

Project Status Update for DOE Paducah Citizens Advisory Board

August 10, 2006

Project: Scrap Metal Removal Project

Contact Persons:

Paducah Remediation Services LLC: Chris Marshall

DOE Site Office: Reinhard Knerr

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: Jim Smart/John Russell

Purpose: Environmental Cleanup/Waste Disposition

Description: About 31,000 tons of scrap metal exists at the PGDP, excluding nickel ingots. This project involves the removal of 21,700 tons of general scrap metal, 2,000 tons of aluminum ingots, and approximately 7,412 tons of classified scrap. The project does not include the recycling or disposal of the about 9,700 tons of nickel. Note the classified scrap total has been revised downward based on field experience.

Key documents:

- Engineering Evaluation and Cost Analysis
- Action Memorandum
- Removal Action Work Plans
- Agreed Order DWM-31434-042
- Documented Safety Analysis (DSA)

Recent accomplishments:

- On June 23, 2006, 3231 tons of scrap metal were shipped via rail to EnergySolutions
- Since January 1, 2006, 10,140 tons of scrap metal have been shipped via rail to EnergySolutions
- The final unit train carrying scrap metal in high sided gondola cars has been loaded and is scheduled to leave Paducah in October 2006

Activity over next 60 days:

- Complete disposition operations by inspecting, sorting, size-reducing and packaging scrap metal
- Begin demobilization activities under the EnergySolutions contract

**Project Status Update for DOE Paducah Citizens Advisory Board
August 10, 2006**

Project: Solid Waste Contained Landfill

Contact Persons:

Paducah Remediation Services LLC: Matt LaBarge

DOE Site Office: Jeff Snook

Commonwealth of Kentucky: Todd Hendricks

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

Purpose: Waste Disposition

Description: The operating landfill and support facilities are located on 60-acres of DOE property near Ogden Landing Road, operating under a permit from the Kentucky Division of Waste Management (KDWM). Landfill disposal operations began in 1997. DOE uses the landfill for disposal of solid waste generated from its operations at the Paducah site. Examples of wastes accepted include non-hazardous soil and debris from environmental cleanup and other DOE projects, protective clothing worn by workers, paper, packaging, and landfill office wastes. No waste classified as hazardous or radioactive is accepted.

Key documents:

- Environmental Assessment for the Construction, Operation and Closure of the Solid Waste Landfill at the Paducah Gaseous Diffusion Plant (DOE/EA-1046)
- Environmental Assessment on the Implementation of the Authorized Limits Process for Waste Acceptance at the C-746-U Landfill (DOE/EA-1414)
- Waste Acceptance Criteria for the Department of Energy Treatment, Storage, and Disposal Units at the Paducah Gaseous Diffusion Plant (BJC/PAD-111R4)
- C-746-U Landfill Solid Waste Disposal Facility Permit Number 073-00045

Recent accomplishments/activities:

- PRS is currently conducting start-up testing and training and preparing an Internal Field Review to document the leachate treatment facilities readiness to start leachate treatment
- In July, 29.39 tons of waste material were disposed in the landfill
- Evaluating leachate generation using updated HELP model and factoring in actual leachate generation

Activity over next 60 days:

- Complete testing and training of personnel for operation of the leachate treatment system
- Conduct an Internal Field Review to document readiness to operate the leachate treatment system
- Continue evaluation of leachate storage capacity
- Continue disposal of construction debris and other non-hazardous solid waste streams

Project Status Update for DOE Paducah Citizens Advisory Board

August 10, 2006

Project: Surface Water Operable Unit (On-Site)

Contact Persons:

Paducah Remediation Services LLC: Joe Tarantino, Kendall Holt and
Jana White

DOE Site Office: David Dollins

Commonwealth of Kentucky: Jon Maybriar/Brian Baker

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: Jim Smart

Purpose: Environmental Cleanup

Description: The Surface Water Operable Unit (On-Site) Project includes a site investigation to identify hot spots in ditches and outfalls, including Sections 3, 4, and 5 of the North-South Diversion Ditch. The site investigation scope also includes an evaluation of whether additional sediment control measures are needed, as well as actions for potential legacy releases associated with the storm sewer system. The results of the site investigation will be documented in a Site Investigation/Baseline Risk Assessment Report.

