor Decon Completion Survey
D061	7D4-B10	Remove Mechanical & Electrical Equipment from External Building Surfaces
D061P	7D4-B10	PLAN: Remove Mechanical & Electrical Equipment from External Building Surfaces
D069	7D4-B11	Decontaminate External Building Surfaces
D069P	7D4-B11	PLAN: Decontaminate External Building Surfaces
D070	7D4-B12	Perform External Building Surface Decon Completion Survey
D071	7D4-B13	Remove NESHAPS Material
D071P	7D4-B13	PLAN: Remove NESHAPS Material
D072	7D4-B14	Demolish Surface Structure
D072P	7D4-B14	PLAN: Demolish Surface Structure
D080	7D4-B15	Excavate Underground
D080P	7D4-B15	PLAN: Excavate Underground
D075	7D4-B16	Perform JN-2 Underground Remediation Completion Survey
D081	7D4-B17	JN-2 Final Status Surveys before Demolition
DS010	7D5-B01	Prepare JN-2 Areas Characterization and Final Status Report
DS011	7D5-B01	Conduct JN-2 Areas IVC
DS011P	7D5-B01	PLAN: Conduct JN-2 Areas IVC
D082	7D5-B02	JN-2 IVC before Demolition
D082P	7D5-B02	PLAN: JN-2 IVC before Demolition
Building JN-3		
E033	7E2-B05	Prepare JN-3 Characterization and Final Status Report
E037	7E2-B06	Survey & Monitor Underground
E037P	7E2-B06	PLAN: Survey & Monitor Underground
E051	7E2-B07	Survey and Monitor Remaining Surfaces

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
E051P	7E2-B07	PLAN: Survey and Monitor Remaining Surfaces
E062	7E2-B08	Survey and Monitor Mat Surface in Pool
E062P	7E2-B08	PLAN: Survey and Monitor Mat Surface in Pool
E014	7E4-B05	Remove Underground Drains and Dry Storage Wells
E014P	7E4-B05	PLAN: Remove Underground Drains and Dry Storage Wells
E034	7E4-B16	Remove NESHAPS Material
E034P	7E4-B16	PLAN: Remove NESHAPS Material
E035	7E4-B17	Demolish Surface Structure
E035P	7E4-B17	PLAN: Demolish Surface Structure
E039	7E4-B18	Excavate Underground Material
E039P	7E4-B18	PLAN: Excavate Underground Material
E040	7E4-B19	Perform JN-3 Underground Completion Survey
E050	7E4-B20	Remove Remaining Mechanical and Electrical Equipment from Building
E050P	7E4-B20	PLAN: Remove Remaining Mechanical and Electrical Equipment from Building
E052	7E4-B21	Decontaminate Remaining Surfaces
E052P	7E4-B21	PLAN: Decontaminate Remaining Surfaces
E053	7E4-B22	Perform Remaining Decon Completion Surveys
E055	7E4-B24	JN-3 Final Status Survey before Demolition
E055P	7E4-B24	PLAN: JN-3 Final Status Survey before Demolition
E059	7E4-B27	Remove Machine Shop Material and Utilities from JN-3 Annex
E059P	7E4-B27	PLAN: Remove Machine Shop Material and Utilities from JN-3 Annex
E061	7E4-B28	Remove Reactor Pool Floor
E061P	7E4-B28	PLAN: Remove Reactor Pool Floor
E063	7E4-B28	Remove Reactor Coolant Piping and Drain.Decon Mat
E063P	7E4-B28	PLAN: Remove Reactor Coolant Piping and Drain.Decon Mat
E060	7E4-B29	Remove Contaminated Column and Footer from Pump Room
E060P	7E4-B29	PLAN: Remove Contaminated Column and Footer from Pump Room
ES013	7E5-B01	Prepare JN-3 Areas Characterization & Final Status Report before Backfill of Site
ES014	7E5-B01	Conduct JN-3 Areas IVC
ES014P	7E5-B01	PLAN: Conduct JN-3 Areas IVC
E056	7E5-B02	JN-3 IVC before Demolition
E056P	7E5-B02	PLAN: JN-3 IVC before Demolition

External Areas

I005	7I2-B01	Survey and Release North Well House
I005P	7I2-B01	PLAN: Survey and Release North Well House
I014	7I2-B02	Survey and Monitor JN-6 Guardhouse & Emergency Generator
I014P	7I2-B02	PLAN: Survey and Monitor JN-6 Guardhouse & Emergency Generator
I056	7I2-B03	Survey and Monitor JN-1 Back Apron
I056P	7I2-B03	PLAN: Survey and Monitor JN-1 Back Apron
I062	7I2-B04	Survey and Monitor JN-1 Back Controlled Area
I068	7I2-B05	Survey and Monitor JN-1 Front of Building
I074	7I2-B06	Survey and Monitor JN-1 Diesel Fuel Storage Tank
I074P	7I2-B06	PLAN: Survey and Monitor JN-1 Diesel Fuel Storage Tank
I080	7I2-B07	Survey and Monitor JN-1 Dilution Sump
I080P	7I2-B07	PLAN: Survey and Monitor JN-1 Dilution Sump
I086	7I2-B08	Survey and Monitor JN-1 Lake Outfall Line
I098	7I2-B09	Survey and Monitor JN-2 Underground Tank and Sump
I121	7I2-B12	Survey and Monitor JN-3 Dilution Sump
I121P	7I2-B12	PLAN: Survey and Monitor JN-3 Dilution Sump
I135	7I2-B13	Survey and Monitor Storm Lines
I135P	7I2-B13	PLAN: Survey and Monitor Storm Lines
I195	7I2-B13	Survey and Monitor Sanitary Sewer Lines
I195P	7I2-B13	PLAN: Survey and Monitor Sanitary Sewer Lines

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
I142	7I2-B14	Survey and Monitor Road
I149	7I2-B14	Perform Walkover Survey and Hot Spot Sampling of 11.47 Acres Inside Fence
I149P	7I2-B14	PLAN: Perform Walkover Survey and Hot Spot Sampling of 11.47 Acres Inside Fence
I154	7I2-B16	Survey and Monitor JN-1 Lake Outfall
I161	7I2-B17	Survey and Monitor JN-1 Front Apron
I192	7I2-B20	Survey and Monitor the Abandoned North Filter Bed area after WIDE Demobilization
I192P	7I2-B20	PLAN: Survey and Monitor the Abandoned North Filter Bed area after WIDE Demobilization
I001	7I4-B01	Remove JN-3 Diesel Tank
I001P	7I4-B01	PLAN: Remove JN-3 Diesel Tank
I002	7I4-B01	Remove JN-1 Emergency Generator
I002P	7I4-B01	PLAN: Remove JN-1 Emergency Generator
I003	7I4-B01	Remove JNT-2 Break Trailor by JN-1
I003P	7I4-B01	PLAN: Remove JNT-2 Break Trailor by JN-1
I009	7I4-B01	Remove JN-2 Electric Substation
I009P	7I4-B01	PLAN: Remove JN-2 Electric Substation
I010	7I4-B01	Remove JN-2 Emergency Generator
I010P	7I4-B01	PLAN: Remove JN-2 Emergency Generator
I018	7I4-B01	Remove New Access Control Point Trailer
I018P	7I4-B01	PLAN: Remove New Access Control Point Trailer
I019	7I4-B01	Remove Sea/Lands
I019P	7I4-B01	PLAN: Remove Sea/Lands
I020	7I4-B01	Remove Temporary Transformer
I020P	7I4-B01	PLAN: Remove Temporary Transformer
I021	7I4-B01	Remove Breathing Air System behind JN-1
I021P	7I4-B01	PLAN: Remove Breathing Air System behind JN-1
I023	7I4-B01	Remove JN-1 Boneyard
I023P	7I4-B01	PLAN: Remove JN-1 Boneyard
I025	7I4-B02	Remove JN-1 Sheep Shed
I025P	7I4-B02	PLAN: Remove JN-1 Sheep Shed
I026	7I4-B02	Remove Storage Trailer by Break Trailer
I026P	7I4-B02	PLAN: Remove Storage Trailer by Break Trailer
I035	7I4-B02	Remove Dosimetry Trailer
I035P	7I4-B02	PLAN: Remove Dosimetry Trailer
I016	7I4-B04	Decontaminate JN-6 Guardhouse & Emergency Generator
I016P	7I4-B04	PLAN: Decontaminate JN-6 Guardhouse & Emergency Generator
I017	7I4-B05	Perform JN-6 Guardhouse & Emergency Generator Decon Completion Survey
I027	7I4-B06	Survey and Release Old Guardhouse
I027P	7I4-B06	PLAN: Survey and Release Old Guardhouse
I190	7I4-B07	Deployment of Wide System
I190P	7I4-B07	PLAN: Deployment of Wide System
I191	7I4-B07	Demobilize the WIDE System
I191P	7I4-B07	PLAN: Demobilize the WIDE System
I043	7I4-B08	Remediate Abandoned North Filter Beds
I043P	7I4-B08	PLAN: Remediate Abandoned North Filter Beds
I044	7I4-B09	Perform Abandoned North Filter Beds Completion Survey
I044P	7I4-B09	PLAN: Perform Abandoned North Filter Beds Completion Survey
I046	7I4-B10	Remediate Old Middle Filter Bed
I046P	7I4-B10	PLAN: Remediate Old Middle Filter Bed
I047	7I4-B11	Perform Old Middle Filter Bed Completion Survey
I049	7I4-B15	Remediate Active Middle Treatment System
I049P	7I4-B15	PLAN: Remediate Active Middle Treatment System
I050	7I4-B16	Perform Active Middle Treatment System Bed Completion Survey
I052	7I4-B17	Remediate Active North Filter Bed Area
I052P	7I4-B17	PLAN: Remediate Active North Filter Bed Area

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
I053	714-B18	Perform Active North Filter Bed Completion Survey
I054	714-B19	Locate JN-1 Back Apron Utilities
I058	714-B20	Remediate JN-1 Back Apron
I058P	714-B20	PLAN: Remediate JN-1 Back Apron
I059	714-B21	Perform JN-1 Back Apron Completion Survey
I064	714-B22	Remediate JN-1 Back Controlled Area
I064P	714-B22	PLAN: Remediate JN-1 Back Controlled Area
I065	714-B23	Perform JN-1 Back Controlled Area Completion Survey
I066	714-B24	Locate JN-1 Front of Building Utilities
I070	714-B25	Remediate JN-1 Front of Building
I070P	714-B25	PLAN: Remediate JN-1 Front of Building
I071	714-B26	Perform JN-1 Front Area Completion Survey
I076	714-B27	Remediate JN-1 Diesel Fuel Storage Tank
I076P	714-B27	PLAN: Remediate JN-1 Diesel Fuel Storage Tank
I077	714-B28	Perform JN-1 Diesel Fuel Storage Tank Completion Survey
I082	714-B29	Remediate JN-1 Dilution Sump
I082P	714-B29	PLAN: Remediate JN-1 Dilution Sump
I083	714-B30	Perform JN-1 Dilution Sump Completion Survey
I088	714-B31	Remediate JN-1 Lake Outfall Line
I088P	714-B31	PLAN: Remediate JN-1 Lake Outfall Line
I089	714-B32	Perform JN-1 Lake Outfall Line Completion Survey
I100	714-B34	Remediate JN-2 Underground Tank and Sump
I100P	714-B34	PLAN: Remediate JN-2 Underground Tank and Sump
I101	714-B35	Perform JN-2 Underground Tank and Sump Completion Survey
I118	714-B42	Perform JN-3 Reactor Coolant Pump Tank Completion Survey
I124	714-B43	Remediate JN-3 Dilution Sump
I124P	714-B43	PLAN: Remediate JN-3 Dilution Sump
I125	714-B44	Perform JN-3 Dilution Sump Completion Survey
I133	714-B45	Locate Storm Line Utilities
I138	714-B46	Remediate Storm Lines
I138P	714-B46	PLAN: Remediate Storm Lines
I193	714-B46	Stabilize and Leave in Place Sanitary Drain Under Dam
I193P	714-B46	PLAN: Stabilize and Leave in Place Sanitary Drain Under Dam
I196	714-B46	Remediate Sanitary Sewer Lines
I196P	714-B46	PLAN: Remediate Sanitary Sewer Lines
I139	714-B47	Perform Storm Lines Completion Survey
I197	714-B47	Perform Sanitary Sewer Lines Completion Survey
I143	714-B48	Relocate WJ North Utilities
I143P	714-B48	PLAN: Relocate WJ North Utilities
I145	714-B48	Remediate Road
I145P	714-B48	PLAN: Remediate Road
I146	714-B49	Perform Road Completion Survey
I151	714-B50	Remediate Remaining 11.47 Acres Inside Fence
I151P	714-B50	PLAN: Remediate Remaining 11.47 Acres Inside Fence
I152	714-B51	Perform Remaining 11.47 Acres Inside Fence Completion Survey
I156	714-B52	Remediate JN-1 Lake Outfall
I156P	714-B52	PLAN: Remediate JN-1 Lake Outfall
I157	714-B53	Perform JN-1 Lake Outfall Completion Survey
I163	714-B54	Remediate JN-1 Front Apron
I163P	714-B54	PLAN: Remediate JN-1 Front Apron
I164	714-B55	Perform JN-1 Front Apron Completion Survey
I165	714-B56	Plan and Remediate JN-10/11 Grounds (columns/sanitary tank)
I165P	714-B56	PLAN: Plan and Remediate JN-10/11 Grounds (columns/sanitary tank)
I176	714-B57	Build JN-4 Access Road

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
I176P	714-B57	PLAN: Build JN-4 Access Road
I179	714-B58	Remove Rad Lab Trailer
I179P	714-B58	PLAN: Remove Rad Lab Trailer
I184	714-B59	Remove Air Stations
I185	714-B59	Remove Wells
I185P	714-B59	PLAN: Remove Wells
I181	714-B60	Obtain and Install New Access Control Point
I181P	714-B60	PLAN: Obtain and Install New Access Control Point
I180	714-B61	Establish New Radioanalytical Laboratory (RAL)
I180A	714-B61	RAD Lab Trailer Leasing Costs
I180P	714-B61	PLAN: Establish New Radioanalytical Laboratory (RAL)
I182	714-B62	Backfill External Areas Inside Fence
I182P	714-B62	PLAN: Backfill External Areas Inside Fence
I183	714-B63	Remove Remaining West Jeff End-State Items
I183P	714-B63	PLAN: Remove Remaining West Jeff End-State Items
I198	714-B64	Develop JN-4 Isolation Plan
I198P	714-B64	PLAN: Develop JN-4 Isolation Plan
IG002	714-B65	Monitoring of wells and data analysis
IG007	714-B65	Dewatering of JN-3
IG011	714-B65	JN-1 dewatering
IG003	714-B66	Install water discharge/containment system for pumped water
IG004	714-B66	Install 10 pits into 885 layer
IG005	714-B66	Install 3 basal sand wells and 2 additional JN-3 dewatering wells
IG006	714-B66	Perform JN-3 pilot dewatering tests and drill Geoprobe borings
IG008	714-B66	Install 2 855 downgradient wells.5 downgradient 885 wells.JN1 3-well cluster
IG009	714-B66	Install JN-1 6 885 and 4 855 dewatering wells
IG010	714-B66	Perform JN-1 pilot dewatering tests and Geoprobe borings
IG012	714-B66	Disposition and abandonment of wells and discharge/containment system
I200	714-B67	Install Locker room/Break room/Rest room Trailer and lease
I200P	714-B67	PLAN: Install Locker room/Break room/Rest room Trailer and lease
IS004	715-B02	Prepare Filter Beds Area Characterization and Final Status Report
IS005	715-B02	Conduct Filter Beds Area IVC
IS005P	715-B02	PLAN: Conduct Filter Beds Area IVC
IS019	715-B04	Prepare General Inside Fence/Unaffected Areas Characterization/Final Status Report
IS020	715-B04	Conduct General Inside Fence/Unaffected Areas IVC
IS020P	715-B04	PLAN: Conduct General Inside Fence/Unaffected Areas IVC
IS021	715-B05	Prepare and Submit Certification Docket for West Jeff North Site

Waste Management

L05-03	122-A03	Hanford Processing and Disposal
L05-04	122-A04	Hanford Processing and Disposal
L05-05	122-A05	Hanford Processing and Disposal
L0505D	122-A05	JN-1 Demolition Waste: Hanford Processing and Disposal
L05-06	122-A06	Hanford Processing and Disposal
L0506D	122-A06	JN-1 Demolition Waste: Hanford Processing and Disposal
L06-03	122-B03	Envirocare Processing and Disposal
L06-04	122-B04	Envirocare Processing and Disposal
L06-05	122-B05	Envirocare Processing and Disposal
L0605D	122-B05	JN-1 Demolition Waste: Envirocare Processing and Disposal
L06-06	122-B06	Envirocare Processing and Disposal
L0606D	122-B06	JN-1 Demolition Waste: Envirocare Processing and Disposal
L09-03	122-D03	Perma-Fix / DSSI Processing and Disposal
L09-04	122-D04	Perma-Fix / DSSI Processing and Disposal
L09-05	122-D05	Perma-Fix / DSSI Processing and Disposal

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
L09-06	122-D06	Perma-Fix / DSSI Processing and Disposal
131A03	131-A03	Field Operations Management Planning and Development
131A04	131-A04	Field Operations Management Planning and Development
131A05	131-A05	Field Operations Management Planning and Development
131C06	131-A06	Field Operations Management Planning and Development
W005A	131-B01	Characterize TRU Waste
W006B	132-B01	Finish Packaging TRU Waste in Sonatol building
W023A	132-B02	Finish TRU Waste Management for Shipments to Hanford
W024A	132-B04	Finish Waste management operations support for loading pallets
W020A	132-B05	Finish loading pallets into the 10-160B cask (including vendor support)
W027A	132-B06	Finish transportation of TRU waste to Hanford
W050	132-B07	Hanford: Review Profiles and Approve
W051	132-B07	Hanford: Unload Pallets from Trucks and Load Pallets into Vaults
L01-03	133-A03	Maintain Non-TRU Waste Programs
L02-03	133-A03	Accept.Process and Package LLW Waste
L03-03	133-A03	Prepare Documents and Packages (LLW)
L04-03	133-A03	Ship LLW Waste
L01-04	133-A04	Maintain Non-TRU Waste Programs
L02-04	133-A04	Accept.Process and Package LLW Waste
L03-04	133-A04	Prepare Documents and Packages (LLW)
L04-04	133-A04	Ship LLW Waste
L01-05	133-A05	Maintain Non-TRU Waste Programs
L02-05	133-A05	Accept.Process and Package LLW Waste
L03-05	133-A05	Prepare Documents and Packages (LLW)
L0305D	133-A05	JN-1 Demolition Waste: Prepare Documents and Packages (LLW)
L04-05	133-A05	Ship LLW Waste
L0405D	133-A05	JN-1 Demolition Waste: Ship LLW Waste
L01-06	133-A06	Maintain Non-TRU Waste Programs
L02-06	133-A06	Accept.Process and Package LLW Waste
L03-06	133-A06	Prepare Documents and Packages (LLW)
L0306D	133-A06	JN-1 Demolition Waste: Prepare Documents and Packages (LLW)
L04-06	133-A06	Ship LLW Waste
L0406D	133-A06	JN-1 Demolition Waste: Ship LLW Waste
L10-03	133-E03	Transportation of Waste to Disposal Sites
L10-04	133-E04	Transportation of Waste to Disposal Sites
L10-05	133-E05	Transportation of Waste to Disposal Sites
L1005D	133-E05	JN-1 Demolition Waste: Transportation of Waste to Disposal Sites
L10-06	133-E06	Transportation of Waste to Disposal Sites
L1006D	133-E06	JN-1 Demolition Waste: Transportation of Waste to Disposal Sites
L11-03	133-F03	LLW Disposed IP-2/7A Boxes
L11-04	133-F04	LLW Disposed IP-2/7A Boxes
L11-05	133-F05	LLW Disposed IP-2/7A Boxes
L1105D	133-F05	JN-1 Demolition Waste: LLW Disposed IP-2/7A Boxes
L11-06	133-F06	LLW Disposed IP-2/7A Boxes
L1106D	133-F06	JN-1 Demolition Waste: LLW Disposed IP-2/7A Boxes

Other Areas

222A03	222-B03	Regulatory Compliance
222B04	222-B04	Regulatory Compliance
222B05	222-B05	Regulatory Compliance
222B06	222-B06	Regulatory Compliance
23-03	23-B03	Institutional Relations
23-04	23-B04	Institutional Relations
23-05	23-B05	Institutional Relations

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
23-06	23-B06	Institutional Relations
24-03	24-B03	Environmental Safety and Health Oversight
24-04	24-B04	Environmental Safety and Health Oversight
24-05	24-B05	Environmental Safety and Health Oversight
24-06	24-B06	Environmental Safety and Health Oversight
511A03	511-B03	JN-1 Office & Shop Surveillance & Maintenance Planning and Development
511B03	511-B03	JN-1 Original Building Surveillance & Maintenance Planning and Development
511C03	511-B03	JN-1 High Bay Surveillance & Maintenance Planning and Development
511D03	511-B03	JN-2 Surveillance & Maintenance Planning and Development
511E03	511-B03	JN-3 Surveillance & Maintenance Planning and Development
511B04	511-B04	JN-1 Original Building Surveillance & Maintenance Planning and Development
511C04	511-B04	JN-1 High Bay Surveillance & Maintenance Planning and Development
511D04	511-B04	JN-2 Surveillance & Maintenance Planning and Development
511E04	511-B04	JN-3 Surveillance & Maintenance Planning and Development
513A03	513-A03	JN-1 Office & Shop Surveillance & Maintenance Inspection and Maintenance
513B03	513-A03	JN-1 Original Building Surveillance & Maintenance Inspection and Maintenance
513C03	513-A03	JN-1 High Bay Surveillance & Maintenance Inspection and Maintenance
513D03	513-A03	JN-2 Surveillance & Maintenance Inspection and Maintenance
513E03	513-A03	JN-3 Surveillance & Maintenance Inspection and Maintenance
513B04	513-A04	JN-1 Original Building Surveillance & Maintenance Inspection and Maintenance
513C04	513-A04	JN-1 High Bay Surveillance & Maintenance Inspection and Maintenance
513D04	513-A04	JN-2 Surveillance & Maintenance Inspection and Maintenance
513E04	513-A04	JN-3 Surveillance & Maintenance Inspection and Maintenance
513F03	513-D03	West Jefferson Surveillance & Maintenance TLD/Bioassay
513F04	513-D04	West Jefferson Surveillance & Maintenance TLD/Bioassay
513G03	513-G03	West Jeff S&M Radioanalytical Lab (RAL) Support
513G04	513-G04	West Jeff S&M Radioanalytical Lab (RAL) Support
52-A03	52-B03	Collect Environmental Samples
52-B03	52-B03	TLDs and Bioassays
52-C03	52-B03	Interpret Results
52-D03	52-B03	Generate Annual Site Environmental Report
52-A04	52-B04	Collect Environmental Samples
52-B04	52-B04	TLDs and Bioassays
52-C04	52-B04	Interpret Results
52-D04	52-B04	Generate Annual Site Environmental Report
52-B05	52-B05	TLDs and Bioassays
52-D05	52-B05	Generate Annual Site Environmental Report
52-F05	52-B05	Collect Environmental Samples
52-B06	52-B06	TLDs and Bioassays
52-D06	52-B06	Generate Annual Site Environmental Report
52-F06	52-B06	Collect Environmental Samples
52-D07	52-B07	Generate Annual Site Environmental Report
52-G07	52-B07	Collect Environmental Samples
52-H03	52-H03	West Jeff Environmental Monitoring Radioanalytical Lab (RAL) Support
52-H04	52-H04	West Jeff Environmental Monitoring Radioanalytical Lab (RAL) Support
52-J05	52-H05	West Jeff Environmental Monitoring Radioanalytical Lab (RAL) Support
52-J06	52-H06	West Jeff Environmental Monitoring Radioanalytical Lab (RAL) Support
53-B03	53-B03	DOE Support Services
53-B04	53-B04	DOE Support Services
53-A05	53-B05	DOE Support Services
53-A06	53-B06	DOE Support Services
611B03	611-B03	Project Management and Administration
611B04	611-B04	Project Management and Administration
611B05	611-B05	Project Management and Administration

