

**U. S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II - ELEMENT DEFINITION**

1. PROJECT TITLE/PARTICIPANT Environmental Management/Bechtel Jacobs Company LLC		2. DATE 10/1/02	3. IDENTIFICATION NUMBER DE-AC05-98OR22700
4. WBS ELEMENT CODE 04.60.09.02		5. WBS ELEMENT TITLE UF6 Cylinder Storage	
6. INDEX LINE NO. N/A	7. REVISION NO. AND AUTHORIZATION Rev 3		8. DATE 4/15/03
9. APPROVED CHANGES N/A			
10. SYSTEM DESIGN DESCRIPTION N/A		11. BUDGET AND REPORTING NUMBER N/A	
12. ELEMENT TASK DESCRIPTION			
<p>WBS GRAPHIC</p> <p>See attached.</p> <p>INTRODUCTION</p> <p>The mission of UF6 Cylinder Project at Paducah is to maintain safe long-term storage of the DOE UF6 cylinder inventory until its disposition. The inventory currently consists of more than 38,000 cylinders. The primary objective of the UF6 Cylinder Project is to implement the requirements of the Defense Nuclear Facilities Safety Board Recommendation 95-1 (Improved Safety of Cylinders Containing Depleted Uranium Hexafluoride) and applicable requirements of the Safety Authorization Basis Documents. The UF6 cylinder storage facilities are Category II Nuclear facilities as classified in accordance with the requirements of DOE Order 425.1A. The scope of work of the project includes surveillance and maintenance of the current DOE cylinder inventory as well as cylinders transferred or scheduled to be transferred to DOE from the United States Enrichment Corporation (USEC) in accordance with the May, 18 1998 Memorandum of Agreement between the DOE and USEC; the June 30, 1998 Memorandum of Agreement between the DOE and USEC; and the June 17, 2002 Agreement between the DOE and USEC.</p> <p>Objectives of the UF6 Cylinder Storage Project include:</p> <ul style="list-style-type: none"> ? Maintain safe storage of the UF6 cylinder inventory. ? Implement a cylinder inspection program to record and monitor physical condition and defects of the cylinders. ? Implement a radiological monitoring program for periodic monitoring of the UF6 cylinders and cylinder yards. ? Re-stack and relocate cylinders to improve cylinder storage condition. ? Perform preventive and corrective maintenance on the cylinders, cylinder yards, and cylinder handling equipment. ? Maintain configuration control of the entire cylinder inventory, cylinder storage yards, and cylinder handling activities. ? Develop, implement, and maintain safety basis documents in accordance with 10 CFR 830 Subpart B, governing DOE orders, and BJC implementing procedures. ? Provide overall project management and technical support for the planning and execution of UF6 cylinder surveillance and maintenance activities. 			

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<p>LOGIC RELATIONSHIPS</p> <p>There are logic relationships between the cylinder yard construction schedule (WBS 04.60.12.96) and planned cylinder relocations. Cylinders are relocated from existing substandard storage yards in order that the existing yards can be renovated to new concrete cylinder storage yards. Once new concrete storage yards are constructed cylinders are then relocated to the new yards for long-term storage on the new yards.</p> <p>In addition, implementation of the Depleted Uranium Hexafluoride Conversion Project, as required by Public Law 105-204, will have extensive logic relations to this project. A complete transfer of this project to the Conversion Facility contractor is anticipated by one year prior to the start of the Conversion Facility operations. The BJC schedule ends in FY06 based on the current projection for Conversion facility operation and the LCB Guidance.</p> <p>SCOPE DESCRIPTION</p> <p>Release Sites and Facilities</p> <p style="padding-left: 40px;">Assessments to be completed – NA</p> <p style="padding-left: 40px;">Actions to be completed – NA</p> <p>Past and Future Accomplishments</p> <p>Past Accomplishments</p> <p style="padding-left: 40px;">Relocated 693cylinders Completed 2,480 required annual cylinder inspections Completed 8,148 required quadrennial cylinder inspections Completed 679 additional static quadrennial cylinder inspections Completed radiological surveys on 12,940 cylinders Completed ultrasonic wall thickness measurements on 100 cylinders Performed monthly sampling and monitoring of KPDES Outfall 017 for acute toxicity Performed a six-month Toxicity Reduction Evaluation at Outfall 017.</p> <p>Future Accomplishments</p> <p style="padding-left: 40px;">Relocate all DOE cylinders from gravel cylinder storage yards and USEC leased cylinder storage yards to DOE concrete storage yards to facilitate inspections, maintenance, and improve storage conditions. Complete all required annual and quadrennial cylinder inspection. Complete baseline inspection on all cylinders transferred from USEC to DOE. Complete all required annual and triennial radiological surveys. Complete ultrasonic wall thickness measurements on 100 cylinders annually.</p> <p>Scope</p> <p>04.60.09.02.01 – Project Management and Integration</p> <p>Provide project management and integration activities to ensure that all activities within the UF6 Cylinder</p>		