Key documents:

- Sampling and Analysis Plan for Site Investigation and Risk Assessment of the Surface Water Operable Unit (On-Site), DOE/OR/07-2137&D2/R2
- Surface Water Operable Unit (On-site) Site Investigation and Baseline Risk Assessment Report at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-0001/D0

FFA Milestones:

- Issue Site Investigation/Risk Assessment Report by August 16, 2006
- Issue Removal Notification by October 12, 2006

Recent accomplishments:

- Issuance of the SWOU Technical Memorandum for Step 3 Storm Sewer Sampling to EPA and Kentucky

Activity over next 60 days:

- Complete DOE technical review of the SWOU SI/RA D0 and prepare document for submission to Kentucky and EPA
- Request milestone extension for submission of the D1 SWOU SI/RA report

Project Status Update for DOE Paducah Citizens Advisory Board
August 10, 2006
Project: Waste Disposition

Contact Persons:

Paducah Remediation Services LLC: Matt LaBarge/Greg Shaia

DOE Site Office: Reinhard Knerr

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

Purpose: Waste Disposition

Description: DOE is responsible for disposal and/or recycling of legacy wastes (wastes generated at the PGDP prior to establishment of USEC on July 1, 1993); wastes generated from ongoing DOE projects; and a limited amount of waste generated by USEC. After characterization to assure selection of the appropriate disposition method, non-hazardous and non-radioactive wastes are disposed of in the DOE Solid Waste Contained Landfill. *(Please see landfill update sheet.)* Hazardous and radioactive wastes are treated if necessary and shipped off-site to approved DOE or commercial disposal facilities. Wastewater (collected from sumps in diked areas in DOE waste storage facilities at PGDP) is treated and discharged in accordance with the Kentucky Pollutant Discharge Elimination System permit.

Key documents:

- Paducah Waste Acceptance Criteria (BJC/PAD-11, Revision 4)
- Final Environmental Assessment for Proposed Disposition of Waste from the Paducah Site (DOE/EA-1339 and Addendum DOE/EA-1339-A) (FONSI)
- Agreed Order DWM-31434-042
- Site Treatment Plan (STP) DWM-30039-042

Recent accomplishments/activities:

- Shipped 459 cubic feet of mixed low-level waste to EnergySolutions
- Shipped 760 cubic feet of mixed low-level waste to the TSCA Incinerator
- Disposed 1809 cubic feet outside legacy waste in C-746-U Landfill
- Disposed 1971.5 cubic feet of outside legacy waste metal debris via Scrap Metal Project
- Shipped 466 cubic feet of outside legacy waste to EnergySolutions

Activity over next 60 days:

- Overpack outside legacy waste for future shipment to EnergySolutions
- Complete shipments of solid waste to TSCA Incinerator (~6 trucks)
- Repackage low-level and mixed low-level waste for treatment/disposal at Energy Solutions and Perma-Fix facilities
- Dispose legacy waste stored in outside locations in C-746-U Landfill

**Project Status Update for DOE Paducah Citizens Advisory Board
August 10, 2006**

Project: Burial Grounds Operable Unit

Contact Persons:

Paducah Remediation Services LLC: Joe Tarantino/Kendall Holt

DOE Site Office: Jeff Snook

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

Purpose: Environmental Cleanup/Waste Disposition

Description: A Remedial Investigation/Feasibility Study (RI/FS) Scoping Document and the RI/FS Work Plan for the investigation of the Burial Ground Operable Unit (BGOU) at PGDP have been developed. The documents utilize a compilation of sampling information collected on and around the PGDP over the course of the last ten years. The BGOU includes Solid Waste Management Units (SWMUs) 2, 3, 4, 5, 6, 7, 30, and 145.