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
611B06	611-B06	Project Management and Administration
611B07	611-B07	Project Management and Administration
612A03	612-B03	Project Administration / Strategic Planning
612A04	612-B04	Project Administration / Strategic Planning
612A05	612-B05	Project Administration / Strategic Planning
612C06	612-B06	Project Administration / Strategic Planning
613A03	613-A03	Project Administration Control - Cost Control/Scheduling/Estimating
613A04	613-A04	Project Administration Control - Cost Control/Scheduling/Estimating
613B05	613-A05	Project Administration Control - Cost Control/Scheduling/Estimating
613B06	613-A06	Project Administration Control - Cost Control/Scheduling/Estimating
613C07	613-A07	Project Administration Control - Cost Control/Scheduling/Estimating
613G03	613-B03	Project Records Management/Document Control
613G04	613-B04	Project Records Management/Document Control
613G05	613-B05	Project Records Management/Document Control
613H06	613-B06	Project Records Management/Document Control
613H07	613-B07	Project Records Management/Document Control
613D03	613-E03	Purchasing Fields Resources Support
613D04	613-E04	Purchasing Fields Resources Support
613E05	613-E05	Purchasing Fields Resources Support
613F06	613-E06	Purchasing Fields Resources Support
65-03	65-B03	Quality Program
65-04	65-B04	Quality Program
65-05	65-B05	Quality Program
65-06	65-B06	Quality Program
65-07	65-B07	Quality Program
781B03	781-B03	West Jefferson Decontamination Management Planning and Development
781B04	781-B04	West Jefferson Decontamination Management Planning and Development
781B05	781-B05	West Jefferson Decontamination Management Planning and Development
781B06	781-B06	West Jefferson Decontamination Management Planning and Development
781C03	781-C03	BCLDP Technician Subcontract Administration
781C04	781-C04	BCLDP Technician Subcontract Administration
781C05	781-C05	BCLDP Technician Subcontract Administration
781D03	781-D03	WJ Demolition Planning and Special Projects
781D04	781-D04	WJ Demolition Planning and Special Projects
781D05	781-D05	WJ Demolition Planning and Special Projects
781E06	781-D06	WJ Demolition Planning and Special Projects
782A03	782-B03	Decontamination Training
782A04	782-B04	Decontamination Training
782B05	782-B05	Decontamination Training
782C06	782-B06	Decontamination Training
783C03	783-A03	Characterization Management Planning and Development
783C04	783-A04	Characterization Management Planning and Development
783C05	783-A05	Characterization Management Planning and Development
783C06	783-A06	Characterization Management Planning and Development
783D07	783-A07	Characterization Management Planning and Development
783B03	783-B03	West Jefferson Radioanalytical Lab (RAL)
783B04	783-B04	West Jefferson Radioanalytical Lab (RAL)
783E05	783-B05	West Jefferson Radioanalytical Lab (RAL)
783F06	783-B06	West Jefferson Radioanalytical Lab (RAL)
784A03	784-A03	Radiation Protection
784A04	784-A04	Radiation Protection
784B05	784-A05	Radiation Protection
784C06	784-A06	Radiation Protection
784G03	784-B03	TLD's and Bioassays

BCLDP Baseline: Activity ID / Work Package Matrix

Open Plan ID	Work Package Number	Description
784G04	784-B04	TLD's and Bioassays
784H05	784-B05	TLD's and Bioassays
784H06	784-B06	TLD's and Bioassays
784K03	784-C03	Health and Safety Meetings and Training
784L03	784-C03	Health and Safety Oversight Associated with JN-1 Office Area
784M03	784-C03	Health and Safety Oversight Associated with JN-1A Area and WSS
784N03	784-C03	Health and Safety Oversight Associated with JN-1B
784P03	784-C03	Health and Safety Oversight Associated with JN-2
784Q03	784-C03	Health and Safety Oversight Associated with JN-3
784R03	784-C03	Health and Safety Oversight Associated with External Areas
784K04	784-C04	Health and Safety Meetings and Training
784M04	784-C04	Health and Safety Oversight Associated with JN-1A Area and WSS
784N04	784-C04	Health and Safety Oversight Associated with JN-1B
784P04	784-C04	Health and Safety Oversight Associated with JN-2
784Q04	784-C04	Health and Safety Oversight Associated with JN-3
784R04	784-C04	Health and Safety Oversight Associated with External Areas
784K05	784-C05	Health and Safety Meetings and Training
784M05	784-C05	Health and Safety Oversight Associated with JN-1A Area and WSS
784N05	784-C05	Health and Safety Oversight Associated with JN-1B
784R05	784-C05	Health and Safety Oversight Associated with External Areas
784K06	784-C06	Health and Safety Meetings and Training
784R06	784-C06	Health and Safety Oversight Associated with External Areas
784J03	784-D03	Emergency Preparedness
784J04	784-D04	Emergency Preparedness
784J05	784-D05	Emergency Preparedness
784J06	784-D06	Emergency Preparedness
784S03	784-E03	Radiation Protection Operations
784S04	784-E04	Radiation Protection Operations
784S05	784-E05	Radiation Protection Operations
784T06	784-E06	Radiation Protection Operations
784F03	784-F03	Radiation Protection - Regulatory Activities.Inspections and Fees
784F04	784-F04	Radiation Protection - Regulatory Activities.Inspections and Fees
784E05	784-F05	Radiation Protection - Regulatory Activities.Inspections and Fees
784F06	784-F06	Radiation Protection - Regulatory Activities.Inspections and Fees
784E07	784-F07	Radiation Protection - Regulatory Activities.Inspections and Fees
787A03	787-B03	Laundry/Respirator Support
787A04	787-B04	Laundry/Respirator Support
787A05	787-B05	Laundry/Respirator Support
787A06	787-B06	Laundry/Respirator Support

BCLDP Baseline, Revision 3

Contingency Analysis

Basis for Including Contingency

The basis for including contingency in the BCLDP baseline cost estimate is founded on the following Department of Energy (DOE) directives:

- DOE Order 413.3, *Program and Project Management for the Acquisition of Capital Assets*, dated October 13, 2000, is the governing directive for managing the acquisition of all capital assets, including decommissioning and disposing of those capital assets at the end of their useful life cycle. Although this directive does not specifically address contingency, it does incorporate the requirements of DOE Order 430.1A (see below) by reference.
- DOE Order 430.1A, *Life Cycle Asset Management*, revision dated October 14, 1998, requires contingencies be included in baselines. Section 6e(7)(b)2 of the Order states that scope, schedule, and cost baselines, including contingencies [emphasis added], shall be included, as a minimal requirement, in project planning for approval prior to commencement of project execution.
- DOE Guide 430.1-1, *Cost Estimating Guide*, dated March 28, 1997, was originally issued to serve as a companion to DOE Order 5700.2, *Cost Estimating, Analysis, and Standardization*, which was superseded by DOE Order 430.1A. The Guide, however, remains in effect for the purpose of improving the quality of cost estimates and strengthens the DOE program/project management system by providing uniform cost estimating methods. Chapter 11 of the Guide provides a standard approach for determining project contingency, and it specifically addresses contingency for environmental restoration projects separately from construction and other types of projects. Chapter 15 of the Guide presents and discusses various types of cost estimates that are acceptable to the DOE.

DOE Contingency and Cost Estimating Guidelines for Environmental Projects

As stated in DOE Guide 430.1-1, contingency plays a major role in the cost estimates for Environmental Restoration projects (which includes Facility Disposition Projects). Chapter 11 of the Guide contains a mandatory requirement for developing a written contingency analysis and estimate, and then maintaining the information in the estimate documentation file. However, the Guide offers considerable latitude for estimators and managers in applying the contingency analysis specifications. For example, estimators may simply use the ranges provided in the cost guide for estimating contingency on small projects; whereas, larger projects require a more detailed analysis, such as risk analysis, Monte Carlo analysis, etc. Table 11-3 of the Guide lists the contingency range guidelines

for the standard phases of environmental restoration projects. The information contained in Table 11-3 is presented below.

DOE G 430.1-1, Table 11-3, Contingency Guidelines for Environmental Restoration Projects	
Activity and Estimate Type	Expected Contingency Range
Contingency Guidelines for Assessment Phase	
Preliminary Assessment/Site Investigation Planning Estimate for all Assessment Activities	Up to 100%
Preliminary Estimate for All Assessment Activities	30% to 70%
Remedial Investigation/Feasibility Study Detailed Estimate for All Assessment Activities	15% to 55%
Planning Estimate for All Cleanup Phase Activities	20% to 100%
Contingency Guidelines for Remediation/Cleanup Phase	
Pre-Design Preliminary Estimate for All Remediation/Cleanup Phase Activities	Up to 50%
Remedial Design and Action Detailed Estimate for All Remediation/Cleanup Phase Activities	0% to 25%

In addition, Chapter 15 of DOE Guide 430.1-1 discusses several techniques that are recognized for estimating the cost of a project. Based on the project's scope, the purpose of the estimate, and the availability of estimating resources, the estimator can choose one or a combination of techniques when estimating an activity or a project. The following briefly describes techniques that can be used to estimate project costs.

- **Bottoms-Up Technique.** Generally, a work statement and set of drawings or specifications are used to "take off" material quantities required to perform each discrete task performed in accomplishing a given operation or producing an equipment component. From these quantities, direct labor, equipment, and overhead costs are derived and added. This technique is used as the level of detail for the project increases.
- **Specific Analogy Technique.** Specific analogies depend upon the known cost of an item used in prior systems as the basis for the cost of a similar item in a new system. Adjustments are made to known costs to account for differences in relative complexities of performance, design, and operational characteristics.
- **Parametric Technique.** Parametric estimating requires historical data bases on similar systems or subsystems. Data is derived from the historical information or is developed from building a model scenario. Statistical analysis is performed on the data to find correlations between cost drivers and other system parameters, such as design or performance parameters. The analysis produces cost equations or cost estimating relationships that can be used individually or grouped into more complex models. This technique is useful when the information available is not very detailed.

- **Cost Review and Update Technique.** An estimate is constructed by examining previous estimates of the same project for internal logic, completeness of scope, assumptions, and estimating methodology and updating them with any changes.
- **Trend Analysis Technique.** A contractor efficiency index is derived by comparing originally projected contract costs against actual costs on work performed to date. The index is used to adjust the cost estimate of work not yet completed.
- **Expert Opinion Technique.** When other techniques or data are not available, this method may be used. Several specialists can be consulted repeatedly until a consensus cost estimate is established.

Finally, DOE Order 413.3 states that the directive principles will be applied on a tailored basis (also known as a graded approach). In a tailored approach, project documentation requirements are applied to a level of detail based on the size, risk, and complexity of a project. The use of tailoring must be stated in the appropriate documents.

Discussion and Conclusion

Review of the pertinent DOE directives and associated guidelines indicates that the BCLDP cost baseline should include contingency. This is confirmed in the December 14, 2000, Baseline Review Final Report produced by the DOE Office of Environmental Management, Office of Project Management (EM-6), which stated, "It is not appropriate to plan a project such as BCLDP without inclusion of cost and schedule contingency allowances."

The project has progressed beyond the Combined Critical Decision 1 and Critical Decision 2 (CD-1/CD-2) point as described for a Facility Disposition Project in DOE Order 413.3, and is well into the Project Execution Phase. Therefore, the expected contingency range that should be applied to the BCLDP would be 0% to 25% (Remedial Design and Action and Detailed Estimate for All Remediation/Cleanup Phase Activities).

The BCLDP is a relatively small project (well under the \$400 million threshold to be considered as a Major System Project as defined in DOE Order 413.3). Although the BCLDP has identified uncertainties and risks that are inherent with Facility Disposition Projects, those uncertainties and risks are appropriately addressed in the Risk Management Plan (Section M).

During development of the Draft-Final BCLDP Baseline (July 31, 2001) a structured process, based on hierarchical decomposition, was used to identify, define and analyze all required activities contained in the revised baseline. That effort resulted in establishing a contingency of approximately 20%. During the baseline review by the DOE Headquarters Independent Cost Estimate (ICE) Review team, the team indicated that in their professional opinion the 20% contingency was excessive for the phase to which the project has progressed. The ICE team also performed an abbreviated Monte Carlo

contingency simulation and concluded that a contingency of 10.9% is a realistic contingency factor for the BCLDP.

Based on the DOE contingency and cost estimating guidelines and the conclusions presented above, an across-the-board contingency of 10% is applied to the BCLDP baseline, as an unbudgeted cost, without further contingency analysis for the following reasons:

- Applying a contingency without detailed (e.g. Monte Carlo) analysis is consistent with the latitude permitted under DOE Guide 430.1-1 for small projects. It will result in avoiding between \$100,000 and \$200,000 that would be required to perform a detailed Monte Carlo or similar type analysis.
- The contingency of approximately 10% recommended by the ICE team is within the expected contingency range for the appropriate project phase as presented in Table 11-3, DOE Guide 430.1-1.
- Taking this tailored approach and applying the Expert Opinion Technique are consistent with DOE Order 413.3.

BCLDP Baseline, Revision 3

Risk Management Plan

Introduction

This Risk Management Plan identifies risks that can significantly affect the ability to achieve the objectives described in Section B. These risks generally originate from (a) the completeness of data and the reliability of the available data regarding the contamination levels and types of waste, and (b) the assumptions made during the planning of project activities.

Risk management is an ongoing process throughout the BCLDP life cycle. Initial and subsequent risk assessment iterations were guided by a series of assumptions that could have implications for the entire BCLDP. These assumptions are contained in the data templates and other baseline documentation, and are updated as necessary. In general, the BCLDP approach is to focus on planned activities with high uncertainties wherein stated assumptions, if found to be untrue, could have significant impacts on the project cost and/or schedule.

Identified Risks and Corresponding Mitigation Plans

The following table presents the BCLDP work elements that represent significant cost and/or schedule risk to the project, along with discussions of potential impacts. Also presented are the actions that are planned or being implemented for reducing, avoiding, transferring, or accepting, as appropriate, the identified risks.

Identified Risks and Mitigation Plans	
Risks and Potential Impacts	Mitigation Actions
The Waste Isolation Pilot Plant (WIPP), the ultimate destination for BCLDP transuranic (TRU) waste, is unable to receive remote-handled TRU waste in sufficient time to meet the needs of the project. The current schedule requires TRU shipments be completed by March 28, 2003, well before the anticipated date for WIPP permit approval. Additionally, only a narrow window of schedule lag-time for this activity exists in the baseline; if the final TRU waste shipments are not completed by August 5, 2003, a day-for-day delay of the project critical path will occur until the final shipments are made. This remains the highest risk to the project.	Interim storage at a designated DOE site is absolutely essential to achieving BCLDP closure by the end 2006. This is currently being pursued with the DOE Hanford Site, and appears to be progressing well at this time. To address the possibility that the Hanford Site will not be able to provide interim storage or is unable to establish timely agreements with regulatory agencies, plans are in place to relocate the TRU waste from Building JN-1 to JN-3 in order to minimize impacts to the critical path (JN-1 decontamination and demolition). However, it must be pointed out that this is a costly work-around option that only delays the risk impact rather than mitigating it.

Identified Risks and Mitigation Plans	
Risks and Potential Impacts	Mitigation Actions
<p>Groundwater incursion appears to be occurring in the below-grade areas of Buildings JN-1 and JN-3. The reasons for this and the potential impact on the decontamination and demolition of the below-grade structures are not fully understood. Adverse impacts to both cost and schedule could result if current assumptions are found to be incorrect.</p>	<p>The final baseline includes an in depth study aimed at developing (1) a sufficient understanding of the groundwater situation and (2) a definitive plan for dewatering the below-grade structures during demolition. The resulting approach will be implemented for Building JN-3 first to identify any lessons-learned, which will be applied when the approach is implemented for the more complex Building JN-1.</p>
<p>The engineered cost estimate for demolishing Building JN-1 is considered to be a reasonable estimate for this critical path activity. However, the estimate is based on a total of 59 conditions, assumptions, and other considerations that were identified in the <i>Preliminary Engineered Cost Estimate for Demolition of Building JN-1</i>, dated April 30, 2001. This activity is a high cost element of the baseline, and the uncertainty of the degree of risk posed by the large number of assumptions, etc., could result in unforeseen increases in the actual cost of the activity.</p>	<p>During FY 2002, the contractor that developed the cost estimate was commissioned, in conjunction with Battelle risk assessment experts, to evaluate the extent of risk associated with each of the 59 identified items. The risk assessment identified eight items as potential high-risk areas, and an additional eight items were evaluated to have a small impact on the demolition cost but a potentially large impact on the overall BCLDP (see the enclosed <i>Risk Assessment, JN-1 Demolition Project Cost Estimate</i>, dated June 18, 2002). During FY 2003, the recommendations contained in the risk assessment report will be implemented.</p>
<p>Exterior Area surface soils have not been fully characterized to determine extent of contamination. This is due largely to the amount of radiological "shine" in areas adjacent to the existing buildings. Currently, additional characterization is planned late in the project when the facility demolition is nearing completion to permit accurate assessment. This could have significant impacts on both cost and schedule if current assumptions are found to be incorrect.</p>	<p>Technologies may exist that can "filter" out, or adjust for, background and/or "shine" radiological readings. These technologies will be investigated during FY 2003. If proven to be effective, they will be used to accelerate the remaining soil characterization activities currently in the baseline. By implementing this action, any assumptions that prove to be incorrect can be addressed while sufficient time still remains on the project for mitigation activities to be effective.</p>
<p>Although contingency is included in the baseline, it is an unbudgeted cost item. The project schedule could be impacted if contingency funds are not readily available to address scope evolution/definition changes, changes in requirements, and/or uncertainties in estimating the exact cost of individual project activities.</p>	<p>Essentially, this is a recognized risk for which specific mitigation plans will be developed on an as-needed basis. At the time of any occurrence that would affect the project due to the lack of readily available contingency funds, appropriate steps will be taken to minimize impacts to the project end point. This could include such steps as requesting additional funding through DOE channels, delaying planned non-critical path activities to ensure sufficient funds are available for critical path activities, etc.</p>

RISK ASSESSMENT

**JN-1 DEMOLITION PROJECT
COST ESTIMATE**

JUNE 18, 2002

The Chamberlain Group, Ltd.

RISK ASSESSMENT JN-1 DEMOLITION COST ESTIMATE

Executive Summary

A total of 59 conditions, assumptions, and other considerations were identified in the *Preliminary Engineered Cost Estimate for Demolition of Building JN-1*, dated April 30, 2001. Eight of these items were identified as potential high-risk areas. Three of these items were evaluated and assigned an estimated risk value as follows:

- All remaining radiological contamination on accessible surfaces is fixed (i.e., no loose or smearable contamination). – **Estimated risk = \$ 80K.**
- Three four-man demolition crews will be used. – **Estimated risk = \$ 70K.**
- Rooftop mechanical equipment, such as building HVAC exhaust fans, chillers, ductwork and piping is radioactively clean. – **Estimated risk = \$ 15K.**

Estimating the risk value of the other five items was beyond the scope of this effort, but could be addressed in future studies. These five items are summarized as follows:

- The pool liner has been removed, and the independent survey of the remaining concrete surface completed and approved.
- Groundwater incursion can be controlled and dispositioned using a water treatment system consisting of pumps, a settling pond, and holding tanks.
- No special permits (air, water, etc.) or notifications to local jurisdictions are required by the contractor to support demolition.
- all hot-cell walls above the first floor have been previously removed and are not part of building demolition.
- Tanks and pit liners will have been removed by Battelle....

Eight additional items, which were evaluated to have a small impact on the demolition cost but a potentially large impact on the overall BCLDP and considered worthy of additional consideration, are summarized as follows:

- Use of conventional demolition techniques for radiologically contaminated structures (i.e., requires use of engineered containments) are all that are required for demolition. Use of temporary shielding will not be needed for demolition operations.

- Soils and remaining concrete that may be contaminated at the -14 ft. level and below are outside the scope of the cost estimate.
- Battelle will have previously removed all drains and sewer lines within the building footprint.
- Final status survey operations will be performed, and subsequent regulatory approvals will be received, in a timely manner....and will result in only minimal interruptions....
- The planned use of “clean area protective covers” will be sufficient to prevent the spread of contamination back into previously cleaned areas....
- The end condition of the dismantlement project is removal of all structures (concrete and utilities) to a depth of minus 14 ft. below grade and backfill to ground level....
- Interior ductwork will have been 100% removed by Battelle prior to demolition.
- JN-1B will be demolished as a radiologically contaminated facility.

RISK ASSESSMENT JN-1 DEMOLITION COST ESTIMATE

Introduction

This report documents the approach and results of an assessment of the perceived risks associated with the JN-1 hot-cell facility demolition cost estimate. The demolition cost estimate was derived using a set of conditions and assumptions to define the anticipated starting conditions, building radiological status, demolition requirements, and other considerations affecting cost and schedule. A total of 59 such items were identified in the demolition cost estimate.

This assessment is intended to evaluate the extent of risk associated with each of the 59 identified items and to identify those items that pose a significant risk of impacting the actual cost of demolition. This activity served only to identify the areas of high risk. No effort to develop mitigating actions was undertaken.