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<p>Storage Project are completed in accordance with the approved baseline. Project management includes those activities associated with overall management, direction and execution of the project as follows: monitoring, control, and reporting of project performance; budget control and accounting; planning, scheduling, and estimating; and system integration including interfacing with the client and subcontractors to ensure completion of planned activities in compliance with applicable regulations, DOE orders, and other requirements.</p> <p>Also included in this WBS is the configuration management, ES&H, quality assurance, and technical support to ensure that all activities within the project are completed in accordance with the applicable requirements and the facility authorization documents. Configuration management includes development and maintenance of procedures and other command media; development and implementation of training; implementation of Integrated Safety Management System including applicable Work Smart Standards; maintenance and implementation of configuration change control; document control including records management; conduct of operational assessments, surveillance, and audits; maintenance of the facility safety basis including performance of Unreviewed Safety Question Determinations (USQDs); cylinder data management.</p> <p>Upgraded safety basis documents have been initiated for BJC Category 2 and 3 nuclear facilities to achieve the regulatory milestone for submittal of 10 CFR 830 compliant Documented Safety Analysis (DSAs) by April 10, 2003. A DSA will be prepared for cylinder operations in accordance with the 10 CFR 830 Implementation Plan, latest version, and the associated integrated BJC and DOE Implementation Schedule and includes a DOE approved hazard categorization. The hazard categorization requests will be submitted to DOE for approval.</p> <p>On an annual basis the DSA will require the following:</p> <ul style="list-style-type: none"> - review of Unreviewed Safety Basis Documents (USQDs), - the preparation of USQD summaries for impact to approved safety basis documents, - preparation of annual updates to approved safety basis documents to incorporate USQDs and other changes, or submittal of a notification letter to DOE documenting that no update is required, and - preparation of updated Authorization Agreements (AAs). <p>The increased rigor of operations related to Facility Management required by DOE regulations flowed-down to BJC is included.</p> <p>Complete development of the Configuration Management Plan and NCSE, carried-over from FY02.</p> <p>04.60.09.02.02 – Cylinder Handling and Stacking</p> <p>A primary focus of DNFSB Recommendation 95-1 is to place the existing DOE cylinder inventory into a safer long-term storage condition. This is primarily accomplished through the construction of new concrete cylinder storage yards and relocation of the existing cylinder inventory onto the new cylinder yards. However, miscellaneous cylinder relocation of cylinders located on gravel yards will be performed periodically to correct deficiencies identified in walkdowns such as cylinders in ground contact and facilitate periodic inspections.</p> <p>1,475 cylinders will be relocated from C-745-N yard to concrete storage yards. These relocations are required to improve the current storage conditions of the cylinders and to relocate cylinders currently stored in C-745-N yard so that this existing gravel yard can be reconstructed to a concrete storage yard.</p> <p>1,735 cylinders will be relocated from C-745-P yard to concrete storage yards. These relocations are required to improve the current storage conditions of the cylinders and to relocate cylinders currently stored in C-745-P yard so that this existing gravel yard can be reconstructed to a concrete storage yard.</p>		