Key documents:

- Scoping Document for the Burial Grounds Operable Unit Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky
- Work Plan for the Burial Grounds Operable Unit Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/OR/07-2179

Recent accomplishments:

- Revisions to the BGOU D2 RI/FS Work Plan have been made and the document is under internal review prior to submission to Kentucky and EPA

Activity over next 60 days:

- Submit RI/FS Work Plan to Kentucky and EPA by 8/26/06

**Project Status Update for DOE Paducah Citizens Advisory Board
August 10, 2006**

Project: Decontamination & Decommissioning (D&D)

Contact Persons:

Paducah Remediation Services LLC: Don Ulrich/Brad Montgomery

DOE Site Office: Reinhard Knerr

Commonwealth of Kentucky: Jon Maybriar

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

Purpose: Environmental Cleanup/Waste Disposition

Description: The D&D project has completed development of Comprehensive Environmental Response, Compensation, and Liability Act regulatory documentation and has initiated actual D&D of the C-410/420 Feed Plant Complex. The current scope of D&D includes infrastructure removal on the C-410/C-420 complex, as well as ongoing surveillance and maintenance of the C-410/C-420 complex and the C-340 Metals Plant complex. Scope also included development of Safety Basis Documentation for the removal of equipment, piping, and stored material from the C-410 Complex. Operations at both complexes ended in 1977.

The Engineering Evaluation and Cost Analysis and the Action Memorandum for three inactive Facilities, the C402 Limehouse, the C-405 Contaminated Items Incinerator, and the C-746-A West End Smelter, have been completed and approved. The Removal Action Work Plan for the C-402 Limehouse has been approved by the regulatory agencies, and the C-405 and C-746-A West End Smelter RAWP was submitted to the regulatory agencies for review and approval.

Key documents (C-410 and Inactive Facilities):

- Engineering Evaluation/Cost Analysis (EE/CA)
- Action Memorandum
- Removal Action Work Plan (RAWP)
- Cultural Resources Assessment of C-410 Complex
- Agreed Order DWM-31434-042

C-410/420:

▪ **Recent accomplishments/activities**

- Completed buss work removal from Zones 42 and 43 of Sector 2, and completed removal of 108 large electrical switches from these two zones for shipment to ToxCo
- Continued packaging loose debris and waste; packaged 14,000 cubic feet (19 Intermodals and/or SeaLands) in July)
- Shipped 20 Intermodals of debris to Energy Solutions from C-410 for disposal in July
- Developed work packages to begin asbestos abatement and utility piping and equipment demolition in the C-410 Complex
- Initiated emptying, sorting, and segregating of material stored in SeaLands located outside the C-410 Complex, with three of the 16 emptied, sorted, and repackaged

- **Activity over next 60 days**
 - Continue packaging of loose materials in C-410 Complex
 - Continue fixative application to exterior painted metal surfaces of the building
 - Package demolition debris for shipment to EnergySolutions of Utah
 - Complete busswork removal in Sector 2 and 3 of C-410
 - Ship buss work and switches to ToxCo for reuse.
 - Initiate asbestos abatement activities in Sector 2 and 3 of C-410
 - Initiate removal of thousands of feet of piping in C-410, Sector 2 and 3

Inactive Facilities:

- **Recent accomplishments/activities**
 - Completed C-402 Lime House structure demolition
 - Completed sampling activities in C-405 to support waste characterization
- **Activity over next 60 days**
 - Complete removal of rubble and other demolition-related activities at the Limehouse
 - Perform sampling for waste characterization of C-746-A West End Smelter
 - Develop work instructions for C-405 incinerator work

Project Notes:

A UF6 release occurred inside C-410 Building on March 1, 2006, when a mechanic snagged an instrument line while routing an air line through the building, resulting in the line breaking. The line contained residual material that was not completely removed when the facility was shut down. Monitoring outside the building indicated no detectable HF outside the building. Implementation of the recovery process is continuing.