Each of the items was evaluated as explained in Section 1.0. Section 2.0 of this report lists those items identified by the evaluation as posing significant risk of impacting the resulting cost of demolition. Section 3.0 provides an assessment of the cost impact associated with the high-risk items identified in Section 2.0. Some recommendations for further actions are discussed in Section 4.0.

Assessment of Conditions, Assumptions, and Other Considerations

Assumptions associated with the JN-1 Demolition Cost Estimate were gleaned from the Chamberlain prepared "Preliminary Engineered Cost Estimate", dated April 30, 2001. These assumptions (59 total items) were evaluated and assigned a value (High, Moderate, Low) for each of two aspects,

- Impact if Not True (see Table 1).
- Probability of Being Not True (see Table 2).

Table 1 – Categorization of Impact	
Value	Estimated Impact if Not True
High	Increase In Cost Of JN-1 Demolition Equals Or Exceeds \$100K
Moderate	Increase In Cost Of JN-1 Demolition Equals Or Exceeds \$10K, But Less Than \$100K
Low	Increase In Cost Of JN-1 Demolition is Less Than \$10K

Table 2 – Categorization of Probability		
Value	Probability Factor	Description
High	.75	Expect Assumption Will Not be True
Moderate	.50	Uncertain About Assumption; Could Go Either Way
Low	.25	Expect Assumption Will be True

The attached Table 3 contains the results of subjectively assessing each of the 59 items with respect to the values in Tables 1 and 2. This assessment took into account both the potential for the assumption to be false and the resultant cost impact, and the results are shown in Figure 1.

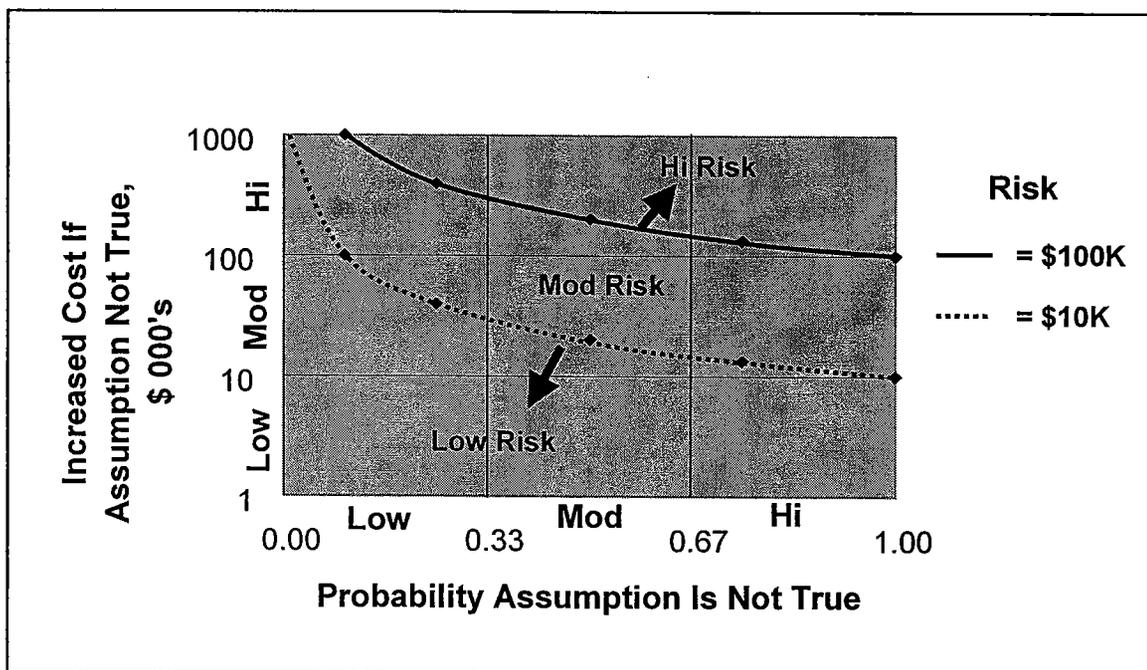


Figure 1 – Risk Assessment Matrix

Potential High-Risk Areas

None of the 59 items identified in Table 3 were evaluated as High/High. However, eight of the items were evaluated as either High/Moderate or Moderate/High. The attached Table 4A lists these eight items.

During the evaluation it was noted that some items, if not true, would result in a small impact to the demolition project cost, however, the impact to the overall BCLDP project could be great. These items were considered worthy of additional attention. For information, these eight items are listed in attached Table 4B.

Table 4A and Table 4B items are listed in the order in which they appeared in Table 3. For reference, Table 3 item identification numbers are included in parentheses in the Table 4A & 4B Item Descriptions.

Assessment of Risk

The eight high-risk items identified in Table 4A were further assessed to determine the estimated cost impact to the demolition project. No attempt was made to determine or assign a cost impact for the eight Table 4B informational items.

The attached Table 5 identifies the assessed cost risk for the eight high-risk items. Table 5 items are listed in order of decreasing cost impact. For reference, Table 4A item identification numbers are included in parentheses in the Table 5 Item Descriptions.

This evaluation of assessed risk was determined by multiplying the estimated demolition cost value of the item by the probability factor. The estimated demolition cost value was derived directly from the JN-1 Demolition Cost estimate as applicable. The probability ratings of Low, Moderate, and High were assigned percentage factors of 25%, 50%, and 75% respectively as shown in Table 2. The potential cost impact for an item was then determined by multiplying its estimated demolition cost value by its assessed probability factor.

Not all of the assumptions, however, correspond directly with cost estimate line items. Assessment of five of the eight items resulted in their characterization as “Special Concerns”. These Special Concern items require additional consideration during project planning and/or investigation to provide sufficient data to properly assess their impact. These five items are each discussed below. The items are identified below using their ID numbers as shown in Table 5.

Item 1. (See Item 4 of Table 4A – addresses removal of the pool liner and subsequent release of the remaining concrete surface.) Any portion of this assumption being false will result in an entirely new additional work scope for the BCLDP and/or the demolition project. This assumption highlights a special concern that should be addressed in overall project approach and planning. Potential cost impact of much greater than \$100,000 is possible.

Item 2. (See Item 7 of Table 4A – addresses groundwater incursion, its treatment and disposal.) Any portion of this assumption being false will result in an entirely new additional work scope for the BCLDP and/or the demolition project. This assumption highlights a special concern that should be addressed in the overall project approach and planning. Potential cost impact of much greater than \$100,000 is possible.

Item 6. (See Item 8 of Table 4A – concerns the need for special permits and notifications.) Insufficient information is available to assess the cost impact of this item. This assumption should be evaluated as a part of overall project planning.

Item 7. (See Item 2 of Table 4A – concerns the removal of above ground hot-cell structures by Battelle prior to the demolition project.) Shifting this workscope to the demolition project will have no impact on the overall BCLDP cost.

Item 8. (See Item 6 of Table 4A – concerns the removal of tanks and pit liners by Battelle prior to the demolition project.) Shifting this workscope to the demolition project will have no impact on the overall BCLDP cost.

Recommendations

The five “Special Concern” items identified above require additional information and further evaluation to properly assess their impact on the project. The eight informational items identified in Table 4B should also be investigated further.

It is recommended that each of above items be further studied and mitigating actions developed as required. After completion of this study, action plans should be prepared and put into place as appropriate.

TABLE 3

ITEM ASSESSMENT

Table 3, Item Assessment

Item Description	Impact	Probability
1. Use of remote operations or techniques will not be required.	H	L
2. Use of conventional demolition techniques for radiologically contaminated structures (i.e., requires use of engineered containments) are all that are required for demolition. Use of temporary shielding will not be needed for demolition operations.	M	M
3. Demolition can be performed in any sequence-determined necessary from a structural standpoint.	M	L
4. The workweek will consist of five 10-hour days.	M	M
5. For work performed in radiologically contaminated areas, the 10-hour workday will include three jumps and will result in six production hours per man.	M	L
6. Three four-man demolition crews will be used.	H	M
7. The four-man crew will be made up of three contractor supplied demolition workers and one Battelle supplied HP Technician.	L	L
8. In addition to the demolition crews, a three-man electrical crew will be required to support electrical equipment removal and temporary lighting and ventilation construction. A Battelle supplied HP Tech will also be required to support this crew.	L	H
9. Equipment and stored materials, both inside and adjacent to building JN-1, will have been removed. Also, fencing adjacent to the building will have been removed. (The demolition contractor will install access control fencing for the demolition project.)	L	L
10. Except for the west wall of the HEC cell (which is load-bearing), all hot-cell walls (including doors, windows, and JN-1A hot-cell mezzanine) above the first floor have been previously removed and are not part of building demolition.	H	M
11. All remaining radiological contamination on accessible surfaces is fixed (i.e., no loose or smearable contamination).	M	H
12. There are no other site utilities or services passing through or under the building that will be affected by demolition.	M	L
13. Soils and remaining concrete that may be contaminated at the -14 ft. level and below are outside the scope of the cost estimate.	H	L

Table 3, Item Assessment

Item Description	Impact	Probability
14. All TRU wastes have been removed from the building.	H	L
15. No activated materials remain in the building.	M	L
16. The pool liner has been removed, and the independent survey of the remaining concrete surface completed and approved. Any required core borings, soil samples, or pool bottom perforations have also been completed.	H	M
17. Building JN-1 is a "cold and dark" facility, i.e., all utilities into the facility have been disconnected and the building is isolated.	L	L
18. Decontamination of surfaces or materials exposed during demolition will be the responsibility of Battelle.	M	L
19. Battelle will have removed all accessible asbestos (except building structure items).	M	L
20. Battelle will have previously removed all drains and sewer lines within the building footprint.	M	M
21. Battelle will perform all soil remediation activities including bottom of the hole surveys.	H	L
22. Operations can be sequenced to allow for final status survey operations with minimal delay to the demolition project.	H	L
23. Final status survey operations will be performed, and subsequent regulatory approvals will be received, in a timely manner. These activities will occur continuously throughout the demolition project and will result in only minimal interruptions to project activities.	L	H
24. Sufficient Health Physics Technicians will be available to support demolition activities and characterization or final status survey operations at the same time.	H	L
25. The demolition approach will include the use of cutting technologies (i.e., saws, sheers, and diamond wire cutting) and removal of all interior concrete as large pieces.	M	L
26. The planned use of "clean area protective covers" will be sufficient to prevent the spread of contamination back into previously cleaned areas such as the drains, sewers, pits and sub-cells that will be excavated prior to building structure removal.	L	M

Table 3, Item Assessment

Item Description	Impact	Probability
27. All HVAC roof equipment can be removed intact without being cut into smaller pieces.	M	L
28. Approximately 75% of piping (plumbing) removals will involve elevated work.	L	L
29. Plumbing systems that remain in the building for demolition include only above grade piping systems and central equipment. Remaining central equipment will consist only of a domestic water heater and storage tank, and two air compressor systems.	L	L
30. There are no significant plumbing items located on the roof, and all building plumbing fixtures and under-slab systems will have been previously removed by Battelle.	M	L
31. No measurable SNM will be present in any area of building JN-1.	L	L
32. No Nuclear Criticality Safety requirements will be necessary for any area within the JN-1 complex.	H	L
33. All painted surfaces within JN-1A and JN-1B will be considered to contain fixed contaminants until otherwise cleared by HP.	L	L
34. Rooftop mechanical equipment, such as building HVAC exhaust fans, chillers, ductwork and piping is radioactively clean.	M	H
35. The office addition at the south end of JN-1 is clean from a radiological standpoint and may be dismantled accordingly.	H	L
36. Remediation of unanticipated waste streams, if encountered during demolition will be the responsibility of Battelle.	M	L
37. The end condition of the dismantlement project is removal of all structure (concrete and utilities) to a depth of minus 14 ft. below grade and backfill to ground level after final status survey is completed and approved.	H	L
38. No soil remediation outside the footprint of the building is included in the demolition project estimate.	H	L
39. Structural debris (clean hard fill) may be used as backfill up to the minus 14 ft. elevation.	L	M
40. Waste will be packaged and turned over to Battelle. Waste shipping and disposal are the responsibility of Battelle.	H	L
41. Remediation of underground tanks and the elevated tank above the boiler, and associated piping, as well as drain, sewer, and utility lines, both inside and outside the building footprint, are not part of the building demolition project.	H	L

Table 3, Item Assessment

Item Description	Impact	Probability
42. Tanks and pit liners will have been removed by Battelle prior to start of the demolition project.	H	M
43. Groundwater incursion that may occur during activities at minus three feet and below can be controlled and dispositioned using a water treatment system consisting of pumps, a settling pond, and holding tanks. No evaporator, scrubber, or flocculation, etc., will be required. Particulate matter pumped into the settling pond will settle out within six hours (i.e., no cohesionless soils). After settling, the overburden water can be disposed of via existing site outfalls. Any necessary sampling and analyses will be performed by Battelle.	H	M
44. All fire protection equipment necessary to support demolition will already be in place and available for use by the contractor.	L	L
45. No special permits (air, water, etc.) or notifications to local jurisdictions are required by the contractor to support demolition.	H	M
46. Interior ductwork will have been 100% removed by Battelle prior to demolition.	M	M
47. Interior building HVAC systems (AHUs, Terminals, Unit Heaters, etc.) will have been 100% removed by Battelle.	M	M
48. Existing water pipes, including plumbing, HVAC, and fire protection systems, will be free of fluids prior to demolition work.	L	L
49. All mechanical equipment and vessels (boilers, expansion tanks, chiller systems, pumps, storage vessels, receiver tanks, water heaters, compressor systems, etc.) will have been properly drained to eliminate all fluids, and all refrigerants will have been removed.	L	L
50. No liquid wastes, other than that generated during the demolition activities, will exist during demolition.	L	L
51. The Sheep Shed is not part of the demolition project.	L	L
52. Natural gas piping systems to the building will be disconnected and free of natural gas.	L	L
53. The two domestic water mains serving JN-1 will be disconnected.	L	L
54. The 4160-volt electrical exterior power lines mounted on utility poles adjacent to the building will not require relocation.	M	L
55. The demolition contractor, on a case-by-case basis, may prepare and submit its own procedures for approval, in lieu of using existing Battelle operating procedures.	L	M

Table 3, Item Assessment

Item Description	Impact	Probability
56. Size and weight criteria for waste are based on disposal site requirements as of March 2001.	L	L
57. NRC approved volumetric free release criteria will be applicable for the demolition project.	L	L
58. No mixed waste processing will be required of the demolition contractor.	M	M
59. Sufficient parking space is currently available at the site to support the additional demolition contractor personnel. Construction of additional parking is not required.	L	L

TABLES 4A & 4B

**HIGH RISK ITEMS
INFORMATIONAL ITEMS**

Table 4A, High Risk Items

Item Description From Table 3	Comment
1. (6) Three four-man demolition crews will be used.	If actual project conditions require a different crew size or number of crews the change could have a High impact on project duration, and thus cost.
2. (10) Except for the west wall of the HEC cell (which is load-bearing), all hot-cell walls (including doors, windows, and JN-1A hot-cell mezzanine) above the first floor have been previously removed and are not part of building demolition.	Addition of this work to the demolition contractor scope would have a High impact on demolition project cost.
3. (11) All remaining radiological contamination on accessible surfaces is fixed (i.e., no loose or smearable contamination).	Loose contamination in the form of dust, especially in JN-1B high-bay area, is highly likely.
4. (16) The pool liner has been removed, and the independent survey of the remaining concrete surface completed and approved. Any required core borings, soil samples, or pool bottom perforations have also been completed.	Several concerns with this assumption (e.g., ability to free release pool concrete, potential water incursion after liner removal, potential for soil contamination under the pool, ability to maintain pool cleanliness during building demolition).
5. (34) Rooftop mechanical equipment, such as building HVAC exhaust fans, chillers, ductwork and piping is radioactively clean.	Lack of available characterization data.
6. (42) Tanks and pit liners will have been removed by Battelle prior to start of the demolition project.	Addition of this work to the demolition contractor scope would have a High impact on demolition project cost.
7. (43) Groundwater incursion that may occur during activities at minus three feet and below can be controlled and dispositioned using a water treatment system consisting of pumps, a settling pond, and holding tanks. No evaporator, scrubber, or flocculation, etc., will be required. Particulate matter pumped into the settling pond will settle out within six hours (i.e., no cohesionless soils). After settling, the overburden water can be disposed of via existing site outfalls. Any necessary sampling and analyses will be performed by Battelle.	Quantity, radiological condition, and disposal method of water is unknown.
8. (45) No special permits (air, water, etc.) or notifications to local jurisdictions are required by the contractor to support demolition.	Demolition approach/method will control this issue.

Table 4B, Informational Items

Item Description from Table 3	Comment
1. (2) Use of conventional demolition techniques for radiologically contaminated structures (i.e., requires use of engineered containments) are all that are required for demolition. Use of temporary shielding will not be needed for demolition operations.	Even if not true, this condition should only occur in local hot spots and not affect the entire demolition project.
2. (13) Soils and remaining concrete that may be contaminated at the -14 ft. level and below are outside the scope of the cost estimate.	Impact to the overall BCLDP project could be High.
3. (20) Battelle will have previously removed all drains and sewer lines within the building footprint.	Building structural concerns may not permit this approach.
4. (23) Final status survey operations will be performed, and subsequent regulatory approvals will be received, in a timely manner. These activities will occur continuously throughout the demolition project and will result in only minimal interruptions to project activities.	Impact to the overall BCLDP project could be High.
5. (26) The planned use of "clean area protective covers" will be sufficient to prevent the spread of contamination back into previously cleaned areas such as the drains, sewers, pits and sub-cells that will be excavated prior to building structure removal.	Impact to the overall BCLDP project could be High.
6. (37) The end condition of the dismantlement project is removal of all structure (concrete and utilities) to a depth of minus 14 ft. below grade and backfill to ground level after final status survey is completed and approved.	Impact to overall BCLDP project could be High.
7. (46) Interior ductwork will have been 100% removed by Battelle prior to demolition.	Addition of this work to the demolition contractor scope would have a Moderate impact on demolition project cost.
8. (Other) JN-1B will be demolished as a radiologically contaminated facility.	The possibility of decontaminating JN-1B and demolishing as a clean facility should be investigated.

TABLE 5

ASSESSED COST RISK

Table 5, Assessed Cost Risk

Item Description	Demolition Cost Estimate Value	Assessed Probability Factor	Assessed Risk
1. (4) The pool liner has been removed, and the independent survey of the remaining concrete surface completed and approved. Any required core borings, soil samples, or pool bottom perforations have also been completed.	Special	50%	Special
2. (7) Groundwater incursion that may occur during activities at minus three feet and below can be controlled and dispositioned using a water treatment system consisting of pumps, a settling pond, and holding tanks.....	Special	50%	Special
3. (3) All remaining radiological contamination on accessible surfaces is fixed (i.e., no loose or smearable contamination).	\$106,500	75%	\$80,000
4. (1) Three four-man demolition crews will be used.	\$140,600	50%	\$70,000
5. (5) Rooftop mechanical equipment, such as building HVAC exhaust fans, chillers, ductwork and piping is radioactively clean.	\$19,500	75%	\$15,000
6. (8) No special permits (air, water, etc.) or notifications to local jurisdictions are required by the contractor to support demolition.	Special	50%	Special
7. (2) Except for the west wall of the HEC cell (which is load bearing), all hot-cell walls (including doors, windows, and JN-1A hot-cell mezzanine) above the first floor have been previously removed and are not part of building demolition.	Special	50%	Special
8. (6) Tanks and pit liners will have been removed by Battelle prior to start of the demolition project.	Special	50%	Special