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<p>4,684 cylinders will be relocated from C-745-F gravel yard to concrete storage yards. These relocations are required to improve the current storage conditions of the cylinders and to relocate cylinders currently stored in C-745-F yard so that this existing gravel yard can be reconstructed to a concrete storage yard.</p> <p>948 cylinders (Pre- and Post-Privatization MOA) will be relocated from C-745-R yard to concrete storage yards. These relocations are required to improve the current storage conditions of the cylinders by placing them on concrete yards and to relocate DOE cylinders out of USEC cylinder storage yards.</p> <p>258 cylinders will be relocated from C-745-Q yard to concrete storage yards. These relocations are required to improve the current storage conditions of the cylinders by placing them on concrete yards and to relocate DOE cylinders out of USEC cylinder storage yards.</p> <p>1,007 cylinders will be relocated from C-745-D yard to concrete storage yards. These relocations are required to improve the current storage conditions of the cylinders by placing them on concrete yards.</p> <p>2,599 cylinders will be relocated from C-745-C yard onto new concrete storage yards. These relocations are required to improve the current storage conditions of the cylinders by placing them on concrete yards.</p> <p>Relocate approximately 1,354 Post-Privatization MOA cylinders from C-745-U yard to concrete storage yards. These relocations are required to relocate DOE cylinders out of USEC cylinder storage yards.</p> <p>Relocate approximately 3,000 cylinders from the June 17, 2002 Agreement between USEC and DOE to concrete storage yards. These relocations are required to relocate DOE cylinders out of USEC cylinder storage yards.</p> <p>The WBS provides for all the labor and materials including diesel fuel and other miscellaneous items necessary to implement relocation of these cylinders.</p> <p>04.60.09.02.03 Cylinder, Cylinder Yard, and Cylinder Equipment Maintenance</p> <p>The WBS includes all activities necessary to maintain the cylinders, cylinder yards and associated facilities, and cylinder operating equipment in a safe condition.</p> <p>Maintenance activities are performed on cylinders primarily to prevent release of radiological contamination or to slow the acceleration of corrosion in areas that are prone to corrosion (such as skirt to body crevice). Typical cylinder maintenance activities include cylinder skirt cleaning; replacement of valves, valve port caps, valve packing nuts, and plugs; reattachment of cylinder nameplates; and fabrication of cylinder identification tags.</p> <p>The following cylinder yards and associated roads are maintained under this WBS: C-745-C, -D, -F, -G, -K, -L, -M, -N, -P, -S, and -T. These yards represent approximately 58.5 acres in total area. Maintenance activities include: mowing and weed control on a monthly basis during the months of April through September; roads and ground maintenance as needed; ice removal from roads and aisle ways during the winter season; dust control as needed; collection of trash and debris including storage and disposal of waste; maintenance of cylinder yard electrical and lighting systems; maintenance and clean out of storm water collections systems including periodic pumping and cleaning of the C-745-G-cylinder yard basin; installation and maintenance of yard postings and signage; and striping of roads/aisle ways as needed. Also included in this WBS are sampling, analysis, handling and disposal of debris and waste generated from current cylinder operations.</p> <p>Cleaning and maintenance will be periodically performed on the 4 cylinder painting facilities located in the western section of C-745-G yard. These housekeeping measures are required to ensure that the facilities are</p>		