**Project Status Update for DOE Paducah Citizens Advisory Board
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Project: DOE Material Storage Areas (DMSAs)

Contact Persons:

Paducah Remediation Services LLC: John Samples

DOE Site Office: Reinhard Knerr

Commonwealth of Kentucky: Jon Maybriar/Mike Guffey

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: John Russell

Purpose: Environmental Cleanup/Waste Disposition

Description: The 160 DMSAs are non-leased areas inside buildings, as well as outdoor areas. DOE accepted the return of the areas, and the material and equipment they contained from USEC on December 31, 1996, to facilitate NRC certification of the gaseous diffusion plants. At that time, most of the contents needed detailed inventory, characterization, and disposition. Since that time, DOE and contractors have been documenting contents, resolving environmental concerns such as draining and disposing of oils from old equipment, and segregating and disposing of wastes.

Key documents:

- PGDP Department of Energy Material Storage Area Characterization/Remediation Plan (BJC/PAD-186/R4), April 2001
- Agreed Order DWM-31434-042
- Documented Safety Analysis (DSA)

Recent accomplishments/activities:

- 2,596 ft³ of material characterized (including sampling) during July; approximately 664,000 ft³ of total estimated volume of 855,000 ft³ characterized
- 5,184 ft³ of material packaged for disposal during July
- 7,308 ft³ of material disposed during July; approximately 335,000 ft³ of total estimated disposition scope of 630,000 ft³ has now been dispositioned

Activity over next 60 days:

- Complete characterization of "Priority B" DMSAs under the Agreed Order
- Initiate final closure certification for approximately 20 DMSA RCRA Closures
- Transition to rail shipment to disposal sites

Project Notes:

Increased rigor in characterizing painted items for PCB content has impacted characterization, packaging, and disposal activities. Effort is under way to resolve different requirements and allowances between Kentucky and EPA regulations for solid waste disposal of painted items.

**Project Status Update for DOE Paducah Citizens Advisory Board
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Project: Groundwater Operable Unit

Contact Persons:

Paducah Remediation Services LLC: Joe Tarantino, Mike Clark, and
Bryan Clayton

DOE Site Office: David Dollins

Commonwealth of Kentucky: Jon Maybriar/Todd Mullins

U.S. Environmental Protection Agency: David Williams

Citizens Advisory Board: Jim Smart

Purpose: Environmental Cleanup

Description: This project addresses environmental remediation of groundwater contamination on a site-wide basis. The main contaminants of concern are trichloroethylene (TCE) and technetium-99 (⁹⁹Tc). Remedial actions will be designed and implemented after completion and signing of Records of Decision (RODs).

Key documents:

- Feasibility Study of the Groundwater Operable Unit at PGDP (DOE/OR/07-1857)
- Agreed Order DWM-31434-042
- Six-Phase Treatability Report (DOE/OR/07-2113)
- Proposed Remedial Action Plan for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2114)
- Southwest Plume Site Investigation Work Plan (DOE/OR/07-2094)
- S&T Landfill Site Investigation Work Plan (DOE/OR/07-2098)
- Record of Decision for Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2150&D2/R2)
- Remedial Design Work Plan for the Interim Remedial Action for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2214&D2)
- Remedial Design Support Investigation Characterization Plan for the Interim Remedial Action for the Volatile Organic Compound Contamination at the C-400 Cleaning Building (DOE/OR/07-2211&D2)
- Site Investigation Report for the Southwest Groundwater Plume (DOE/OR/07-2180&D2)
- Site Investigation Report for the C-746-S&T Landfills (DOE/OR/07-2212&D2)
- Land Use Control Implementation Plan: Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Contamination at the C-400 Cleaning Building (DOE/OR/07-2151&D1)

FFA Milestones:

- D1 Proposed Remedial Action Plan on Southwest Plume by 9/14/06 (Milestone being modified pending resolution of the degradation factor use in groundwater models)
- D1 Remedial Action Work Plan for C-400 by 11/22/06