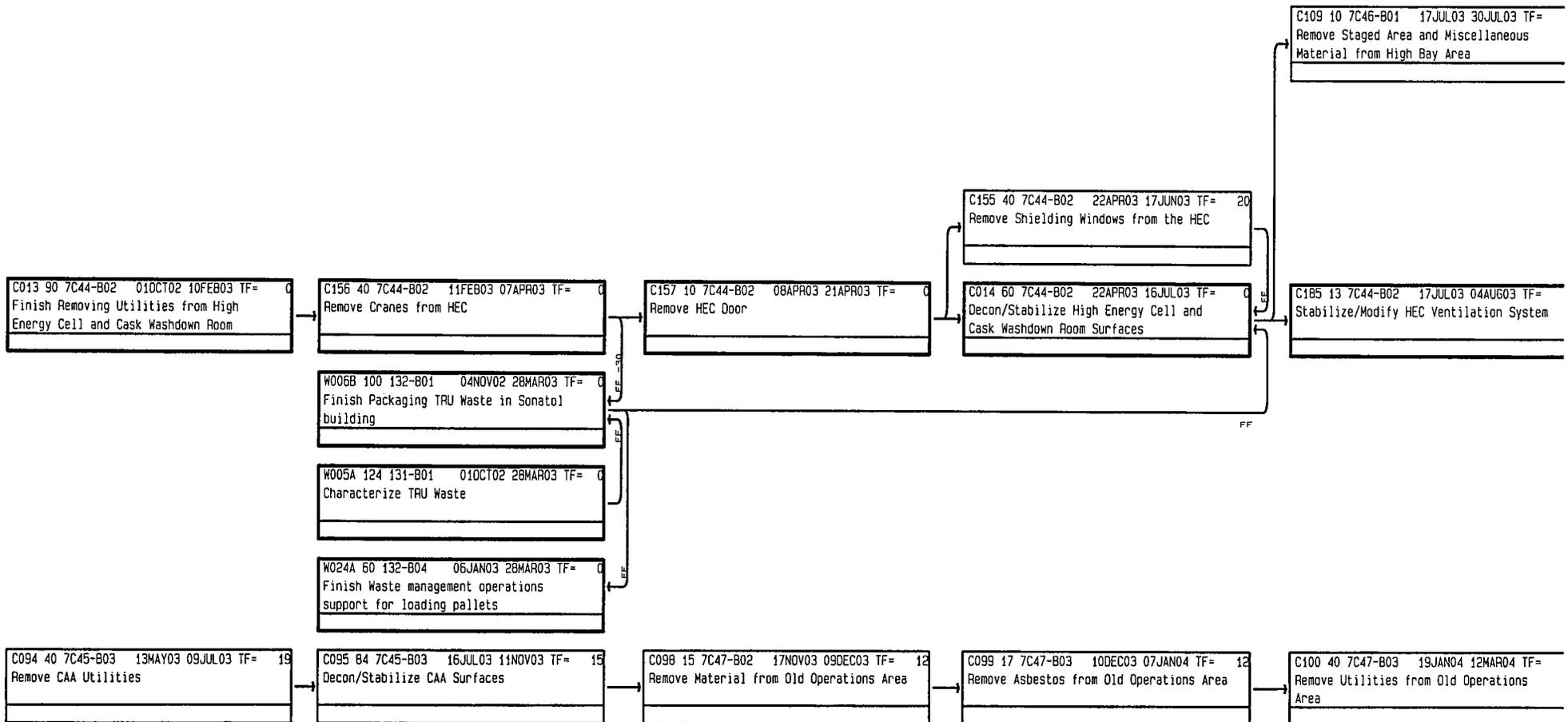
BCLDP Baseline Critical Path

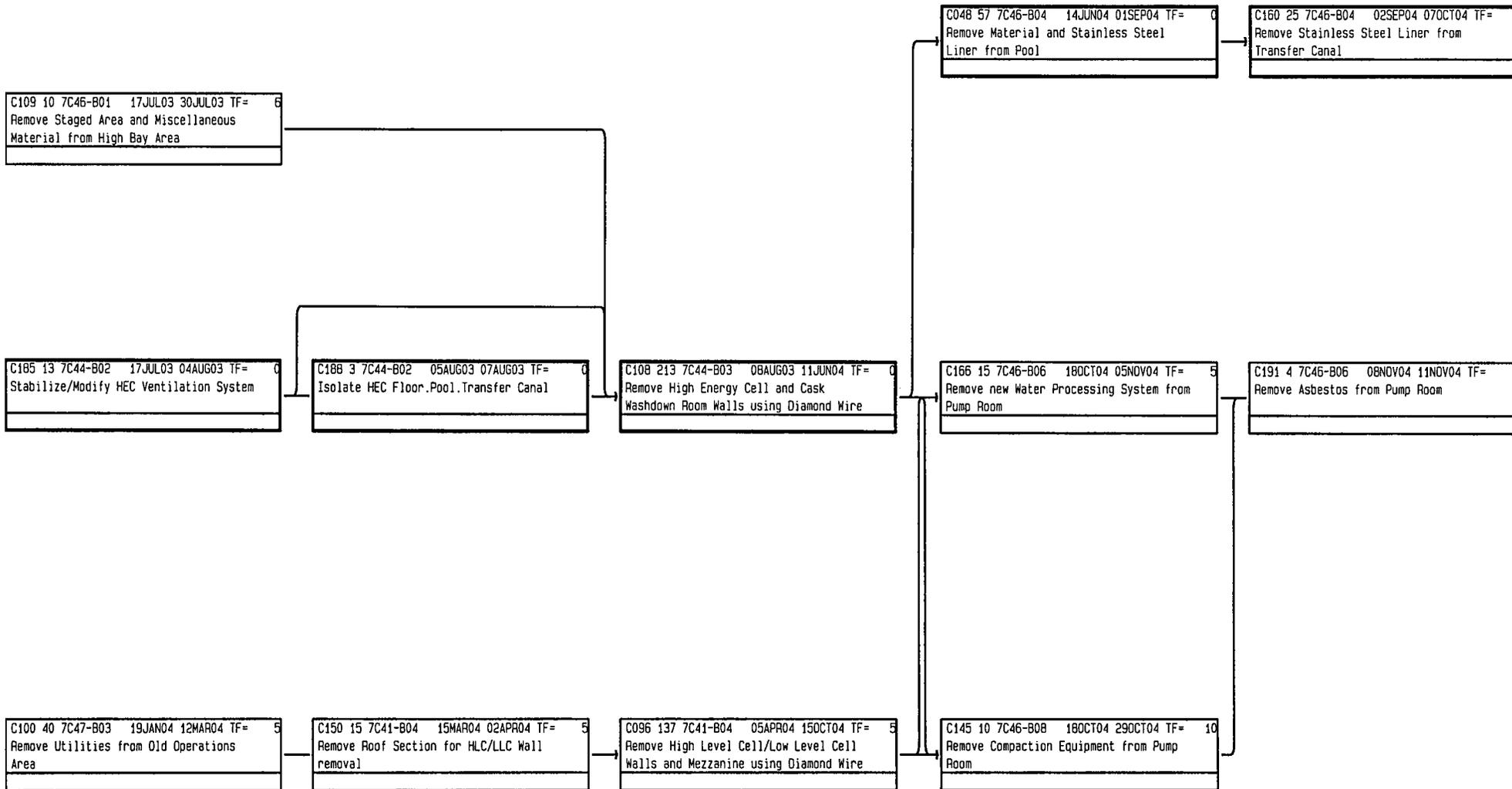
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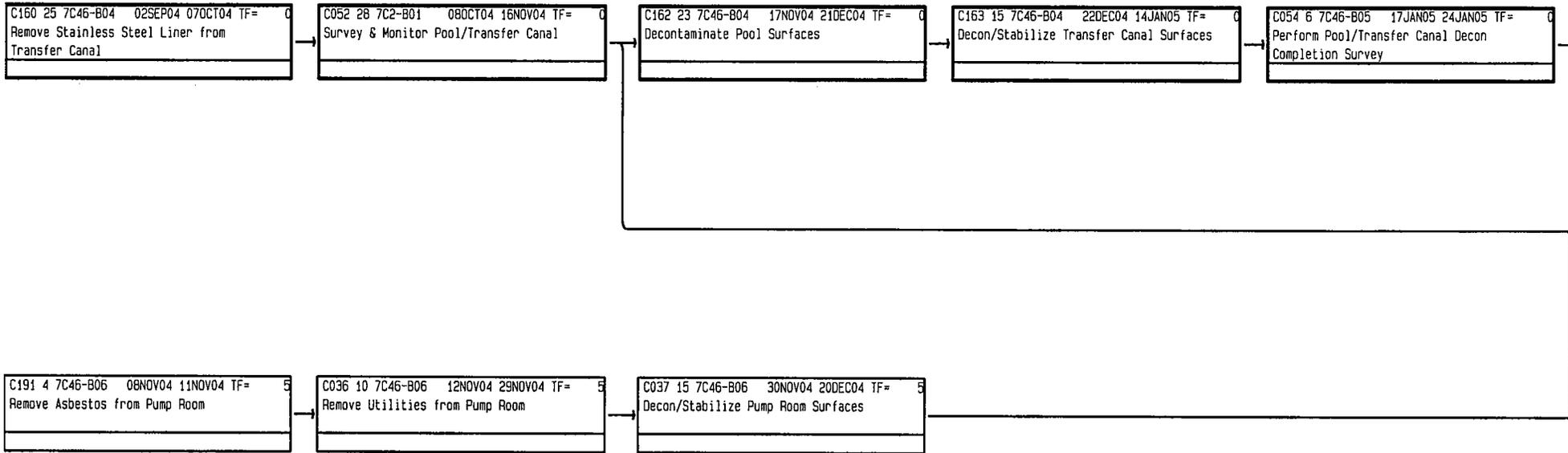
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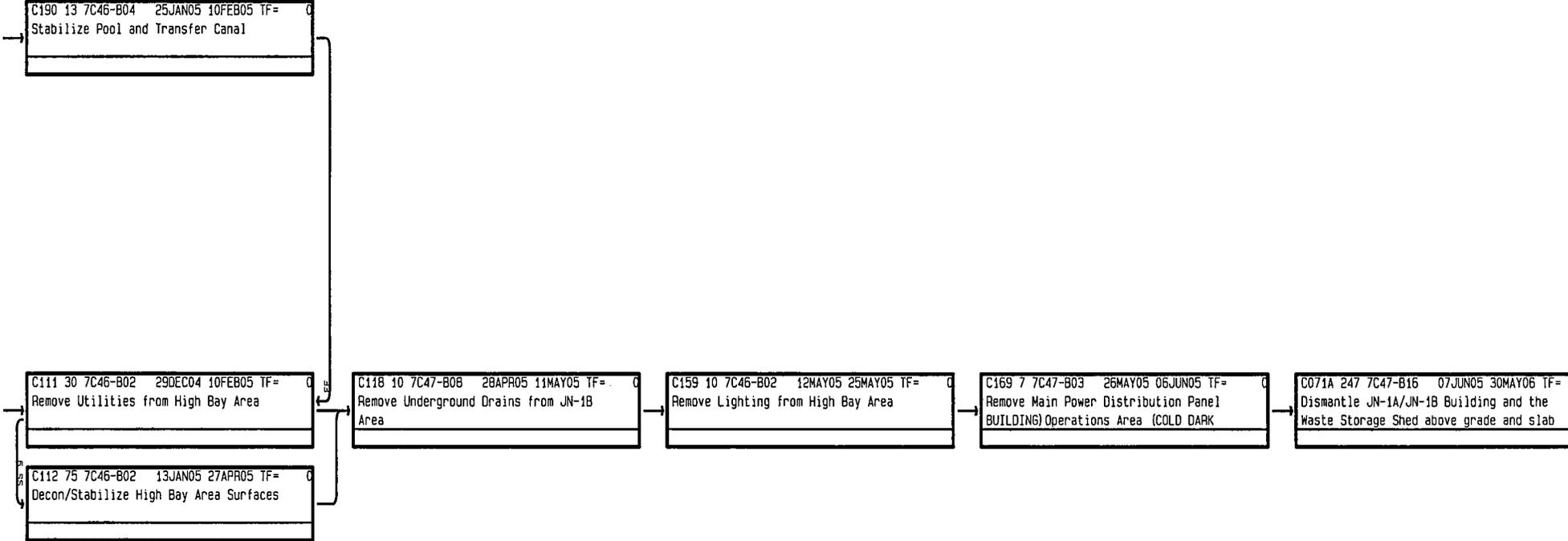
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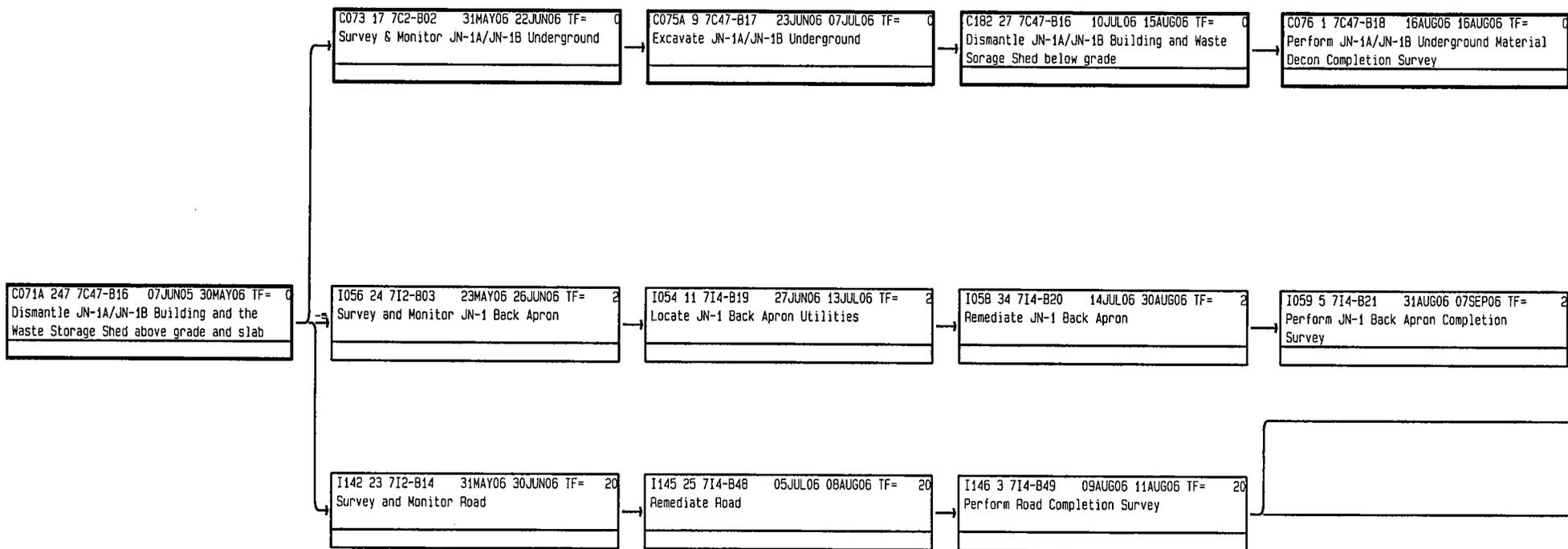
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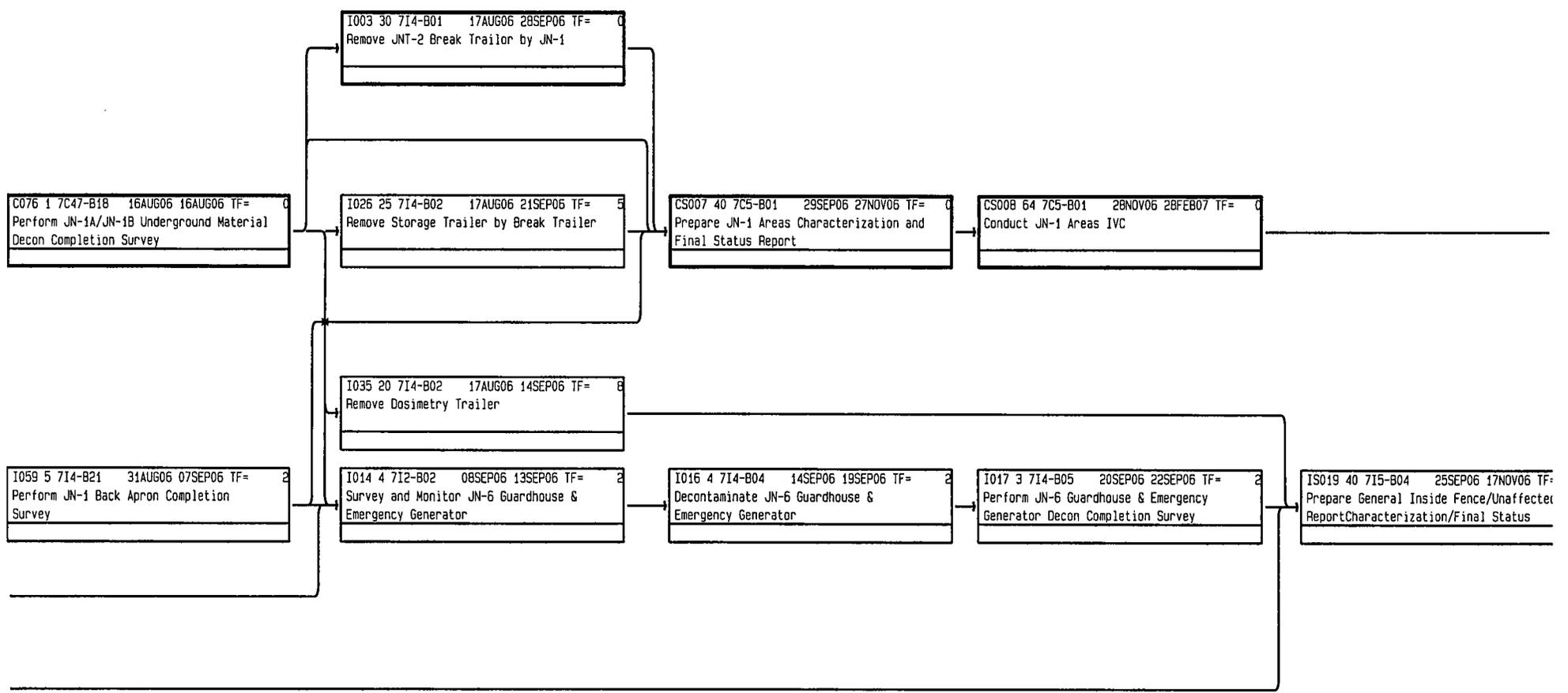


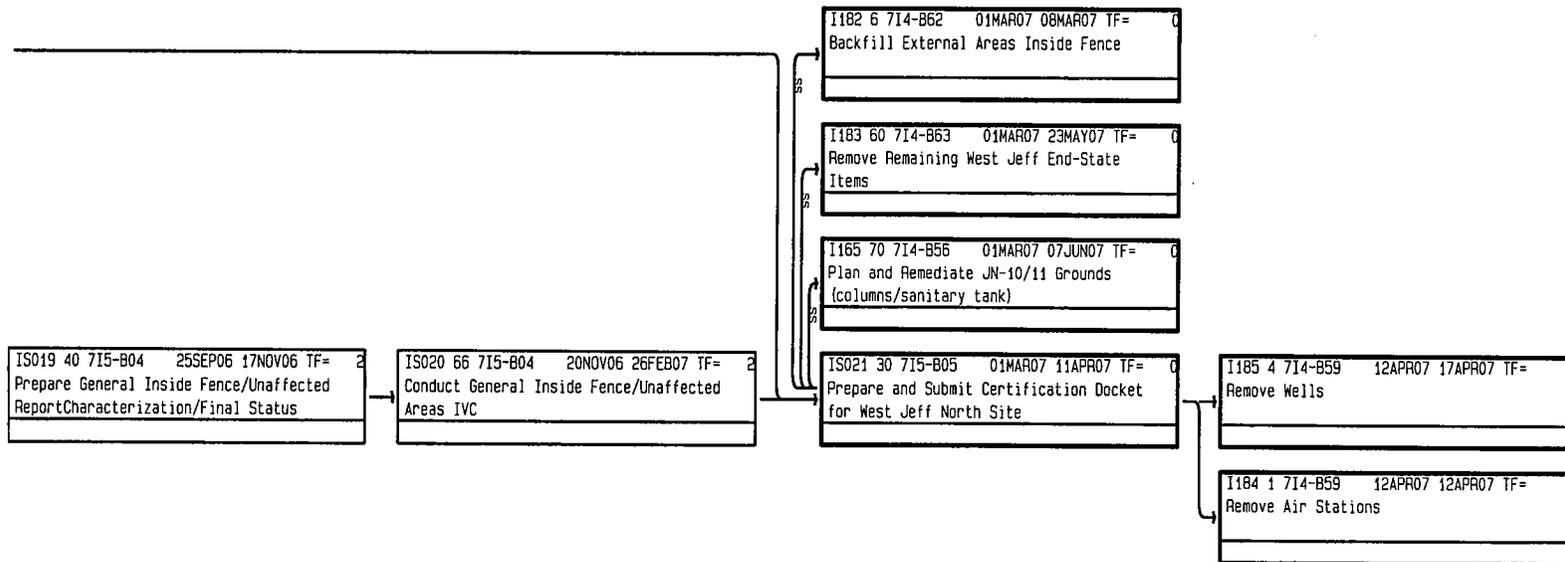






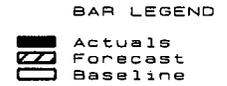






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BCLDP BASELINE: Critical Path



WORKPKG	BCOST	PCT	DU	ROU	BSTART	BFINISH	ESDATE	EFDATE	01	01	01	01	01	01	
									OCT	OCT	OCT	OCT	OCT	OCT	
									02	03	04	05	06	07	
									Time now						
C013	Finish Removing Utilities from High Energy Cell and Cask Washdown	1													
7C44-B02	\$ 616814	90	90	01OCT02	10FEB03	01OCT02	10FEB03								
W005A	Characterize TRU Waste	1													
131-B01	\$ 55743	124	124	01OCT02	28MAR03	01OCT02	28MAR03								
W006B	Finish Packaging TRU Waste in Sonatol building	1													
132-B01	\$ 85788	100	100	04NOV02	28MAR03	04NOV02	28MAR03								
W024A	Finish Waste management operations support for loading pallets	1													
132-B04	\$ 47141	60	60	06JAN03	28MAR03	06JAN03	28MAR03	24A							
C156	Remove Cranes from HEC	1													
7C44-B02	\$ 282489	40	40	11FEB03	07APR03	11FEB03	07APR03	C156							
C157	Remove HEC Door	1													
7C44-B02	\$ 44445	10	10	08APR03	21APR03	08APR03	21APR03	C157							
C155	Remove Shielding Windows from the HEC	1													
7C44-B02	\$ 261169	40	40	22APR03	17JUN03	22APR03	17JUN03	C155							
C014	Decon/Stabilize High Energy Cell and Cask Washdown Room Surfaces	1													
7C44-B02	\$ 314294	60	60	22APR03	16JUL03	22APR03	16JUL03	C014							
C094	Remove CAA Utilities	1													
7C45-B03	\$ 203046	40	40	13MAY03	09JUL03	13MAY03	09JUL03	C094							
C095	Decon/Stabilize CAA Surfaces	1													
7C45-B03	\$ 362877	84	84	16JUL03	11NOV03	16JUL03	11NOV03	C095							
C109	Remove Staged Area and Miscellaneous Material from High Bay Area	1													
7C46-B01	\$ 40157	10	10	17JUL03	30JUL03	17JUL03	30JUL03	C109							
C185	Stabilize/Modify HEC Ventilation System	1													
7C44-B02	\$ 70261	13	13	17JUL03	04AUG03	17JUL03	04AUG03	C185							
C188	Isolate HEC Floor.Pool.Transfer Canal	1													
7C44-B02	\$ 9490	3	3	05AUG03	07AUG03	05AUG03	07AUG03	C188							
C108	Remove High Energy Cell and Cask Washdown Room Walls using Diamond	1													
7C44-B03	\$ 2704837	213	213	08AUG03	11JUN04	08AUG03	11JUN04	C108							

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 Actuals
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 Baseline

WORKPKG	BCOST	PCT	DU	ROU	BSTART	BFINISH	ESDATE	EFDATE	01	01	01	01	01	01	
									OCT	OCT	OCT	OCT	OCT	OCT	
									02	03	04	05	06	07	
									← Timenow						
C163	Decon/Stabilize Transfer Canal Surfaces							1							
7C46-B04	\$ 53086		15	15	22DEC04	14JAN05	22DEC04	14JAN05							
C111	Remove Utilities from High Bay Area							1							
7C46-B02	\$ 145653		30	30	29DEC04	10FEB05	29DEC04	10FEB05							
C112	Decon/Stabilize High Bay Area Surfaces							1							
7C46-B02	\$ 353375		75	75	13JAN05	27APR05	13JAN05	27APR05							
C054	Perform Pool/Transfer Canal Decon Completion Survey							1							
7C46-B05	\$ 18589		6	6	17JAN05	24JAN05	17JAN05	24JAN05							
C190	Stabilize Pool and Transfer Canal							1							
7C46-B04	\$ 38472		13	13	25JAN05	10FEB05	25JAN05	10FEB05							
C118	Remove Underground Drains from JN-1B Area							1							
7C47-B08	\$ 76774		10	10	28APR05	11MAY05	28APR05	11MAY05							
C159	Remove Lighting from High Bay Area							1							
7C46-B02	\$ 42327		10	10	12MAY05	25MAY05	12MAY05	25MAY05							
C169	Remove Main Power Distribution Panel from Old Operations Area (COL							1							
7C47-B03	\$ 24848		7	7	26MAY05	06JUN05	26MAY05	06JUN05							
C071A	Dismantle JN-1A/JN-1B Building and the Waste Storage Shed above gr							1							
7C47-B16	\$ 8632121		247	247	07JUN05	30MAY06	07JUN05	30MAY06							
I056	Survey and Monitor JN-1 Back Apron							1							
7I2-B03	\$ 68199		24	24	23MAY06	26JUN06	23MAY06	26JUN06							
C073	Survey & Monitor JN-1A/JN-1B Underground							1							
7C2-B02	\$ 58637		17	17	31MAY06	22JUN06	31MAY06	22JUN06							
I142	Survey and Monitor Road							1							
7I2-B14	\$ 64816		23	23	31MAY06	30JUN06	31MAY06	30JUN06							
C075A	Excavate JN-1A/JN-1B Underground							1							
7C47-B17	\$ 69894		9	9	23JUN06	07JUL06	23JUN06	07JUL06							
I054	Locate JN-1 Back Apron Utilities							1							
7I4-B19	\$ 2534		11	11	27JUN06	13JUL06	27JUN06	13JUL06							