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<p>maintained in a clean and safe configuration.</p> <p>Preventive and corrective maintenance will be performed on cylinder handling and support equipment to ensure safety of operations. The 3 Allied Wagner NCH-35 cylinder handlers will be maintained in accordance with the preventive maintenance procedure developed for the equipment. Annual and semi-annual preventive maintenance and inspection of the fire suppression systems installed on the NCH-35s will be performed. Also included is preventive and corrective maintenance on two forklifts and any additional handling equipment purchased.</p> <p>04.60.09.02.04 Cylinder and Cylinder Yard Surveillance</p> <p>The WBS provides for the execution of the cylinder inspection program and cylinder radiological monitoring program. The cylinder inspection program consists of performing a visual inspection of the cylinder to determine its condition relative to established inspection criteria. The inspection criterion focuses on cylinder structural and mechanical integrity, cylinder storage condition, and nuclear material configuration control. Inspections are performed using handheld pen computers and the data is downloaded to the Cylinder Information Data database. Cylinders receive a baseline inspection and then are inspected on an annual or quadrennial basis depending on their condition relative to the established inspection criteria.</p> <p>Perform baseline inspections on 164 cylinders originally scheduled for transfer to DOE in FY02 and carried-over to FY03.</p> <p>Approximately 435 cylinders are estimated to be transferred from USEC to DOE in FY 2003 in accordance with the 6-30-98 MOA between DOE and USEC. Baseline inspections will be performed on these 435 cylinders. This will complete the USEC to DOE transfers under the 6-30-90 MOA between DOE and USEC.</p> <p>The cylinder yards and cylinders are periodically monitored to detect the presence of radiological contamination. If cylinders are discovered to have contamination above plant limits the valve is bagged and the cylinder is placed on a monthly monitoring program. The cylinder remains on the monitoring program until the contamination is satisfactorily controlled or the valve or plug is replaced. The cylinder yards are monitored on a quarterly basis and the cylinders are surveyed on either an annual or triennial basis.</p> <p>Ultrasonic wall thickness measurements are periodically obtained as input into a statistical based model to help determine the corrosion rates within the cylinder inventory. The data provides critical information in relation to breached cylinder predictions, code compliance and preventive measurement requirements. Ultrasonic measurements will be taken on a total of 100 randomly selected cylinders annually.</p> <p>04.60.09.02.05 Debris Disposal</p> <p>Complete the disposal of legacy cylinder operations concrete crushate from the concrete rubble crushing activities in FY2001 and FY2002. The crushate will be disposed of in the C-746-U Landfill.</p> <p>REQUIREMENTS/DRIVERS:</p> <p>Bechtel Jacobs Company LLC Contract DE-AC05-98OR22700, December 18, 1997 Integrated Safety Management System Description, BJC/OR-87, Revision 2, September 1999 DOE 5480.4 (Environmental Protection, Safety and Health Program) DOE 5480.19 (Conduct of Operations for DOE Facilities) DOE 5480.20A (Personnel Selection, Qualification, Training & Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities)</p>		

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<p>DOE 5480.21 (USQ – Unreviewed Safety Question) DOE 5480.22 (Technical Safety Requirements) DOE 5480.23 (Nuclear Safety Analysis Report) DOE 420.1 (Facility Safety) DOE 425.1B (Start-up and Restart of Nuclear Facilities) DOE 433.1 (Maintenance Management Program for DOE Nuclear Facilities) DOE 1120-98 (Integration of ES&H Into Facility Disposition Activities) DOE 5400.1 (General Environmental protection Program) SAR DNFSB Recommendation 95-1 10CFR 830; DOE N474.1 (NMC&A)</p> <p>As applicable, indicate other regulatory-related requirements. CERCLA: N RCRA: N DNFSB: Y DOE Orders: Y AEA: N UMTRCA: N State: Y Other: N</p> <p>WASTE VOLUMES:</p> <p>Please see attached waste performance metrics, as applicable.</p> <p>PROJECT SCHEDULE:</p> <p>Please see attached project summary schedule, project detail schedule, and Milestone Status Summary Report.</p> <p>EXECUTION YEAR BASELINE:</p> <p>Please see attached Budgeted Cost of Work Scheduled Plan.</p> <p>BASELINE BY YEAR:</p> <p>Please see attached Baseline by Year Report.</p>		