- 90% Remedial Design Report for C-400 by 12/8/06

C-400 Remedial Action

- Recent accomplishments
 - Remedial Design Support Investigation fieldwork remains in progress. Membrane Interface Probe profiles completed at 26 of 47 locations at C-400
 - The D2 Land Use Control Implementation Plan (LUCIP) for the C-400 Interim Remedial Action will be included in the C-400 Remedial Design Report
- Activity over next 60 days
 - Continue design and design investigation activities for the implementation of the C-400 Interim Remedial Action
 - Continue with development of the C-400 Remedial Action Work Plan and Remedial Design Report

Groundwater Operable Unit

- Recent accomplishments
 - Provided assistance to the KRCEE in its task of reviewing the TCE degradation issue for the entire PGDP site
- Activity over next 60 days
 - Complete the development of the D1 Proposed Remedial Action Plan for the Southwest Groundwater Plume Sources

Project Notes:

- Discussions with the State of Kentucky and EPA are continuing concerning the use of degradation factors utilized in groundwater modeling to support risk assessment development
- The D2 Southwest Plume Site Investigation Report is under review; a meeting is planned for August 22 to discuss comment

**Project Status Update for DOE Paducah Citizens Advisory Board
August 10, 2006**

**Project: Depleted Uranium Hexafluoride (DUF₆) Project Surveillance
& Maintenance**

Contact Persons:

DOE Site Office: John Sheppard

Uranium Disposition Services: Barry Tilden

Commonwealth of Kentucky:

U.S. Environmental Protection Agency:

Citizens Advisory Board:

Purpose: Maintain safe storage of DOE DUF₆ cylinder inventory pending disposition.

Description: The Atomic Energy Act, as amended, gives DOE responsibility for the DUF₆ inventory, which is a by-product from enriching uranium for nuclear fuel. At Paducah, approximately 36,700 cylinders contain approximately 442,790 metric tons of DUF₆. There are also 182 cylinders of low-enriched UF₆, about 900 cylinders of "normal" UF₆ (which has not gone through the enrichment process), and 276 empty cylinders. The DOE inventory at Paducah includes the material generated from 1952 until the establishment of USEC in July 1993, and material transferred from USEC to DOE since that time.

Surveillance and maintenance involves safely storing DUF₆. Most of the 60-acre DOE cylinder yard complex now consists of concrete yards, which provide for improved storage and inspection. In recent years, DOE cleaned and painted 3,368 cylinders that had surface corrosion. DOE continually monitors and inspects its cylinder inventory to assure safe storage.

Key Documents for surveillance/maintenance:

- Handling and Inspection of DOE 48-Inch Diameter UF₆ Cylinders at Paducah (UDS-PA-2400)
- Agreed Order DWM-31434-030
- Final Environmental Impact Statement for the Construction and Operation of the DUF₆ Conversion Facility at the Paducah Site (DOE/EIS-0359)
- Record of Decision for Construction and Operation of the DUF₆ Conversion Facility
- Documented Safety Analysis for the DOE Cylinder Yards, BJC/PAD-459
- Technical Safety Requirements for the DOE Cylinder Yards, UDS-C-TSR-001

Recent accomplishments/activities:

- An agreement with the Bonneville Power Administration (BPA) has been approved to transfer 672 cylinders of DUF₆ to BPA to supply power reactor fuel; 606 cylinders have been transferred through July 2006
- Transferring off-spec "normal" UF₆ cylinders to USEC to fulfill an agreement between USEC and DOE for USEC to remove Tc-99 contamination from the cylinders and provide DOE with "clean" UF₆ feed material
- As of the end of July, UDS has completed 91% of the annual cylinder inspections, 90% of the quadrennial cylinder inspections and 90% of the

radiological surveys required for the fiscal year that ends September 30, 2006

Activity over next 60 days for surveillance/maintenance:

- Continue transferring cylinders as per the two previously mentioned agreements
- Perform annual cylinder inventory
- Begin removing cylinders from C-745-C cylinder storage yard so all DOE UF₆ cylinder will be located near the conversion facility

**Project Status Update for DOE Paducah Citizens Advisory Board
August 10, 2006**

Project: Depleted Uranium Hexafluoride (DUF₆) Conversion Facility

Contact Persons:

DOE Site Office: John Sheppard

Uranium Disposition Services: Guy Griswold

Commonwealth of Kentucky:

U.S. Environmental Protection Agency:

Citizens Advisory Board:

Purpose: Design, build, and operate the DOE DUF₆ Conversion Facility.