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BCLDP BASELINE: Critical Path

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 Actuals
 Forecast
 Baseline

WORKPKG	BCOST	PCT	DU	ROU	BSTART	BFINISH	ESDATE	EFDATE	01	01	01	01	01	01
									OCT	OCT	OCT	OCT	OCT	OCT
									02	03	04	05	06	07
I145	Remediate Road								← Timenow					
714-B48	\$ 124823		25	25	05JUL06	08AUG06	05JUL06	08AUG06					I 145	
C182	Dismantle JN-1A/JN-1B Building and Waste Storage Shed below grade												C 182	
7C47-B16	\$ 1462476		27	27	10JUL06	15AUG06	10JUL06	15AUG06						
I058	Remediate JN-1 Back Apron												I 058	
714-B20	\$ 115160		34	34	14JUL06	30AUG06	14JUL06	30AUG06						
I146	Perform Road Completion Survey												I 146	
714-B49	\$ 8450		3	3	09AUG06	11AUG06	09AUG06	11AUG06						
C076	Perform JN-1A/JN-1B Underground Material Decon Completion Survey												C 076	
7C47-B18	\$ 2933		1	1	16AUG06	16AUG06	16AUG06	16AUG06						
I035	Remove Dosimetry Trailer												I 035	
714-B02	\$ 35485		20	20	17AUG06	14SEP06	17AUG06	14SEP06						
I026	Remove Storage Trailer by Break Trailer												I 026	
714-B02	\$ 43469		25	25	17AUG06	21SEP06	17AUG06	21SEP06						
I003	Remove JNT-2 Break Tractor by JN-1												I 003	
714-B01	\$ 43220		30	30	17AUG06	28SEP06	17AUG06	28SEP06						
I059	Perform JN-1 Back Apron Completion Survey												I 059	
714-B21	\$ 14111		5	5	31AUG06	07SEP06	31AUG06	07SEP06						
I014	Survey and Monitor JN-6 Guardhouse & Emergency Generator												I 014	
712-B02	\$ 11245		4	4	08SEP06	13SEP06	08SEP06	13SEP06						
I016	Decontaminate JN-6 Guardhouse & Emergency Generator												I 016	
714-B04	\$ 13975		4	4	14SEP06	19SEP06	14SEP06	19SEP06						
I017	Perform JN-6 Guardhouse & Emergency Generator Decon Completion Sur												I 017	
714-B05	\$ 8125		3	3	20SEP06	22SEP06	20SEP06	22SEP06						
IS019	Prepare General Inside Fence/Unaffected Areas Characterization/Fin												IS 019	
715-B04	\$ 52703		40	40	25SEP06	17NOV06	25SEP06	17NOV06						
CS007	Prepare JN-1 Areas Characterization and Final Status Report												CS 007	
7C5-B01	\$ 54002		40	40	29SEP06	27NOV06	29SEP06	27NOV06						

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BCLDP BASELINE: Critical Path

BAR LEGEND



WORKPKG	BCOST	PCT	DU	ROU	BSTART	BFINISH	ESDATE	EFDATE	01	01	01	01	01	01	
									OCT	OCT	OCT	OCT	OCT	OCT	
									02	03	04	05	06	07	
									← Timenow						
ISO20	Conduct General Inside Fence/Unaffected Areas IVC							1						ISO20	
715-B04	\$ 66970		66	66	20NOV06	26FEB07	20NOV06	26FEB07							
CS008	Conduct JN-1 Areas IVC							1						CS008	
7CS-B01	\$ 45801		64	64	28NOV06	28FEB07	28NOV06	28FEB07							
I182	Backfill External Areas Inside Fence							1						I182	
714-B62	\$ 364039		6	6	01MAR07	08MAR07	01MAR07	08MAR07							
ISO21	Prepare and Submit Certification Docket for West Jeff North Site							1						ISO21	
715-B05	\$ 56047		30	30	01MAR07	11APR07	01MAR07	11APR07							
I183	Remove Remaining West Jeff End-State Items							1						I183	
714-B63	\$ 464619		60	60	01MAR07	23MAY07	01MAR07	23MAY07							
I165	Plan and Remediate JN-10/11 Grounds (columns/sanitary tank)							1						I165	
714-B56	\$ 243000		70	70	01MAR07	07JUN07	01MAR07	07JUN07							
I184	Remove Air Stations							1						I184	
714-B59	\$ 837		1	1	12APR07	12APR07	12APR07	12APR07							
I185	Remove Wells							1						I185	
714-B59	\$ 28536		4	4	12APR07	17APR07	12APR07	17APR07							

BC P

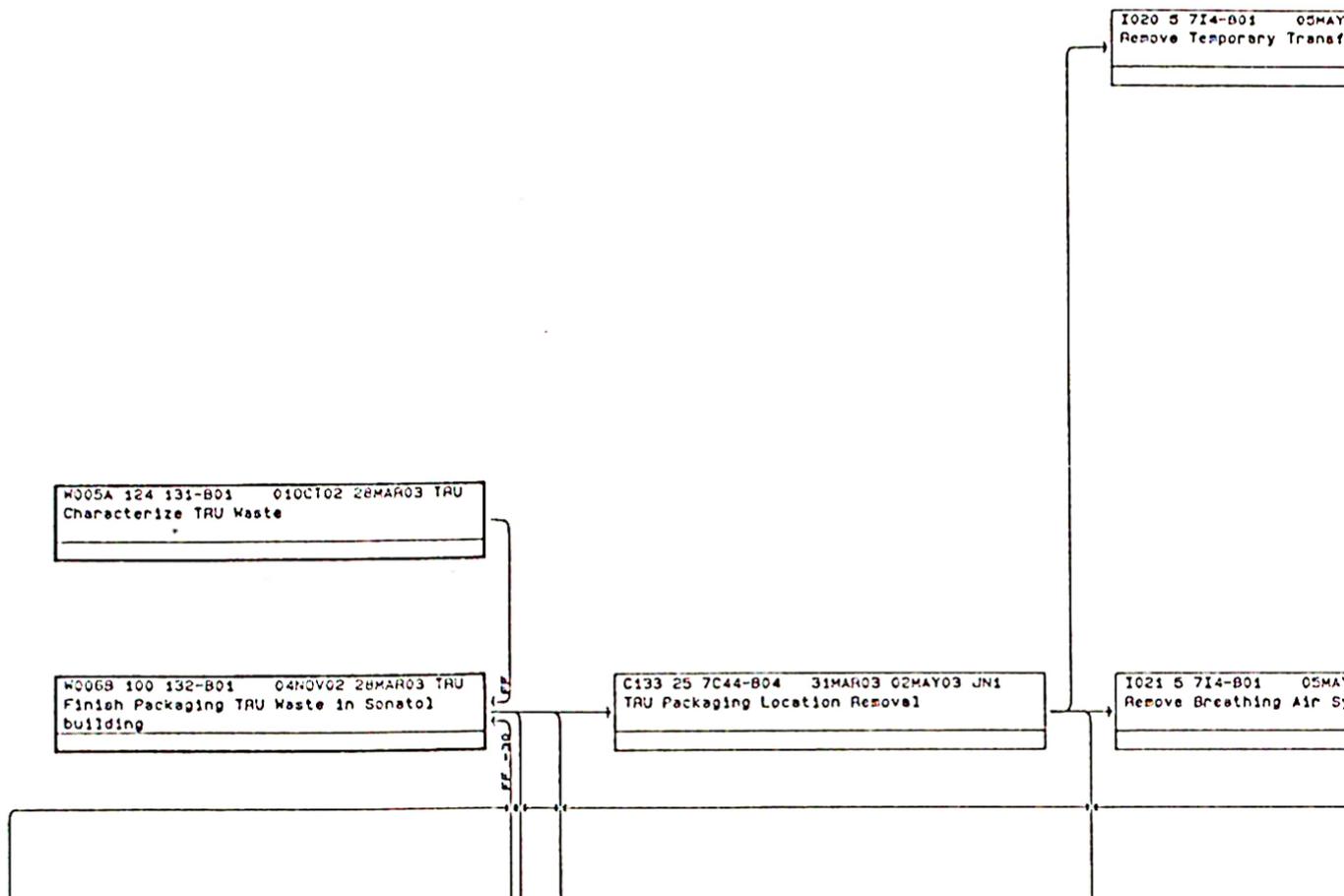
Baseline Revision 3 Summary Schedule

FY03 - FY07

WBS	Activity Description	FY2003	FY2004	FY2005	FY2006	FY2007
132	Finish Packaging TRU Waste in Sonatol Building	■				
132	Finish Shipping TRU Waste to Hanford	■				
7C47	JN-1 Office Area Decontamination	■				
7C47	JN-1 Office Area Demolition		■			
7C47	JN-1A/B Decontamination	■				
7C47	JN-1A/B Demolition including Soils				■	
7D4	JN-2 Decontamination		■			
7D4	JN-2 Demolition including Soils		■			
7E4	JN-3 Decontamination - Underground Drains on	■				
7E4	JN-3 Demolition including Soils		■			
714	Remediate Abandoned North Filter Beds	■				
714	Remediate Storm/Sewer Lines		■			
714	Remediate Areas Outside JN-1 Footprint				■	
7C5	IVC JN-1 Area for Release					■
715	Prepare Certification Docket					■

BCLDP BAS

----- Critical



ELINE LOGIC

06/27

07: 17

Page

Y03 09MAY03 EXT
corner

Y03 09MAY03 EXT
system behind JN-1

7/02

7:28

1

I001 2 714-B01 18OCT04 19OCT04 EXT
Remove JN-3 Diesel Tank

C103 20 7C47-B04 18OCT04 12NOV04 JN1
Remove Underground Drains from JN-1A
Area

4 16FEB04 JN1
Id Operations

C112 75 7C46-B02 13 JAN 05 27 APR 05 J1
Decon/Stabilize High Bay Area Surfaces

5 714-B23 27JUL06 02AUG06 EXT
orm JN-1 Back Controlled Area
ation Survey

16 714-B25 30JUN06 25JUL06 EXT
ate JN-1 Front of Building

4 714-B55 27JUL06 01AUG06 EXT
orm JN-1 Front Apron Completion
y

1 714-B32 11JUL06 11JUL06 EXT
orm JN-1 Lake Outfall Line
ation Survey

3 714-B49 09AUG06 11AUG06 EXT
orm Road Completion Survey

1071 2 714-B26 26JUL06 27JUL06 EXT
Perform JN-1 Front Area Completion
Survey

CS007 40 7CS-B01 29SEP06 27NOV06 JN1
Prepare JN-1 Area Characterization and
Final Status Report

CS008 64 7CS-B01 28
Conduct JN-1 Area IVC

ENDVCG 28FEB07 JN1

TC

1182 6 714-B62 01MAR07 08MAR07 EXT
Backfill External Areas Inside Fence

1183 60 714-B53 01MAR07 23MAY07 EXT
Remove Remaining West Jeff End-State
Items

C089 10 7C42-B01 15OCT02 28OCT02 JN1
Remove Material from Charpy Room

C079A 20 7C41-B05 01OCT02 28OCT02 JN1
Finish Removing Material from Hydraulic
Room

C090 10 7C42-B02 29OCT02 11NOV02 JN1
Remove Charpy Room Utilities

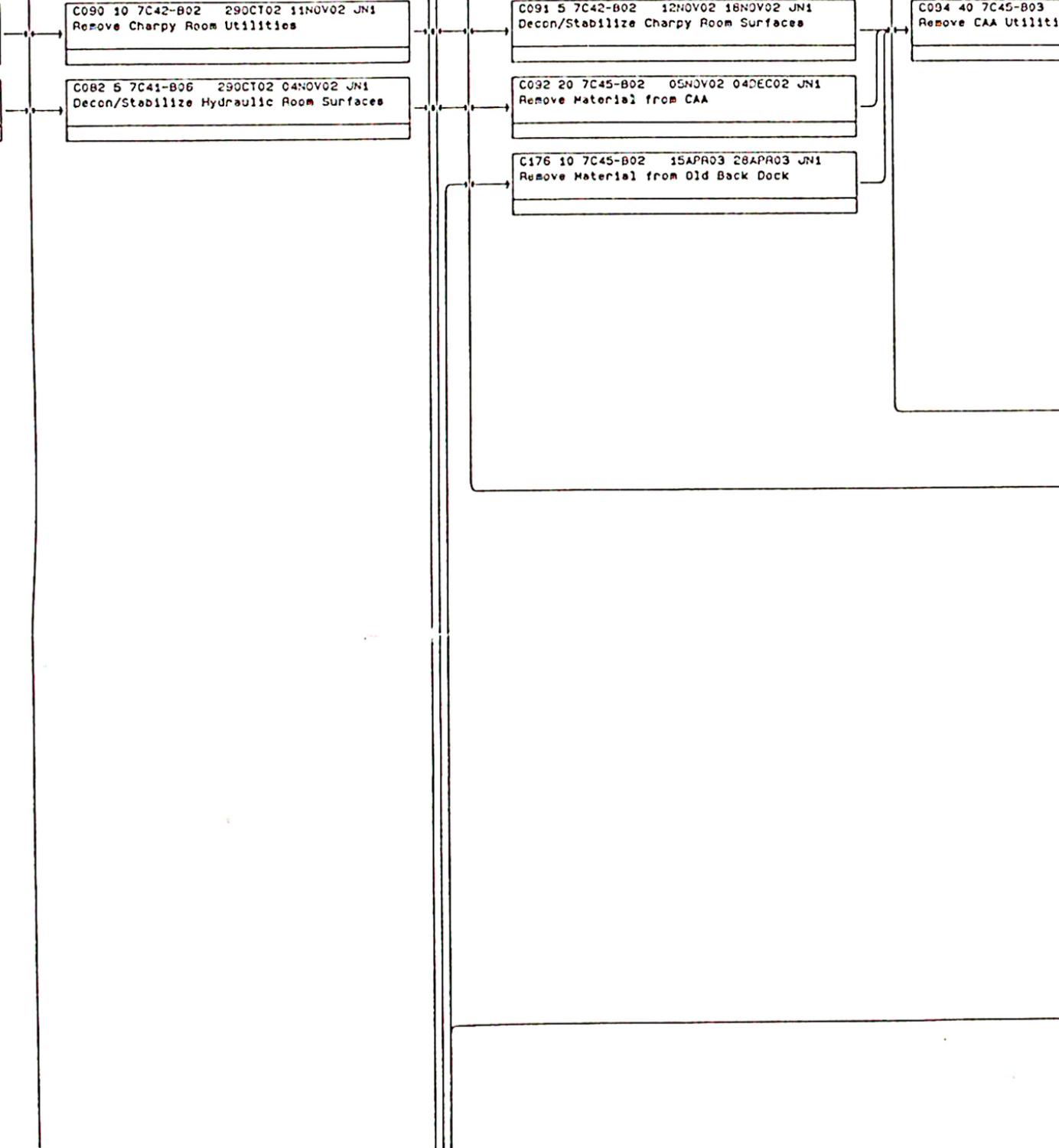
C082 5 7C41-B06 29OCT02 04NOV02 JN1
Decon/Stabilize Hydraulic Room Surfaces

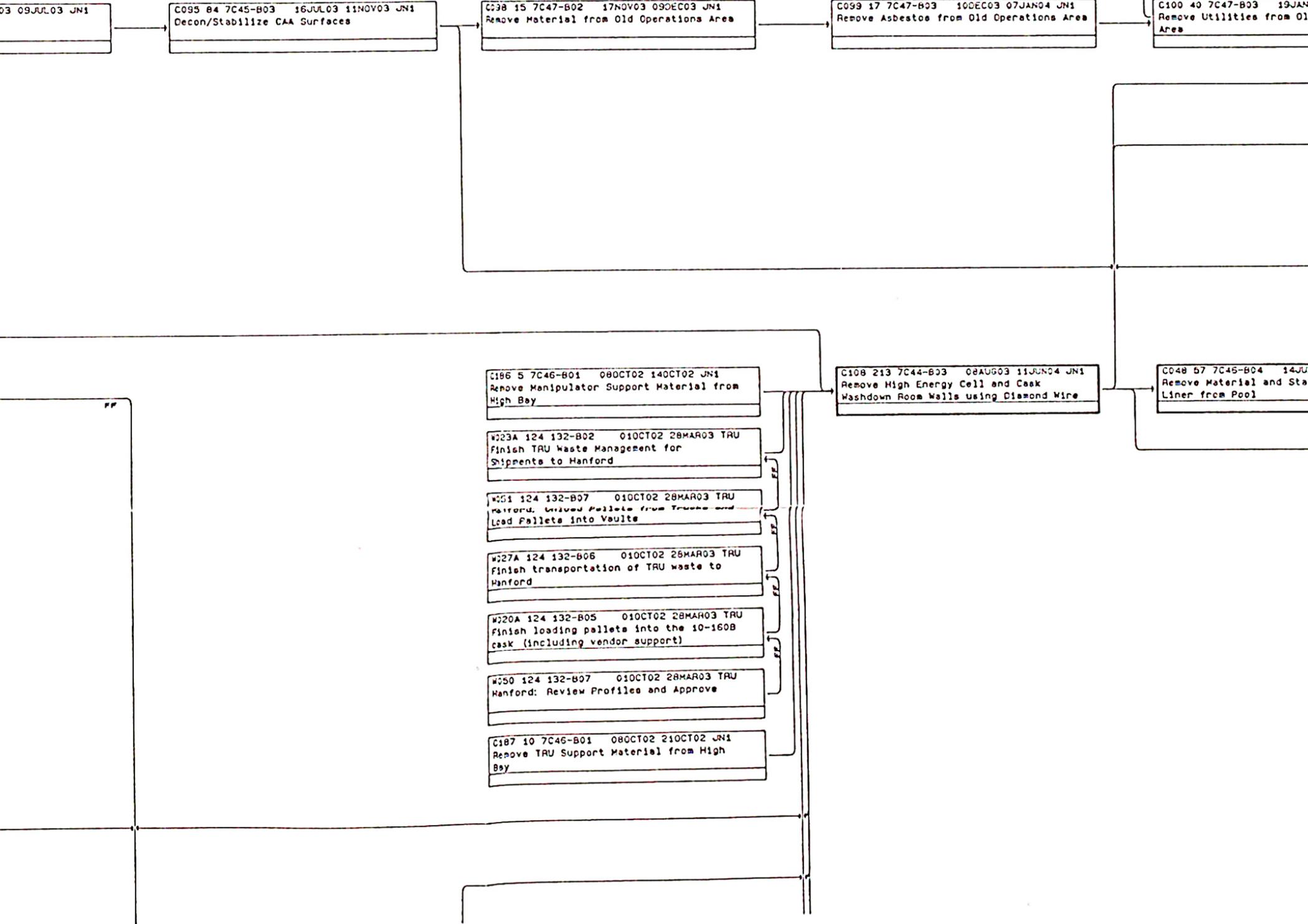
C091 5 7C42-B02 12NOV02 18NOV02 JN1
Decon/Stabilize Charpy Room Surfaces

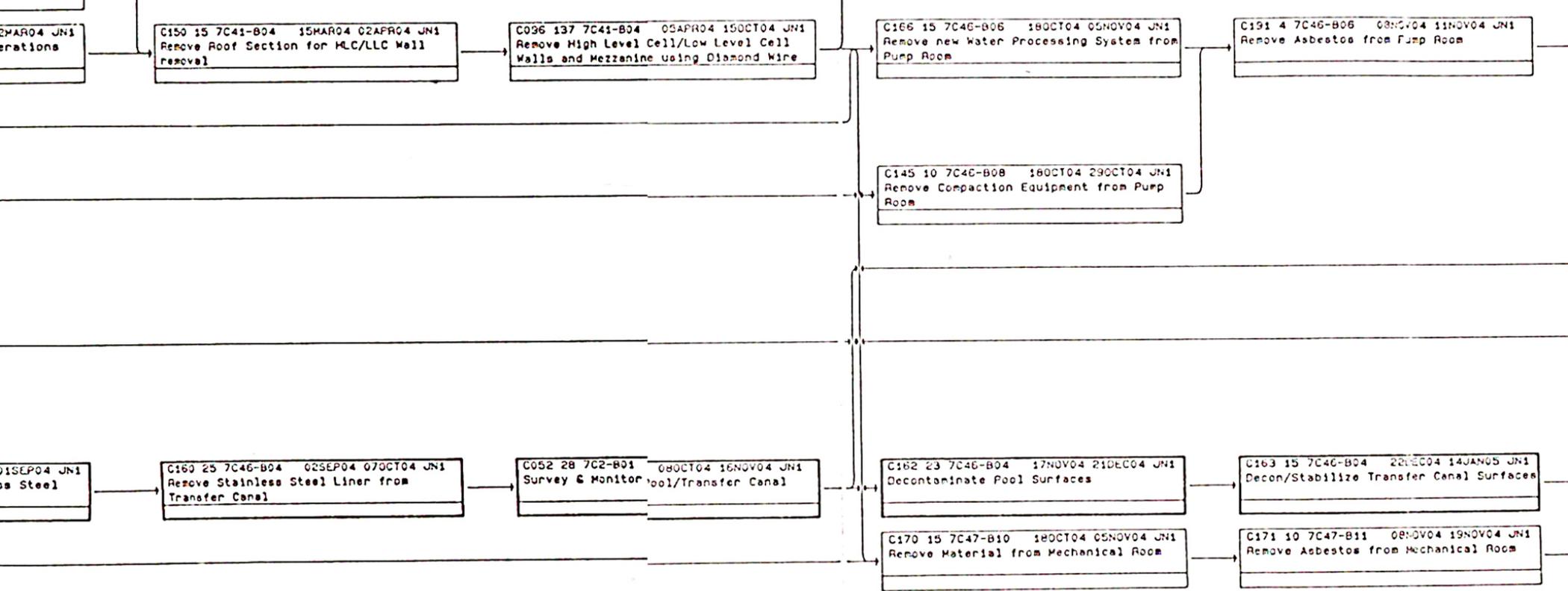
C092 20 7C45-B02 05NOV02 04DEC02 JN1
Remove Material from CAA

C176 10 7C45-B02 15APR03 28APR03 JN1
Remove Material from Old Back Dock

C094 40 7C45-B03
Remove CAA Utilities







C036 10 7C46-B06 12NOV04 29NOV04 JN1
Remove Utilities from Pump Room

C037 15 7C46-B06 30NOV04 20DEC04 JN1
Decon/Stabilize Pump Room Surfaces

C111 30 7C46-B02 29DEC04 10FEB05 JN1
Remove Utilities from High Bay Area

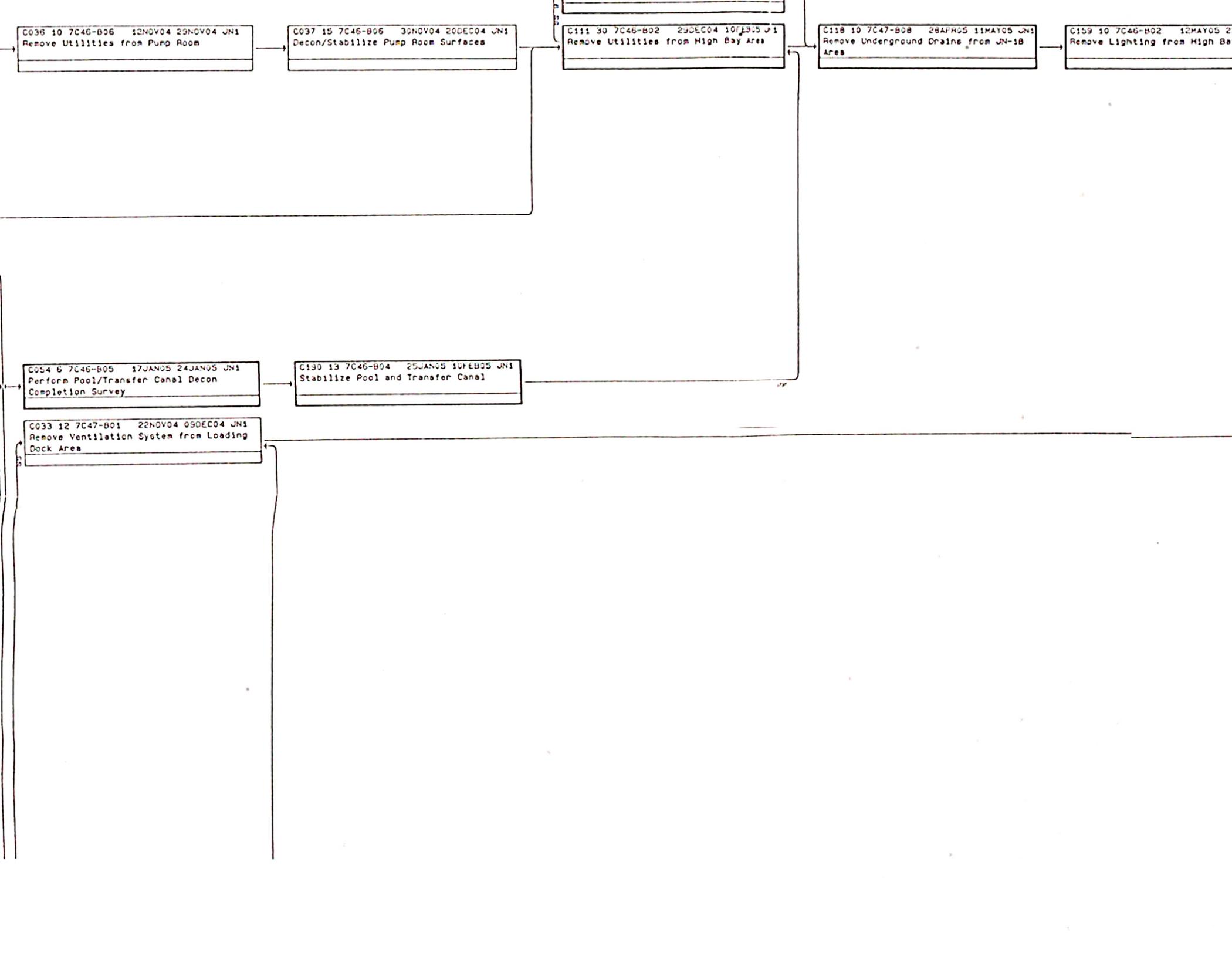
C118 10 7C47-B08 28AFR05 11MAY05 JN1
Remove Underground Drains from JN-1B Area

C159 10 7C46-B02 12MAY05 2

C054 6 7C46-B05 17JAN05 24JAN05 JN1
Perform Pool/Transfer Canal Decon
Completion Survey

C190 13 7C46-B04 25JAN05 10FEB05 JN1
Stabilize Pool and Transfer Canal

C033 12 7C47-B01 22NOV04 09DEC04 JN1
Remove Ventilation System from Loading
Dock Area



MAY05 JN1
Area

C169 7 7C47-B03 26MAY05 06JUN05 JN1
Remove Main Power Distribution Panel
BUILDING) Operations Area (COLD DARK

C071A 247 7C47-B16 07JUN05 30MAY06 JN1
Dismantle JN-1A/JN-1B Building and the
Waste Storage Shed above grade and slab

I056 24 712-B03 23MAY06 26JUN06 EXT
Survey and Monitor JN-1 Back Apron

I054 11 714-B19 27JUN06 13JUL06 EXT
Locate JN-1 Back Apron Utilities

I058 3
Remedi

I023 40 714-B01 08OCT02 04DEC02 EXT
Remove JN-1 Boneyard

I009 5 714-B01 07JUN05 13JUN05 EXT
Remove JN-2 Electric Substation

C073 17 7C2-B02 31MAY06 22JUN06 JN1
Survey & Monitor JN-1A/JN-1B Underground

C075A 9 7C47-B17 23JUN06 07JUL06 JN1
Excavate JN-1A/JN-1B Underground

C182
Dismant
Storage

714-B20 14AUG06 30AUG06 EXT
Complete JN-1 Back Apron

1059 5 714-B21 31AUG06 07SEP06 EXT
Perform JN-1 Back Apron Completion
Survey

1014 4 712-B02 08SEP06 13SEP06 EXT
Survey and Monitor JN-6 Guardhouse &
Emergency Generator

1016 4 714-B04 14SEP06 19SEP06 EXT
Decontaminate JN-6 Guardhouse &
Emergency Generator

1017 3 714-B05 20
Perform JN-6 Guardhouse
Generator Decon Comp

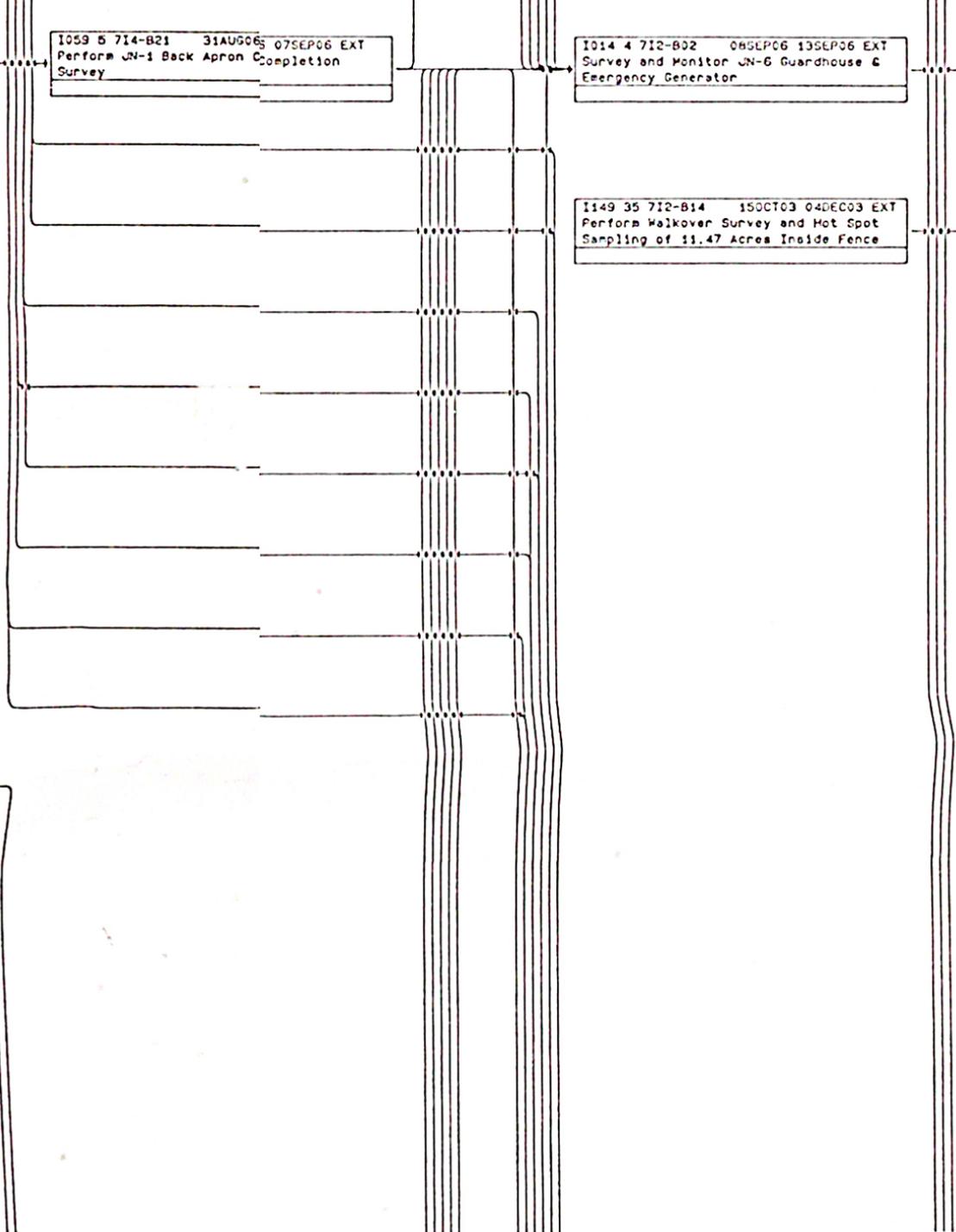
1005 10 712-B01 0
Survey and Release N

1149 35 712-B14 15OCT03 04DEC03 EXT
Perform Walkover Survey and Hot Spot
Sampling of 11.47 Acres Inside Fence

1151 7 714-B50 05DEC03 15DEC03 EXT
Remediate Remaining 11.47 Acres Inside
Fence

1152 21 714-B51 1
Perform Remaining 11
Fence Completion Sur

7 7047-B16 10AUG06 15OCT06 JN1
Complete JN-1A/JN-1B Building and Waste
Shed below grade



06SEP06 22SEP06 EXT
Use & Emergency
Action Survey

IS019 40 715-B04 25SEP06 17NOV06 EXT
Prepare General Inside Fence/Unaffected
Report/Characterization/Final Status

IS020 66 715-B04 20NOV06 26FEB07 EXT
Conduct General Inside Fence/Unaffected
Area IVC

IS021 30 715-B05 01MAR07 11APR07 EXT
Prepare and Submit Certification Docket
for West Jeff North Site

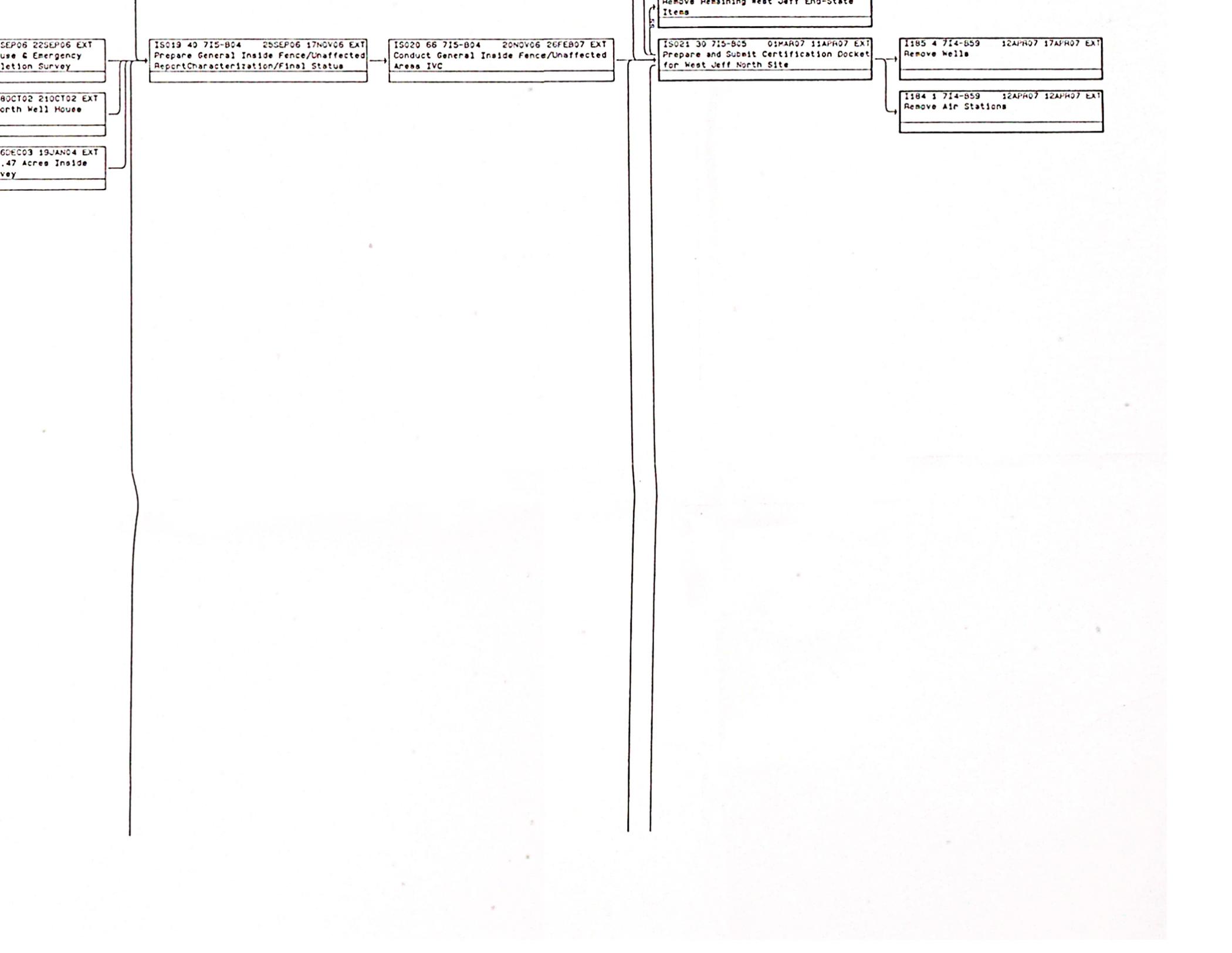
1185 4 714-B59 12APR07 17APR07 EXT
Remove Wells

1184 1 714-B59 12APR07 12APR07 EXT
Remove Air Stations

08OCT02 21OCT02 EXT
North Well House

06DEC03 19JAN04 EXT
.47 Acres Inside
vey

1185



E-LOGIC

06/27/02
07:17:28
Page 2

3 7C44-B02 17JUL03 04AUG03 JN1
Size/Modify HEC Ventilation System

C188 3 7C44-B02 05AUG03 07AUG03 JN1
Isolate HEC Floor.Pool.Transfer Canal

0 7C46-B01 17JUL03 30JUL03 JN1
Staged Area and Miscellaneous
Material from High Bay Area

0 7C43-B01 11FEB03 24FEB03 JN1
HEPA/Ductwork from Alpha/Gamma

05 7C45-B04 03JUN03 08JUL03 JN1
Stabilize Evaporator Room Surfaces

3 7C47-B05 17JUL03 21JUL03 JN1
Remove Material from HEC Operations Area

C042 25 7C47-B07 20JUL03 25AUG03 JN1
Remove Utilities from HEC Operations Area

9 7C47-B05 17JUL03 29JUL03 JN1
Remove Asbestos from JN-10 Area

C116 50 7C47-B05 30JUL03 08OCT03 JN1
Remove Utilities and Stabilize Fan Room

10 7C47-B13 17JUL03 30JUL03 JN1
Remove Vault Door and Shield Walls from
Storage Shed

C056 23 7C47-B13 15JUN04 16JUL04 JN1
Remove Utilities from Waste Storage Shed

I050 11 7I4-B16 14JAN05 28JAN05 EXT
Perform Active Middle Treatment System
Bed Completion Survey

G030 10 7C47-B01 22NOV04 07DEC04 JN1
Remove Utilities, Piping, HVAC,
Dock Area and Crane Rails from Loading





I190 220 7I4-B07 14AUG03 28JUN04 EXT
Deployment of Wide System

I191 15 7I4-B07 29JUN04 20JUL04 EXT
Demobilize the WIDE System

I192 11 7I2-B20 21JUL04 04AUG04 EXT
Survey and Monitor the Abandoned North
Demobilization after WIDE

I043 87 7I4-B08 05AUG04 08DEC04 EXT
Remediate Abandoned North Filter Bed

I044
Rem

I052 56 7I4-B17 01MAR04 17MAY04 EXT
Remediate Active North Filter Bed Area

I053 15 7I4-B18 18MAY04 08JUN04 EXT
Perform Active North Filter Bed
Completion Survey

714-B15 09DEC04 13JAN05 EXT
Site Active Middle Treatment System

1044 34 714-B09 14JAN05 02MAR05 EXT
Perform Abandoned North Filter Beds
Completion Survey

I193 10 714-B45 24JUN04 08JUL04 EXT
Stabilize and Leave in Place Sanitary
Drain Under Dam

1135 135 712-D13 15OCT02 28APR03
Survey and Monitor Storm Lines

I133 18 7I4-B45 02JUL04 28JUL04 EXT
Locate Storm Line Utilities

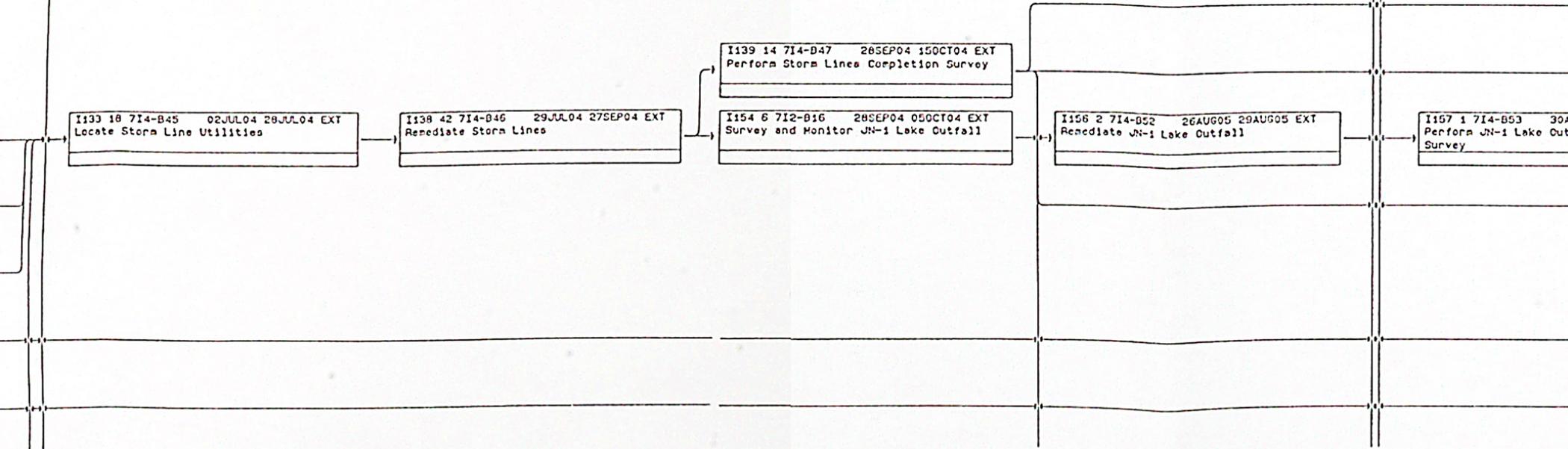
I138 42 7I4-B46 29JUL04 27SEP04 EXT
Remediate Storm Lines