Description: The Atomic Energy Act, as amended, gives DOE responsibility for the DUF₆ inventory, which is a by-product from enriching uranium for nuclear fuel. At Paducah, approximately 36,200 cylinders contain approximately 436,400 metric tons of DUF₆. DOE selected Uranium Disposition Services LLC to design, build, and operate facilities in Paducah and Portsmouth to convert DUF₆ to a more stable form for disposal or recycling.

The project site occupies approximately 11 acres immediately adjacent to DOE's DUF₆ cylinder storage yards. The completed capital costs for the facility at Paducah are estimated to be \approx \$91,000,000. The major facilities on the DUF₆ project include the Conversion Building, Administration Building, Warehouse and Maintenance Building, KOH Regeneration Building, and the HF Neutralization Building. The project work also includes a railroad connection, rail sidings, load out facilities, roads, storage areas for full and empty cylinders, and all utilities.

Groundbreaking occurred in July 2004 and construction has continued since that time. At the conclusion of construction, all systems will be tested and the plant will undergo an Operational Readiness Review. The facility construction is to be complete in 2007. Following Readiness Reviews, facility operations are scheduled to commence in 2008.

Key Documents for the Conversion Project:

- Final Environmental Impact Statement for the Construction and Operation of the DUF₆ Conversion Facility at the Paducah Site (DOE/EIS-0359)
- Record of Decision for Construction and Operation of the DUF₆ Conversion Facility
- Paducah Conversion Facility Preliminary Documented Safety Analysis, DUF6-C-G-PSA-001, Rev. F

Recent accomplishments/activities:

- Conversion Building – ~40% pre-cast structural components erected
- Warehouse Building – Work complete except for lightning protection. Punch list prepared and being cleared
- Administration Building – Continued to install HVAC duct, sheetrock, conduit, fire sprinklers and paint walls

- Construction on Bayou Creek Railroad Bridge – Installed surge rock, geotextile fabric, sub-ballast and made switch connection to USEC rail line. Graded, seeded and mulched side slopes. Installed all rip rap at Bayou Creek Bridge and placed flowable fill
- Construction of the rail spur was initiated
- BOP Foundations – Placed 980 cubic yards of concrete for empty cylinder storage area, 760 cubic yards concrete for full cylinder storage area pad and 720 cubic yards concrete for HF foundation. Placed concrete switchgear pad, 4 transformer pads and 820 cubic yards concrete for oxide crane foundation. Placed 500 cubic yards concrete for rail foundations North and South of HF load out, 500 cubic yards for KOH Building foundation, 100 cubic yards for Cooling Tower and Vehicle Access Building foundation
- Continued receiving equipment at site (material received on 75 packages)
- Updated and issued Interface Control Document for USEC utilities

Construction activity scheduled over next 60 days:

- Complete Administration Building
- Complete rail spur to Hobbs Road
- Continue construction of balance of plant foundations S-39
- Complete erection of Conversion Building panels and columns
- Mobilize S-44 Power to Facilities and commence duct cleaning
- USEC to connect 2nd Fire Water connection to UDS
- Mobilize S-33 exterior steel subcontractor
- Continue pre-mobilization work on the HVAC Package S-42
- Continue pre-mobilization of Conversion Building Roof S-23
- Continue pre-mobilization of Piping/Mechanical Equipment package S-40
- Continue pre-mobilization of Electrical Distribution and Instrumentation S-43
- Turn Fire water and Potable water on for DUF₆ Site
- Begin pre-mobilization of KOH Building S-31

Procurement activity planned next 60 days:

- Award KOH – S-31
- Re-bid and award Fire Protection – S-41
- Bid Architectural Finishes – S-32
- Continue to Bid and Procure Major Equipment RFPs

Project Notes:

- Project schedule modified to reflect Conversion Building delay