I139 14 7I4-B47 28SEP04 15OCT04 EXT
Perform Storm Lines Completion Survey

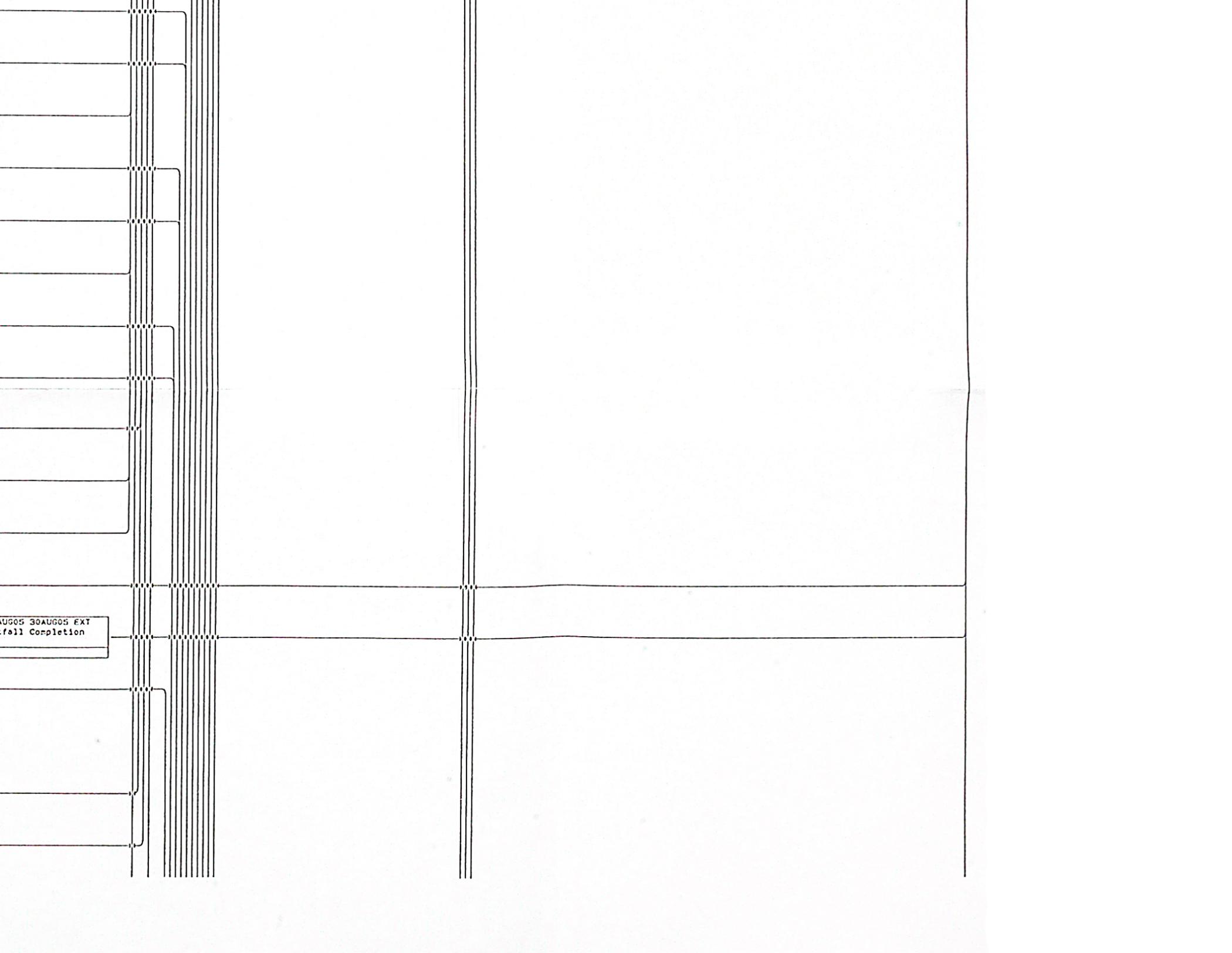
I154 6 7I2-B16 28SEP04 05OCT04 EXT
Survey and Monitor JN-1 Lake Outfall

I156 2 7I4-B52 26AUG05 29AUG05 EXT
Remediate JN-1 Lake Outfall

I167 1 7I4-B53 30AUG05
Perform JN-1 Lake Outfall Survey

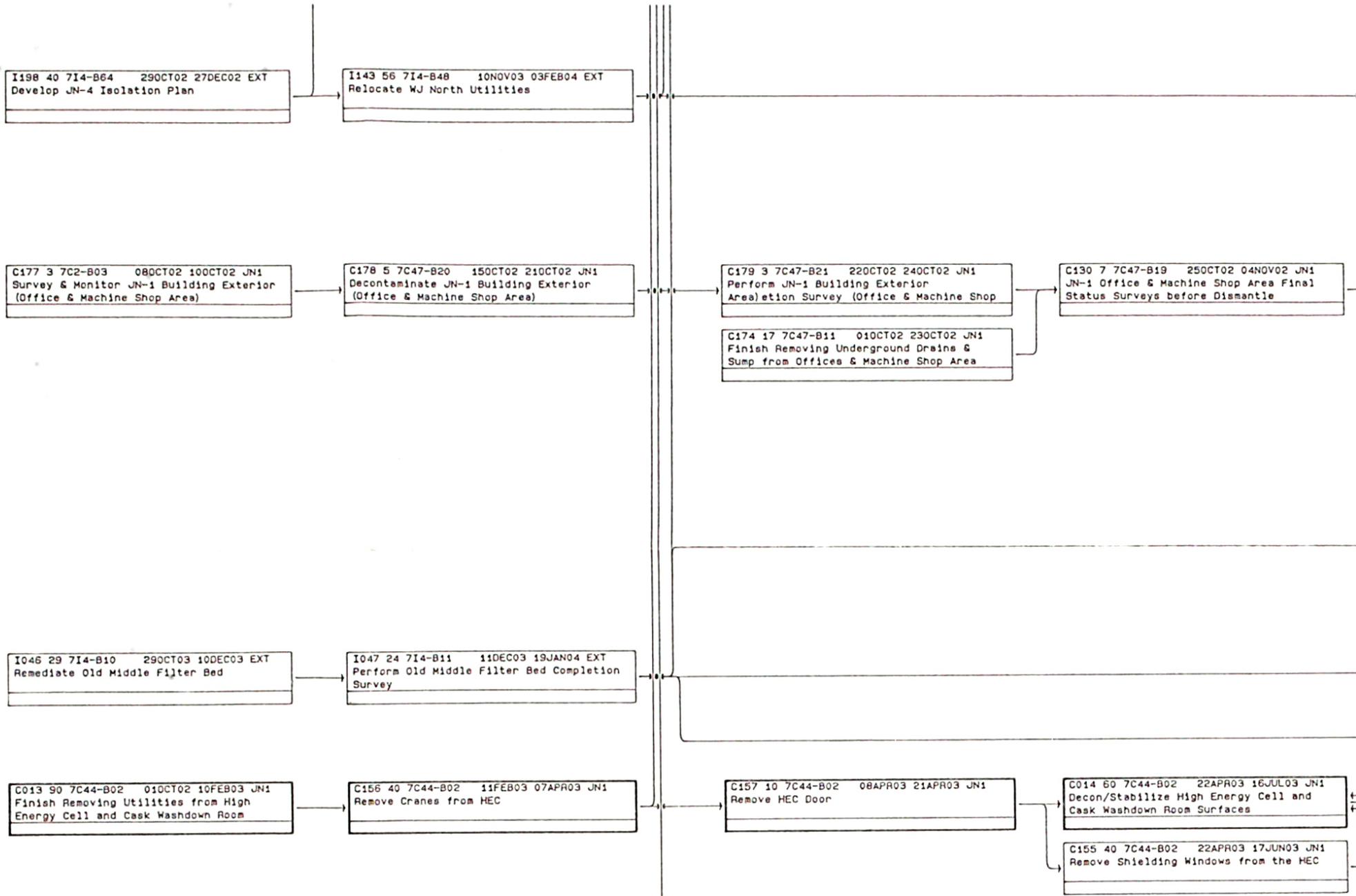


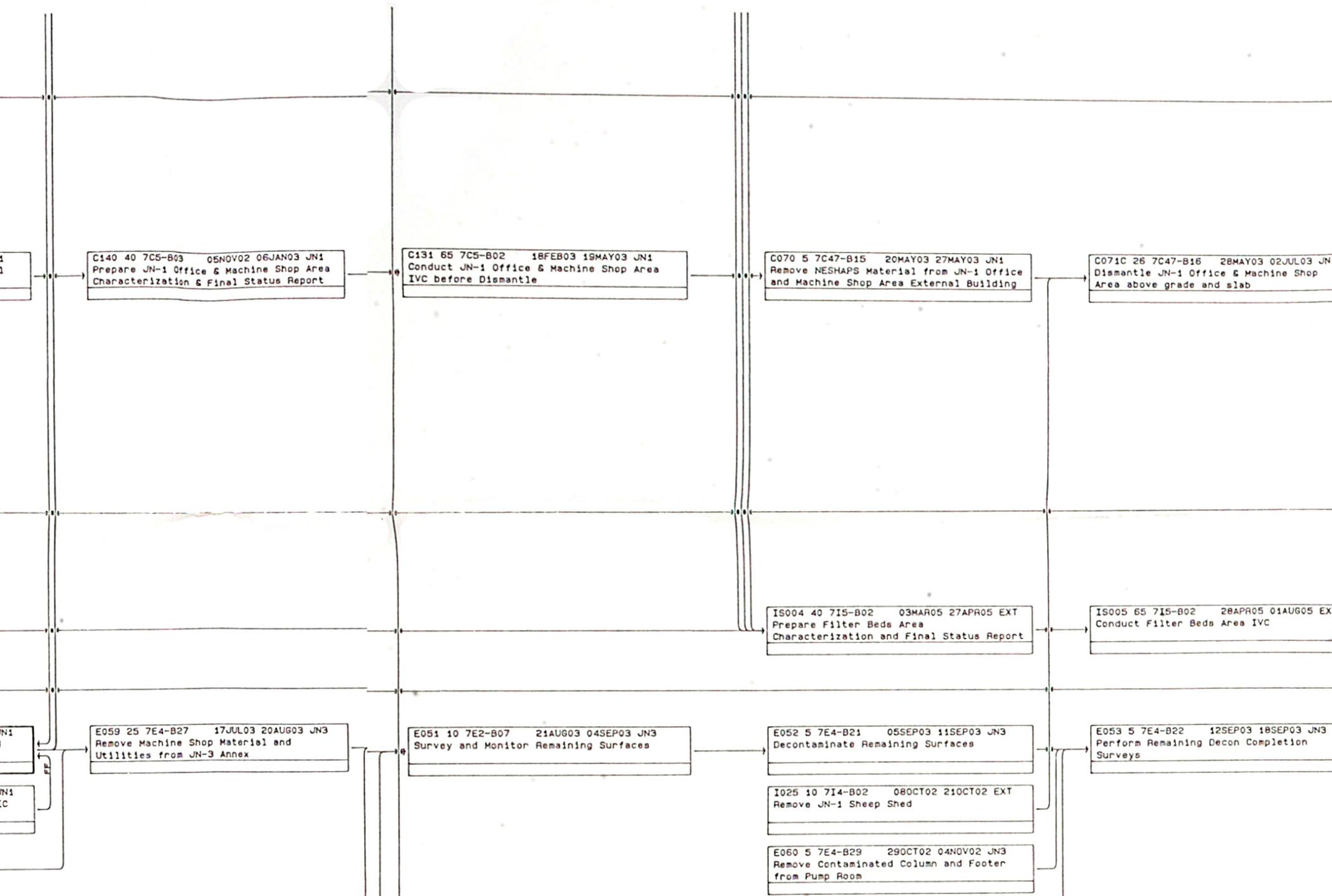
AUG05 30AUG05 EXT
Fall Completion



BCLDP BASELINE LOGIC

Critical







5 7C47-B16 29AUG03 05SEP03 JN1
Dismantle JN-1 Office & Machine Shop
below grade

C142 1 7C47-B22 08SEP03 08SEP03 JN1
Perform JN-1 Office & Machine Shop Area
Survey/round Remediation Completion

C181 31 7C47-B16 09SEP03 21OCT03 JN1
Stabilize JN-1 Office & Machine Shop
Area after dismantle

7 21 7E2-B06 20MAY04 18JUN04 JN3
Survey & Monitor Underground

I121 2 7I2-B12 21JUN04 22JUN04 EXT
Survey and Monitor JN-3 Dilution Sump

E039 20 7E4-B18 21JUN04 19JUL04 JN3
Excavate Underground Material

I124 24 7I4-B43 23JUN04 27JUL04 EXT
Remediate JN-3 Dilution Sump

I125 1 7I4-B44 28JUL04 28JUL04 EXT
Perform JN-3 Dilution Sump Completion
Survey

E040 1 7E4-B19 29JUL04 29JUL04 JN3
Perform JN-3 Underground Completion
Survey

3

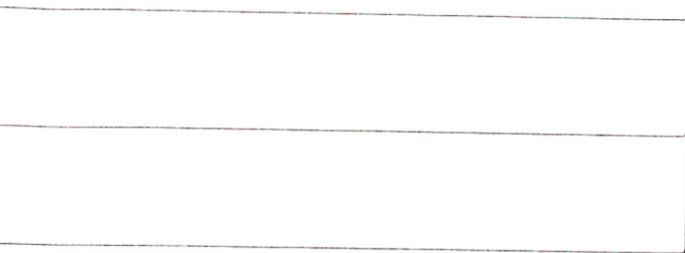
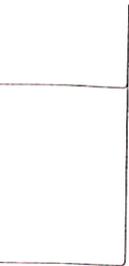
ES013 40 7E5-B01 30JUL04 24SEP04 JN3
Prepare JN-3 Areas Characterization &
Site1 Status Report before Backfill of

ES014 64 7E5-B01 27SEP04 28DEC04 JN3
Conduct JN-3 Areas IVC

CG76 1 7C47-B18 16AUG06 16AUG06 JN1
Perform JN-1A/JN-1B Underground Material
Decon Completion Survey

I035 20 7I4-B02 17AUG06 14SEP06 EXT
Remove Dosimetry Trailer

I01R 10 7I4-B01 08SEP06 21SEP06 EXT
Remove New Access Control Point Trailer



E050 55 7E4-B20 15OCT02 06JAN03 JN3
Remove Remaining Mechanical and
Electrical Equipment from Building

I180 80 714-B61 30DEC02 21APR03 EXT
Establish New Radioanalytical Laboratory
(RAL)

I0003 20 714-B66 01OCT02 28OCT02 WATER
Install water discharge/containment
system for pumped water

I0005 20 714-B66 01OCT02 28OCT02 WATER
Install 3 basal sand wells and 2
additional JN-3 dewatering wells

I180A 924 714-B61 22APR03 19DEC06 EXT
RAD Lab Trailer Leasing Costs

D002 7 7D4-B01 22APR03 30APR03 JN2
Remove 2nd Floor Material

D016 22 7D4-B06 22APR03 21MAY03 JN2
Remove 1st Floor Material

W024A 60 132-B04 06JAN03 28MAR03 TRU
Finish Waste management operations
support for loading pellets

I0006 100 714-B66 01NOV02 27MAR03 WATER
Perform JN-3 pilot dewatering tests and
drill Geoprobe borings

I0004 100 714-B66 01NOV02 27MAR03 WATER
Install 10 pits into 885 layer

E061 4 7E4-B29 25APR03 30APR03 JN3
Remove Reactor Pool Floor

E014 77 7E4-B05 25APR03 13AUG03 JN3
Remove Underground Drains and Dry
Storage Wells

D003 20 7D4-B02 22MAY03 19JUN03 JN2
Remove 2nd Floor Utilities, Hoods, Ducts
and Piping

D017 51 7D4-B07 22MAY03 04AUG03 JN2
Remove 1st Floor Utilities, Hoods, Ducts
and Piping

D031 17 7D4-B07 22MAY03 16JUN03 JN2
Remove 1st Floor Boiler and Utilities

I0008 40 714-B66 25APR03 20JUN03 WATER
Install 2 855 downgradient wells, 5
cluster/dient 885 wells, JN1 3-well

I0007 450 714-B65 28MAR03 10JAN05 WATER
Dewatering of JN-3

E062 3 7E2-B08 01MAY03 05MAY03 JN3
Survey and Monitor Mat Surface in Pool

D004 15 7D4-B02 05AUG03 25AUG03 JN2
Remove 1st and 2nd Floor Asbestos
Material

I0009 40 714-B66 23JUN03 18AUG03 WATER
Install JN-1 6 885 and 4 855 dewatering
wells

E063 25 7E4-B28 06MAY03 10JUN03 JN3
Remove Reactor Coolant Piping and
Drain/Decon Mat

D006 15 7D2-B01 26AUG03 16SEP03 JN2
Survey & Monitor 2nd Floor

D020 13 7D2-B02 26AUG03 12SEP03 JN2
Survey & Monitor 1st Floor

I0010 60 7I4-B66 19AUG03 11NOV03 WATER
Perform JN-1 pilot dewatering tests and
Geoprobe borings

D012P 10 7D4-B03 17SEP03 30SEP03 JN2
PLAN: Decontaminate 2nd Floor Surfaces

D026P 10 7D4-B08 16SEP03 26SEP03 JN2
PLAN: Decontaminate 1st Floor Surfaces

I0011 650 7I4-B65 12NOV03 29MAR07 WATER
JN-1 dewatering

I0002 1100 7I4-B65 01OCT02 12FEB07 WATER
Monitoring of wells and data analysis

D012 13 7D4-B03 01OCT03 17OCT03 JN2
Decontaminate 2nd Floor Surfaces

D026 22 7D4-B08 29SEP03 26OCT03 JN2
Decontaminate 1st Floor Surfaces

I0012 40 7I4-B66 30MAR07 24MAY07 WATER
Disposition and abandonment of wells and
discharge/containment system

I118 1 7I4-B42 01OCT02 01OCT02 EXT
Perform JN-3 Reactor Coolant Pump Tank
Completion Survey

D014 1 7D4-B04 26OCT03 20OCT03 JN2
Perform 2nd Floor Decon Completion
Survey

D027 26 7D4-B08 29OCT03 05DEC03 JN2
Remove Underground Drains

EXT
Tank

JN2
n

3 JN2

D061 20 704-B10 12DEC03 14JAN04 JN2
Remove Mechanical & Electrical Equipment
from External Building Surfaces

D063 6 702-B03 16JAN04 22JAN04 JN2
Survey & Monitor External Building
Surfaces (including Roof)

D069P 10 704-B11 23JAN04 05FEB04 JN2
PLAN: Decontaminate External Building
Surfaces

D069 5
Deconta

D028 4 704-B09 08DEC03 11DEC03 JN2
Perform 1st Floor Decon Completion
Survey

D070 17 704-B11 06FEB04 12FEB04 JN2
Decontaminate External Building Surfaces

D070 2 704-B12 13FEB04 16FEB04 JN2
Perform External Building Surface Decon
Completion Survey

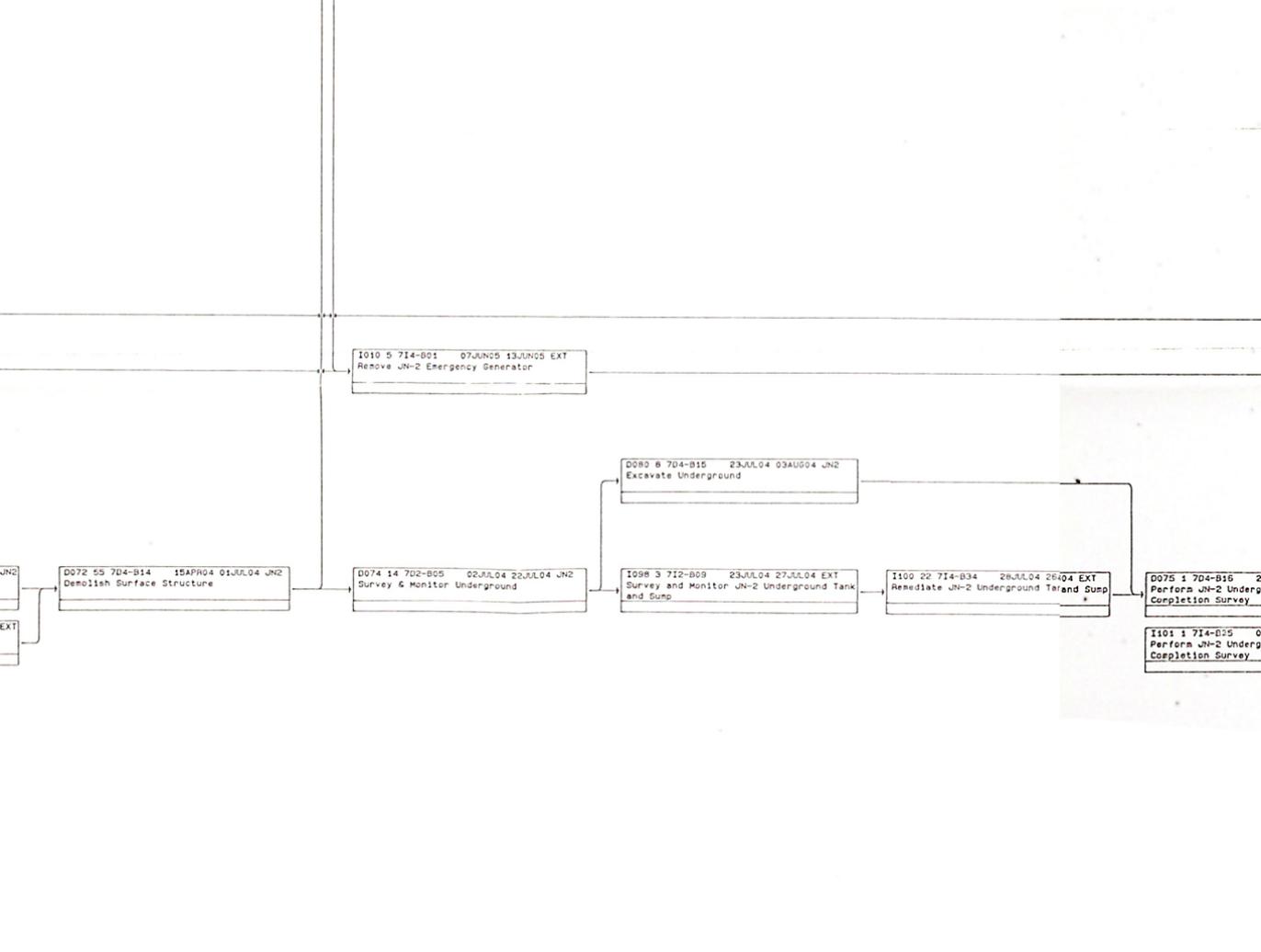
D081 17 704-B17 17FEB04 10MAR04 JN2
JN-2 Final Status Surveys before
Demolition

D067 40 702-B04 15JAN04 10MAR04 JN2
Prepare JN-2 Characterization and Final
Status Report

D062 15 705-B02 11MAR04 31MAR04 JN2
JN-2 IVC before Demolition

D071 10 704-B13 01APR04 14APR04 JN2
Remove NESHAPS Material

D027 10 714-B08 08OCT02 21OCT02 EXT
Survey and Release Old Guardhouse



27AUG04 07AUG04 JN2
Ground Remediation

01OCT02 01OCT02 EXT
Ground Tank and Supp

05010 40 705-001 14JUN05 10AUG05 JN2
Prepare JN-2 Area Characterization and
Final Status Report

05011 64 705-001 11AUG05 09NOV05 JN2
Conduct JN-2 Area IVC

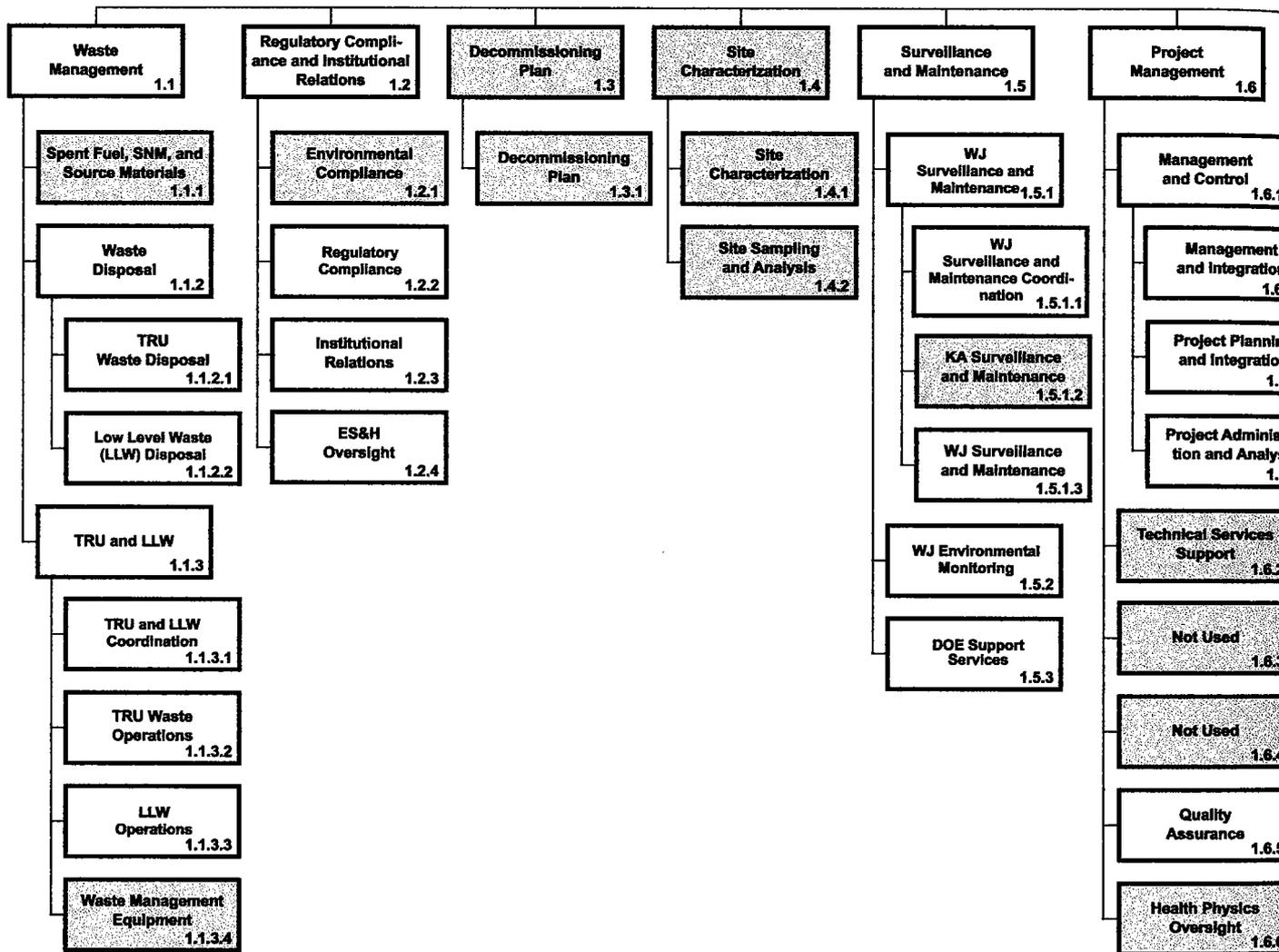
1170 20 714-008 20DEC06 19JAN07 EXT
Remove Rad Lab Trailer

1003 30 714-001 17AUG06 28SEP06 EXT
Remove JN1-2 Break Trailer by JN-1

1026 25 714-002 17AUG06 21SEP06 EXT
Remove Storage Trailer by Break Trailer

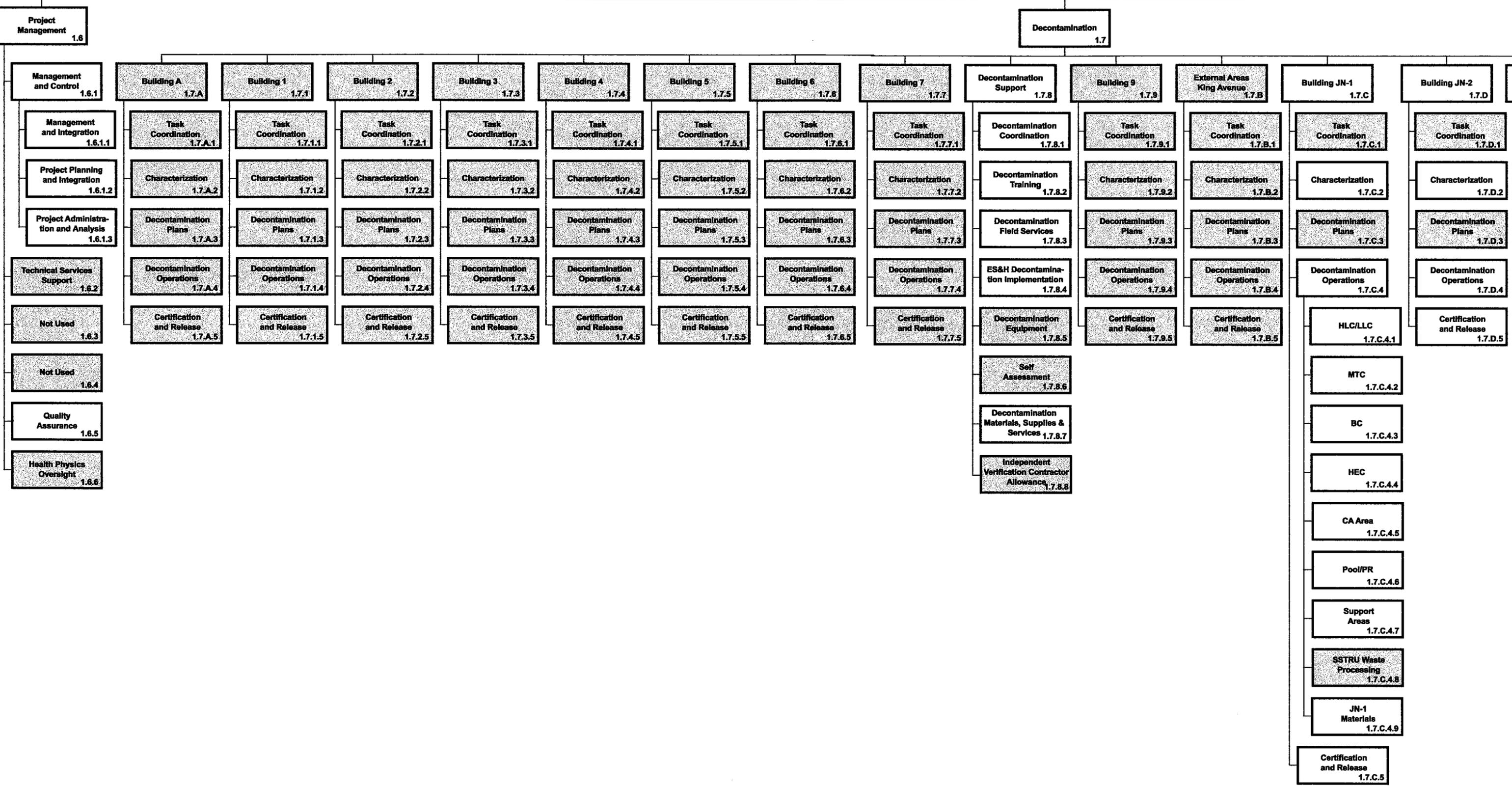
1200 40 714-867 30DEC02 24FEB03 EXT
Install Locker room/Break room/Rest room
Trailer and lease

1165 70 714-856 01MAY07 07JUN07 EXT
Plan and Remediate UN-10/11 Grounds
(columns/sanitary tank)



RACT WORK BREAKDOWN STRUCTURE FOR BCLDP

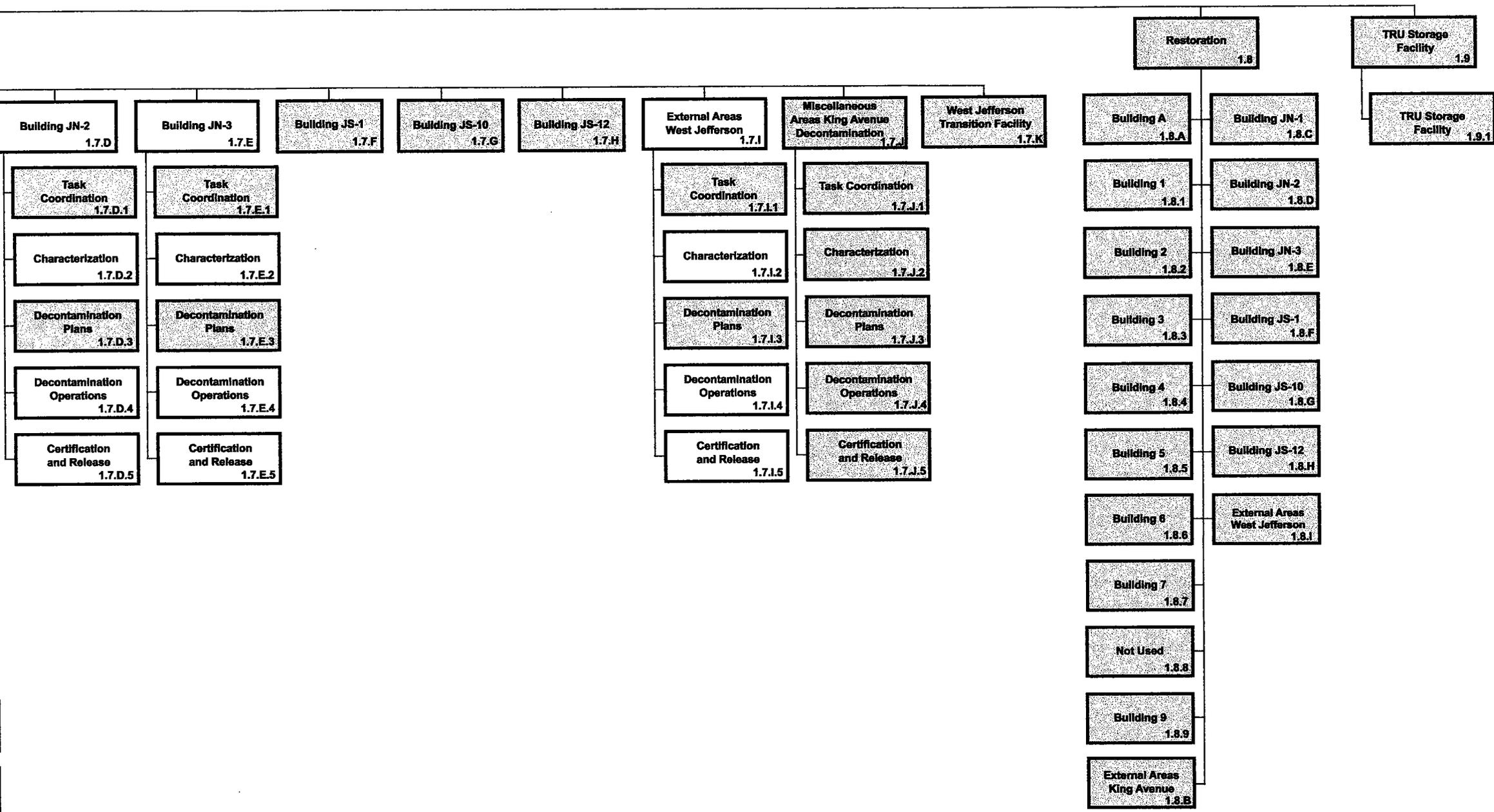
BCLDP 1.0



Revision No. 7

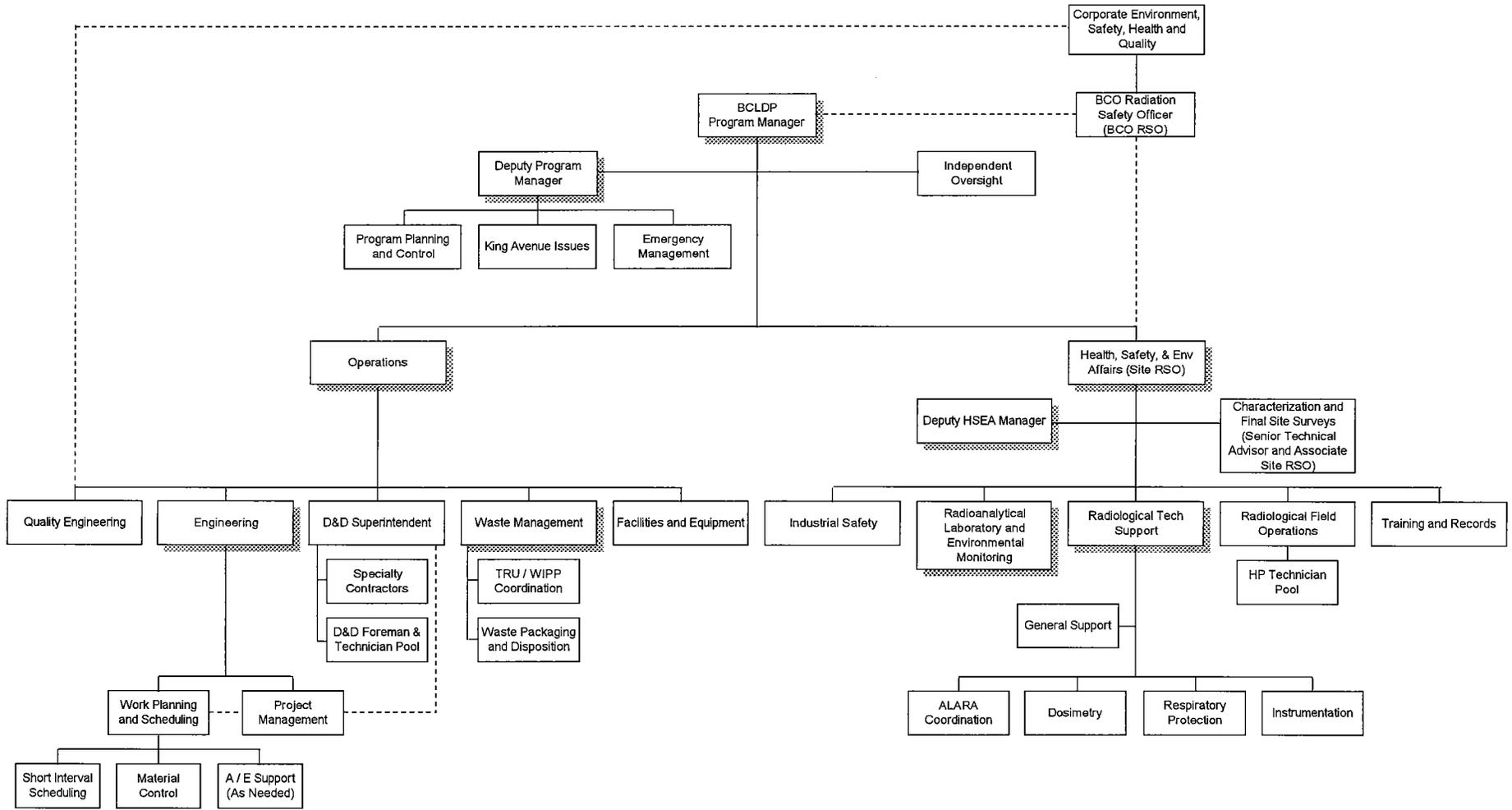
Approved Mike Darnell *MD*

Date December 12, 2002



 WBS elements completed or no longer used

Battelle Columbus Laboratories Decommissioning Project (BCLDP) Organization



Shaded boxes indicate management functions.
 Solid lines indicate direct reporting relationships.
 Dashed lines indicate matrix support relationships.

TECHNICAL SUPPORT / STAFF AUGMENTATION SUBCONTRACTORS

- Bartlett Nuclear, Inc.
- The Chamberlain Group
- TLG Services, Inc.

BCLDP Abbreviations and Acronyms

AAR	assessment action report
ACM	asbestos containing material
Admin	administrative
AEC	U.S. Atomic Energy Commission
A/G	alpha/gamma
AK	acceptable knowledge
ALARA	as low as reasonably achievable
ALI	annual limit on intake
Alpha spec	alpha spectroscopy
AMS	Canberra Alpha Management System
ANL	Argonne National Laboratory
Assump.	assumption
Bartlett	Bartlett Services, Inc. and Bartlett Nuclear Inc.
BCLDP	Battelle Columbus Laboratories Decommissioning Project
BCO	Battelle Columbus Operations
BMI	Battelle Memorial Institute
BRR	Battelle Research Reactor
BWV	baseline waste volume
CAA	Clean Air Act, controlled access area
CAD	computer-aided design
CAM	computer-aided manufacturing
CAR	corrective action report
CEDE	committed effective dose equivalent
CEMP	Columbus Environmental Management Project
CFR	Code of Federal Regulations
Char/HP	Characterization/Health Physics
CH TRU	contact-handled (CH) TRU
cm/sec	centimeter per second
CNS	Chem-Nuclear Systems
COE	Army Corps of Engineers
Conf. Spc.	confined space
cu ft or ft ³	cubic foot
cu m	cubic meter
cy	cubic yard
CYWP	Current Year Work Plan
d or da	day(s)
D&D	decontamination and decommissioning
DCAA	Defense Contract Audit Agency
DD-CP	Decontamination and Decommissioning Calibration Procedure or Characterization Procedure

DDO	Decontamination and Decommissioning Operations
DD-OP	Decontamination and Decommissioning Operating Procedure
Decon Ops	Decontamination Operations
DLV	decision level value
DOE	U.S. Department of Energy
DOE-CAO/WID	DOE Carlsbad Area Office/Westinghouse Waste Isolation Division
DOE-OH	DOE Ohio Field Office
DOE-RL	DOE-Richland
DOL	U.S. Department of Labor
DOP	dioctylphthlate
DOT	U.S. Department of Transportation
dpm	disintegrations per minute
EM	emergency management, environmental monitoring
EPA	U.S. Environmental Protection Agency
ERDA	Energy Research and Development Administration
ES&H	Environment, Safety, and Health
ft	foot
FTE	full-time equivalent
FY	fiscal year
gal	gallon
Gamma spec	gamma spectroscopy
GTS	GTS Duratek
h or hr	hour
HAZMAT	hazardous material
HEC	High Energy Cell
HEPA	high-efficiency particulate air
HESR	Hot Equipment Storage Room
HIC	high-integrity container
HLC	High Level Cell
HLW	high-level waste
HNF	Hanford Nuclear Facility
HP	health physics
HP-AP	Health Physics Administrative Procedure
HPGe	high-purity germanium
HP-OP	Health Physics Operating Procedure
HS-AP	Health and Safety Administrative Procedure
HS-OP	Health and Safety Operating Procedure
HVAC	heating, ventilating, air conditioning
IAA	independent activity assessment
in.	inch
IPA	Independent Programmatic Assessment

IT	IT Corporation
IVC	Independent Verification Contractor
KA	King Avenue
l, w, h	length, width, height
lf	linear foot
LLC	Low Level Cell
LLW	low-level waste
Loc	location(s)
m	meter
m/ft	meters/foot (0.3048)
M&E	mechanical and electrical
MA-AP	Management Assessment Administrative Procedure
Maint	maintenance
MARSSIM	NUREG-1575 "Multi-Agency Radiation Survey and Site Investigation Manual "
MCA	multichannel analyzer
MDA	minimum detectable activity
min	minute
MPM	Microframe Program Manager
MTC	Mechanical Test Cell
NA	not applicable
NASA	National Aeronautics and Space Administration
NCR	nonconformance report
NDA	nondestructive assay
NESHAP	National Emission Standards for Hazardous Air Pollutants (Clean Air Act)
NFS	Nuclear Fuel Service
NIST	National Institute of Standards and Technology
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
NRRT	National Registry of Radiation Protection Technologists
NSSI	NSSI/Recovery Services, Inc., a Houston, Texas, treatment/storage/disposal facility
NUREG/CR	NUREG/CR-XXXX for a report prepared for NRC by a contractor
NTS	Nevada Test Site
NVLAP	National Voluntary Laboratory Accreditation Program
ODC	other direct costs
ODNR	Ohio Department of Natural Resources
ODOH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
OFO	Ohio Field Office (former acronym for DOE-OH)

ORAU	Oak Ridge Associated Universities
ORR	Operational Readiness Review
OSHA	Occupational Safety and Health Administration
O/T	overtime
Pb/Hg	lead/mercury
PCB	polychlorinated biphenyl
PCR	Package Change Request
PIPS	passivated implanted planar silicon
PM	Program Manager, Project Manager, particulate matter
PMP	Publications Management and Production Department
PPE	personal protective equipment
PPR	potential problem report
PR-AP	Project Records Administrative Procedure
PTI	permit to install
Pu	plutonium
QAPjP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
QD-AP	Quality Department Administrative Procedure
Ra-226/228	radium-226/228
rad	a unit of energy from ionizing radiation, radioanalytical, radioactive
RAL	Radioanalytical Laboratory
RAR	Radiological Awareness Report (BCLDP term for what DOE-OH calls RDR)
RC&ESHO	Regulatory Compliance and Environment, Safety, and Health Oversight
RCRA	Resource Conservation and Recovery Act
RDR	Radiological Deficiency Report (DOE-OH term for what BCLDP calls RAR)
Rev/Appr	review and approval
REV3	Revision 3 Baseline
RH TRU	remote-handled (RH) TRU
RL	Richland Operations Office (DOE)
RMW	radioactive mixed waste
RTR	real-time radiography
RWP	Radiological Work Permit
s, samp, or smpl	sample(s)
s/d	samples per day
s/l, samples/l	samples per location
S&M, SM	surveillance and maintenance
Safety Prof.	Safety Professional
SC-SP	Site Characterization Sampling Procedure

SEA	Science and Engineering Associates, Inc.
SER	Site Environmental Report
sf	square foot
SIH-PP	Safety & Industrial Hygiene Program Procedure (BCO)
SNL/NM	Sandia National Laboratories/New Mexico
sq cm or cm ²	square centimeter
sq m	square meter
Sr-90	strontium-90
SWO	stop work order
sy	square yard
TBA	to be approved
TCLP	toxicity characteristic leaching procedure
TEDE	total effective dose equivalent
TLD	thermoluminescence dosimetry/dosimeter
TRU	transuranic
TRUPACT	Transuranic Waste Package Transporter
TSCA	Toxic Substances Control Act
TSDF	treatment/storage/disposal facility
U	uranium
U/G	underground
VCP	vitrified clay pipe
VOC	volatile organic compound
WAC	Waste Acceptance Criteria
WA-OP	Waste Management Operating Procedure
WAP	Waste Analysis Plan
WBS	Work Breakdown Structure
WCP	Waste Certification Program
WI	Work Instruction
WI/SCL/6	Work Instruction/Safety Checklist
WIPP	Waste Isolation Pilot Plant
WJN	West Jefferson North
WM	waste management
WP	waste package, work package
WSPF	Waste Stream Profile Form
WSS	Waste Storage Shed
WWTP	Waste Water Treatment Plant